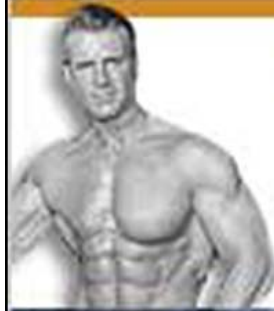


THE #1 DIET & FITNESS E-BOOK IN THE WORLD!



Burn The Fat, Feed The Muscle



Fat Burning Secrets of the
World's Best Bodybuilders
and Fitness Models

TOM VENUTO, CSCS, CPT

*BURN THE FAT
FEED THE MUSCLE
(BFFM)*

**Fat Burning Secrets of the World's Best
Bodybuilders & Fitness Models**

By Tom Venuto

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This program is for educational and informative purposes only and is not intended as medical or professional advice. Always consult your doctor before making any changes to your diet or nutrition program. The use of diet and nutrition to control metabolic disorders and disease is a very complicated science, and is not the purpose of this program. The purpose of this program is to help healthy people reach their cosmetic fitness goals by educating them in proper nutrition and exercise guidelines.

No health claims are made for this program. This nutrition and exercise program will not help cure, heal, or correct any illness, metabolic disorder, or medical condition. The author is not a medical doctor, registered dietitian, or clinical nutritionist; the author is a fitness and nutrition writer and consultant.

If you have diabetes, chronic hypertension, high blood cholesterol, cardiovascular disease, or any other medical condition or metabolic disorder requiring special nutritional considerations, we suggest you consult a health care professional with a clinical nutrition background (MD, RD, or CCN) for your special nutrition program.

Your nutrition plan will not be as effective by itself. You must combine a good nutrition program with an appropriate exercise program for optimal results. If you have been sedentary and are unaccustomed to vigorous exercise, you should obtain your physician's clearance before beginning an exercise program.

The American College of Sports Medicine (ACSM) recommends that apparently healthy individuals who are male and over 40 or female and over 50 to have both a physical exam and a diagnostic exercise test prior to starting a vigorous exercise program. A diagnostic exercise test and physical examination is also recommended in individuals of any age who exhibit two or more of the major coronary risk factors (smoking, family history of heart disease, elevated blood cholesterol, elevated blood pressure, and diabetes). Any individual with a known history of heart disease or other heart problems should be required to have a medical evaluation including a graded exercise test before engaging in strenuous physical activity.

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Preface and Dedication

This book will reveal to you all the secrets of permanent fat loss. It was written by a man who first discovered these secrets the hard way - through long years of trial and error. Using the program in this book, you will reach all your fat loss goals by a much shorter and less costly route; by “modeling” those who have gone before you and learning from an expert.

The primary goals of this program are to help you burn fat permanently without drugs, supplements or gimmicks and to educate you about how the process works. In other words, my goal is to turn you into your own “consumer advocate” and your own “fat loss expert”... to not only show you how, but also teach you the reasons why... and to do all of this without bias or ulterior motive. To achieve this goal, I decided to self publish and to write this book in layman’s terms, with as little scientific jargon as possible.

This program is based on a real-world fat loss method that has been tried, tested and proven for over three decades in the bodybuilding and physique world. But make no mistake – it’s also backed up by science. Since the first edition of this book was published in 2002, I read more than 1100 full text scientific papers to gather and confirm facts for the most recent edition you are now reading.

You’ll see references to many fascinating studies in the book, but I decided not to fill it with references or bog it down with any more science than necessary. Instead, I tried to make it more like you and I just talking, and hopefully, me helping you get motivated.

This book was written for you as a simple, yet detailed instruction manual. You get step-by-step instructions: Do this, don’t do that, eat this, don’t eat that, and so on. This is not just a book full of information – it is a *complete system* that will take you from where you are now to where you want to be – in the shortest time possible.

There are dozens of outstanding books on the subjects of nutrition and fat loss, but far too many of them go overboard on the technical details and scientific terminology, making it either too difficult to understand or simply too boring. Many of these books that merely report research or weigh pros and cons of all approaches without actually giving you a program, leave you with more questions than answers. You begin reading confused and when you finish reading, you’re even more confused.

Others encode their writing into a cryptic jargon that can only be deciphered by fellow scientists and academicians. Sometimes I think bodybuilding, fitness and nutrition writers are more concerned with trying to impress and to receive the approval of their peers than to help their readers achieve their goals.

It never ceases to amaze me how some writers can take a simple concept and make it sound mystical, complex, and a thousand times more confusing than it really is. They would rather write, “Mr. Manning propelled the prolate spheroid” instead of, “Eli threw the football.” Maybe it’s unintentional – they’re simply the academic types – but maybe some of them do it on purpose so their reader remains confused and continues to need the guru’s “help” and “advice” forever. After all, if you learn how simple the process of fat loss really is, you don’t need a guru anymore, do you?

Michael Lebouef, a business consultant and author, once wrote, “A great deal of what we read in medical, technical and academic documents is little more than the old professional snow job game - If you can’t dazzle them with brilliance, baffle them with b.s. The purpose of a great deal of the jargon is to ensure the future of the experts rather than the consumer.”

My goal is not to please the establishment. If reviewers or my peers in the fitness industry don’t like this book, that doesn’t concern me. This book is not for them.

My goal in writing this book is to help you reach your goals, to get you leaner than you’ve ever been before, and to clear up all your confusion about fat-burning nutrition and training that may have held you back in the past. If this book helps you succeed in reaching your fat loss goals, then this book is a success, with or without praise from the critics.

This book is for YOU and this book is dedicated to YOU, the man or woman on the path of personal development and the journey to a leaner body.

Introduction

“If you want to know about fat loss or muscle building, ask top level bodybuilders. These guys know it. In other words, quit buying fat loss devices off of the late night TV ads from former sitcom actors, quit buying ‘fat loss’ stuff that grandma tried when her cribbage partner mentioned it, and quit trying fad diets. Instead, listen to the best of the best.”

—Dan John, strength coach and author of *Never Let Go*

Burn the Fat, Feed the Muscle was written by a bodybuilder, but it’s not just for bodybuilders.

It doesn’t matter whether you’re a gym veteran preparing for a bodybuilding contest or you’ve never worked out a day in your life. If you want to burn body fat and keep it off forever - without losing muscle, without slowing down your metabolism and without starvation, drugs or gimmicks - then this book is for you.

If you’re tired of confusing and conflicting advice on exercise and nutrition, and you want clear, definitive answers to all your questions, with simple but detailed explanations, then this book is for you.

If you wish someone who has no financial interest in the latest diet pill, “miracle” supplement, or stomach-reducing gadget would share honest and unbiased information about fat loss, then this book is for you.

Why would you want to learn about fat loss from a natural bodybuilder? The answer is simple: Bodybuilders have mastered the art of shedding fat *while maintaining muscle*. Conventional diets achieve weight loss at the expense of muscle, which downgrades your metabolism. That’s one of the reasons diets don’t work. I prefer to call ***Burn the Fat, Feed the Muscle*** a nutrition program rather than a diet.

Not only is the natural bodybuilder’s way to fat loss incredibly effective, capable of slashing your body fat well into the single digits (if that’s what you desire), it’s also a lifestyle. Diets don’t work because they’re temporary. This program teaches nutrition habits you can maintain for life.

Before we get into the heart of the program, I’d like to briefly introduce the ***Burn the Fat, Feed the Muscle*** principles to help you establish some expectations and explain, in a short list of twelve points, how this program is different from all the others, and why this might be the most powerful fat-burning system ever developed.

1. *Burn the Fat, Feed the Muscle* is truthful, unbiased and objective.

The goal of this program is very straightforward: to provide the facts about fat loss with honesty and integrity. There's no hidden agenda. I've worked in the fitness and health club industry my entire adult life, encouraging people to take up the natural bodybuilding lifestyle – hard training and whole foods. I have never been involved with the magazine, supplement, or exercise equipment industry. I don't sell supplements, nor have I ever been paid to endorse them. No matter how much money anyone offers me, you'll never see me on a late-night infomercial hawking the latest exercise fad. There are no packaged foods to pitch. There are no creams, pills, powders, drinks, shakes, machines or any other gimmicks whatsoever.

My very first website, Fitness Renaissance, was billed as “The Honest Fitness Site,” and I shared my no-hype, no-gimmick, no-B.S., hard work philosophy with millions of visitors since I started publishing online in 1999. With *Burn the Fat, Feed the Muscle* (www.burnthefat.com), launched in 2002, and our inner circle (www.burnthefatinnercircle.com), which opened its doors in 2006, I continued my crusade for truth and integrity in fitness. I make my living from the health and fitness business, but I will go broke and starve to death before I ever “sell out” or compromise my values. Believe me, I've had no shortage of opportunity.

Years ago, the editor of a major bodybuilding and fitness magazine contacted me with a very tempting proposition. He had been reading my online articles and said they were thoroughly researched and well written. He was so impressed that he wanted to hire me to write for his magazine. For my first assignment, he offered me \$1,000 to interview some of the top supplement gurus, including the CEO of one of the largest nutrition companies in the world. I was then to write a two-page article about the latest developments with a popular yet controversial supplement.

A thousand bucks sounded awfully good, but then he threw in the punch line: He told me that his magazine was sponsored by a (large and well known) supplement company. I'm sure you might guess what he said next. If you guessed that I wasn't to write anything bad about the product, and that I had to present it "in a positive light," then you guessed right. I turned it down. It went completely against what I believe in: objectivity.

Most people believe that magazines are among the most credible sources for nutrition and fitness information, but almost all of the bodybuilding and fitness magazine publishers own supplement companies. By weaving favorable information about new supplement “breakthroughs” into the articles, the claims appear much more believable than if they were made in advertisements. That's why magazines are the perfect vehicles for selling supplements. Many of them have turned into nothing more than “supplement catalogs.”

2. *Burn the Fat, Feed the Muscle* is not a very-low-calorie or starvation diet

Most conventional diet programs have a fatal flaw: extremely low calories. Many of these programs are quite tempting because very-low-calorie diets really can produce quick weight loss in the beginning. The problem is, when the calories are too low, the diet never works for long and the negative consequences outweigh the potential benefits of the rapid weight loss. That's why these types of diets have become known as "quick fixes." It's almost impossible to keep fat off permanently with starvation diets. They're unsustainable, and the human body is simply too smart for this approach to ever work long-term.

When you starve the fat, you also starve the muscle. When you starve the muscle, you lose muscle along with the fat. Your metabolism slows down, you get weaker and your physique actually looks worse than before, while the most stubborn fat deposits still remain. As you continue crash dieting, you trigger your body's starvation response. Your fat loss slows down as your body tries to conserve energy and return you to a state of energy balance, you release more hunger hormones, and you finally give in to the cravings and binge. Your fat loss comes to a screeching halt, you give up, and re-gain the weight.

If you grit your teeth and try to starve yourself even more, your metabolism slows down even further, your appetite increases even more, and it gets harder than ever to stay on your diet. In the end, you always throw in the towel because you can't keep dropping your calories forever. You just can't win the very-low-calorie diet game.

3. *Burn the Fat, Feed the Muscle* is not a diet – it merges nutrition with training – a combination essential for *permanent* fat loss.

To burn body fat, you must create a calorie deficit. There is no other way. A calorie deficit means that you expend more calories than you consume every day. There are two ways to accomplish this: 1. Decrease your caloric intake from food, or 2. Increase the amount of calories you burn through training and other physical activity.

Both methods should be used, but of the two ways, "burn more" is healthier, more efficient and more permanent than just eating less and staying sedentary. That's where the phrase "***Burn the Fat, Feed the Muscle***" comes from: It means, don't *starve the fat* with extreme diets; instead, *Burn the Fat* with training. It also means keep your muscle mass intact at all costs with weight training and plenty of nutrient-dense food, especially protein. Losing muscle is unacceptable.

Paradoxical as it may seem, the most effective method to improve your body composition is to allow yourself to eat more (of the right foods) and use training to build muscle and create a large

part of the calorie deficit. Most people do the opposite: They slash their calories to starvation levels and exercise little or not at all. Any calorie deficit will produce weight loss, even if it's through diet alone. But training allows you to increase the calorie deficit and burn fat faster without slowing down your metabolism or losing muscle. The best part is, you get to eat more. Maybe most important of all, research has conclusively proven that training and high activity levels are absolutely critical for long-term weight maintenance.

4. *Burn the Fat, Feed the Muscle* does not confuse weight loss with fat loss.

Weight loss and fat loss are not the same thing. It's critical to your long term success that you learn the difference between the two. The scale can be very misleading if it's the only way you measure your progress. For example, a woman could weigh 110 pounds and have 33% body fat. That's what I call a "skinny fat person." In contrast, a female bodybuilder could weigh 150 pounds and be quite lean, with her body fat percentage in the low teens.

With this in mind, losing weight should not be your goal. Reducing body fat while maintaining muscle should be your goal. As long as your body is composed mostly of muscle, then you shouldn't worry about your body weight. Your ratio of muscle to fat is what really counts.

Burn the Fat, Feed the Muscle will explain to you all the common methods of body fat testing and teach you how to use body composition to measure your results and chart your progress. You'll also learn how to break a plateau and adjust your approach when your body fat isn't decreasing at the rate you want it to.

5. *Burn the Fat, Feed the Muscle* is not a temporary quick fix. It teaches you new habits you can maintain as a lifestyle.

I define a diet as any *temporary* change in your eating behavior to help you lose weight. From the viewpoint of long term body fat control, the entire concept of dieting is flawed. When you say you're going on a diet, there's a presupposition that it's temporary and at some point you're going to go off the diet. *Burn the Fat, Feed the Muscle* is not a program you go on and off. The only way you'll ever keep fat off permanently is to adopt new habits and keep them for life. You'll need a caloric deficit during your fat loss phase, but the rest of your nutrition program will remain similar all year round, regardless of whether your goal is fat loss or maintenance.

Initially, your new nutrition and exercise disciplines may feel uncomfortable. Sticking with them will take some effort in the early learning stages. After a short adjustment period, you'll discover that it gets easier and easier, until eventually, your new behaviors become deeply entrenched into your daily routine like grooves in a record. Your positive new habits will become as much a part of your daily rituals as taking a shower, brushing your teeth or going to work. Training and good nutrition will become a part of your lifestyle.

6. *Burn the Fat, Feed the Muscle* is not a generic “one-size-fits-all” program - it’s individualized for your goals and your body type.

Certain universal nutrition laws apply to everyone. But after you’ve established a solid foundation by mastering these nutrition fundamentals (also known as “baseline nutrition”), then you’ll need to adjust your nutrition plan to fit your goals, your body type, and even your personality. There are nearly seven billion people on this planet and no two are exactly alike. Each person has a metabolic rate, digestive capacity, hormonal profile, muscle fiber distribution and body structure as unique as their fingerprint.

Burn the Fat, Feed the Muscle was developed to identify and accommodate the many differences in individual metabolisms and body type that might affect your body composition and your health. You’ll also have room to adjust your nutrition and training so it fits into your lifestyle, suits your disposition, and satisfies your personal tastes.

Generic, one-size-fits-all diet or exercise plans will always fail you in the long run. This program will teach you how to determine what body type you have and show you how to customize your nutrition and training to do the very best you can with what Mother Nature gave you to work with.

7. *Burn the Fat, Feed the Muscle* is not just about cosmetic improvements – it’s about your health.

The recommendations I make in this program for losing body fat are mostly the same ones I would make for good health: reduce trans fatty acids, reduce refined sugars, eat a variety of unprocessed foods, eat plenty of fiber, eat fruits and vegetables daily, get sufficient quantities of lean protein, meet your essential fatty acid needs, drink plenty of water, follow a meal plan consistently, and keep calories and portion sizes in mind at all times.

If you’re a physique athlete (bodybuilding, fitness, fitness model, bikini or figure competitor) or if you want to look like one, you may need a more restricted diet when you reach the level of competition training. However, a pre-contest diet is a temporary tool used to help athletes or advanced fitness enthusiasts reach a peak condition. When the event or photo shoot is over, you’ll always return to the same balanced, healthy, baseline nutrition program for maintenance.

There’s nothing wrong with setting purely cosmetic goals or aiming for extremes of low body fat at times. But there’s more to *Burn the Fat, Feed the Muscle* than simply getting a low body fat percentage. To be truly balanced, your goals should focus on being lean and healthy, not one or the other.

8. *Burn the Fat, Feed the Muscle* is simple.

Fat loss can be a confusing subject. Lack of information is not a problem anymore. The problem these days is *too much* conflicting information. There's no shortage of gurus on TV, and there are now more than 60,000 diet books on Amazon.com's virtual shelves. To complicate matters more, the Internet keeps adding to the information overload at a mind-boggling rate. There are more fitness and nutrition websites than we can count and the number is growing by the day. This quagmire of misinformation has left most people frustrated, disillusioned, and thoroughly confused. It's hard to know whom or what to believe anymore.

Even experts such as registered dietitians, MDs, PhDs, and certified trainers give a tremendous amount of contradictory advice. There are a lot of opinions, and everyone seems to tell you something different. This reinforces the importance of depending on science for answers and reminds us of that golden principle of critical thinking: arguments from authorities carry little weight. The experts are often wrong.

Today's information overload problem highlights the need for simplicity. In creating this program, my goal was to clear up the confusion and make this process as simple as possible because the simpler the strategies are, the easier you'll be able to apply them. The easier you can apply them, the more results you will get.

Some of the information you're about to read may surprise or shock you. Most of it, however, is so simple and straightforward, you'll kick yourself for not getting it sooner (But you'll get over it quickly when the fat starts melting off your body, revealing the chiseled muscle definition underneath!)

9. *Burn the Fat, Feed the Muscle* is simple, but it's not easy.

I've always been one of the few people in the fitness industry who was not afraid to say that losing fat is not easy. The reason that so few people will tell you this is because "quick, easy, overnight and effortless" are more marketable. "Hard work, blood, sweat and tears" are not marketable – hard work scares people away.

If you're scared by hard work, then this program is not for you. Losing fat is simple, but it's definitely not easy – there's a big difference between the two. "Simple" means that something is uncomplicated. "Easy" implies that something can be achieved with little or no effort. Losing fat is a simple matter of achieving a calorie deficit by burning more and eating a little less. Nothing complicated there. But easy? Not a chance. Despite what most ads for diets and nutrition products would lead you to believe, there's no such thing as "quick and easy fat loss."

Hard work is the only way anyone ever accomplishes anything. Nothing good ever comes easy. As you sow, so shall you reap. Everything worth having in life has a price attached to it. Legendary Green Bay Packers Coach Vince Lombardi put it best when he said, "The dictionary is the only place success comes before work. Hard work is the price we must all pay for success."

There are ways to work smarter and work more efficiently, but there's no way to reach your goals without work. Do yourself a favor: Cultivate the virtue of being a hard worker. *In the end, the person who works the hardest will always get the best results.*

10. *Burn the Fat, Feed the Muscle* is based on both science and real-world results, not one or the other.

Some of the fat-burning methods used by bodybuilders and fitness models are controversial. The scientific community is often hesitant to accept such radical practices as high-protein intakes, carbohydrate cycling and competition diets. Just as geographers and astronomers in the Middle Ages were ostracized for believing the world wasn't flat and the Earth wasn't the center of the solar system, those who dare step into the spotlight with unproven nutritional theories today are often publicly ridiculed. Questioning the status quo could be risking reputation, recognition and financial reward.

Most scientists live by the credo "prove all things." This is wise advice. Science and critical thinking are the best tools we have to help us formulate our programs and to help us avoid being taken advantage of by charlatans and con artists. But being too scientific and skeptical can be hazardous to your progress. Long-term weight loss research is very difficult to control, and studies on achieving extremes of low body fat and muscularity are few and far between. That's why this book is based on both science *and* real-world results.

If you waited for studies to validate every nutrition and training principle that bodybuilders have already demonstrated to be effective, you could be waiting a long time. At some point, after you've mastered the fundamentals, you have to start experimenting, measuring the results, and drawing your conclusions based purely on the outcome.

Physique athletes are as susceptible to myths as anyone, maybe more so, but when it comes to altering body composition, bodybuilders and fitness competitors are often ahead of the science, and the results they've achieved prove it. You wouldn't see drug-free male bodybuilders at 3-5% body fat and females at 8-12% body fat if they weren't using the most powerful fat-burning principles on Earth. The proof, as they say, is in the pudding!

11. *Burn the Fat, Feed the Muscle* teaches you the secrets of goal-setting and mind power to achieve any goal you desire.

All the knowledge in the world is useless if you can't get yourself to apply it. What's the difference between someone who knows what to do and someone who does what they know? Why is it that some days you can't get motivated to work out? Why do you sometimes have lapses in willpower? Why do you follow a diet for weeks and then fall off the wagon? Why do you sabotage yourself? These things happen when you don't know how to set goals properly and you don't understand how to harness the power of your subconscious mind.

The human subconscious mind is a cybernetic goal-seeking mechanism similar to those used to guide missiles or torpedoes to their target. In this program, I'll teach you how to set powerful, compelling goals and unleash the virtually unlimited power locked in your mind. Using mental training techniques such as goal-setting, cognitive psychology, psycho-cybernetics, neuro-linguistic programming, visualization and affirmations, you'll be able to erase the negative programming of the past and literally re-wire your brain to put you on automatic pilot mode toward achieving the body of your dreams.

12. *Burn the Fat, Feed the Muscle* is based on real food you can find right in your local supermarket – no supplements or shakes are required.

It's tempting to believe that all you need to solve your excess body fat problem is a fat burner pill or diet drink. The supplement companies certainly want you to believe that. The truth is that training and good nutrition from whole foods are all you'll ever need. Protein shakes and meal replacement products are sometimes helpful, but have no magical fat-reducing properties. They are nothing more than powdered food. Their primary benefits are convenience and easy calorie control.

The majority of so-called fat burner products are completely worthless and have no scientific evidence supporting their use. Pills that rely on thermogenics or appetite suppressants may help a little, but they aren't nearly as effective as many advertisements claim, and there are potential hazards with overuse or abuse of stimulants.

If there's any true secret to fat loss, it's hard work on your nutrition and training program. The sooner you accept this fact, the sooner you'll be the proud owner of a lean body. Unfortunately, this isn't what most people want to hear. In this age of instant gratification, people want overnight success and miracle cures, but those are fantasies. If there really were a pill that burned off fat, there wouldn't be a billion overweight people in the world today.

Be patient in the beginning – all the information will come together in the end.

Burn the Fat, Feed the Muscle is incredibly thorough and detailed. The book was designed to be the definitive guide to fat loss. Thousands of readers call it “the bible of fat loss.” It took me 14 years of work and study to initially compile the information and then I’ve continued to revise and update it for 10 years after that. The information in this book came from literally thousands of separate sources and years of in-the-trenches trial and error.

As you begin reading, you might feel overwhelmed with the amount of information I give you in the early chapters and wonder when you’re going to “get it.” Don’t be discouraged - it will all come together in the end. There’s so much I want to share with you and the only way to do that is to teach it one piece at a time in a logical order.

As you work your way through the ebook chapter by chapter, all the pieces will slowly begin to fit together. By the time you reach the final chapters, everything will fall right into place all at once, and you’ll experience a sort of “nutritional enlightenment.” But you can’t reach this final state of knowledge and understanding without first passing through all the necessary initial stages and learning the fundamentals from the ground up.

If you want to get started quickly, you can jump right to chapter 14, which contains the actual *Burn the Fat, Feed the Muscle* eating plan, which makes that chapter a very good “quick start guide.” You can also jump to the appendix, where you can see some sample meal plans and an extensive data base of recommended foods. It’s especially important however, that you begin with Chapter 1 and complete all the goal-setting exercises before going on to the rest of the book.

After you’ve read through the entire manual once, then put together your personal plan using what you’ve learned, and start immediately! The secret to finishing anything is starting it.

Stay connected!

Please stay in touch and keep me posted on your progress. You can connect with me on social media sites like <http://www.facebook.com/burnthefat> and <http://twitter.com/tomvenuto>. You can also reach our help desk support team at <http://www.burnthefat.com/contact.html>. If you want to join thousands and thousands of fellow BFFMers at our private, members-only support community, visit the Burn the Fat Inner Circle at: <http://www.BurnTheFatInnerCircle.com>

Train hard and expect success,

Tom Venuto

Chapter 1: How to Set Powerful, Compelling Goals That Propel You Forward and Charge You Up With Unstoppable Motivation

“The greater danger for most of us is not that our aim is too high and we miss it, but that it is too low and we reach it.”

—Michelangelo

“The strangest secret in the world is that you become what you think about.”

—Earl Nightingale

The simple procedure you must complete *before* you begin any nutrition or exercise program.

This might be the most important chapter in the entire book – even though it has nothing to do with calories, protein, carbohydrates, fats, cardio, weights or anything else related to nutrition or training. You see, there’s a simple, but critical procedure you must complete before you lift a weight, jog a mile, start a nutrition program or even set foot in a gym. If you successfully complete this procedure, the nutrition and training will come naturally and a lean body will soon follow. If you ignore this step – like most people – you are destined to fail, no matter what you do or how hard you try. This crucial first step is goal setting.

Much has been spoken and written about goal setting – entire books have been devoted to the subject – but the truth is, most people never decide exactly what they want. Some people give their goals a fleeting thought, but most never get specific and commit their dreams and desires to writing. “Most people,” says Denis Waitley, author of *The Psychology of Winning*, “spend more time planning a party, studying the newspaper or making a Christmas list than they do planning their lives.” According to Zig Ziglar, an expert on goal-setting and one of the nation's most respected motivational speakers, only 3% of Americans have actually taken the time and effort necessary to put their goals on paper.

This is unfortunate because the number one reason for failure in losing body fat – and in life – is the lack of clearly defined, written goals. Ziglar compares not having goals to shooting at a target with a blindfold on. “How could you possibly hit a target you can’t even see?” says Zig. If you don’t know where you’re going, you’re probably not going to end up anywhere! Action without planning is one of the biggest causes of failure. I’d like to share with you the most powerful goal-achieving formula in the world, but before I do, you first need to understand the hidden reasons why goal setting is so important.

The difference between knowing what to do and doing what you know

Nutrition and exercise can be confusing subjects, so when you first get started, the initial challenge is that you don't know what to do. Now that you have this program in your hands, knowing what to do is no longer a problem. However, gaining knowledge is only half the battle. The far greater challenge for most people is applying that knowledge and taking action. There's a big difference between knowing what to do and doing what you know. Goals are the bridges that span this gap.

Goals, when properly planted in the subconscious mind, provide direction and stimulate action. Goals create energy and motivation. Goals get you out of bed early in the morning and into the gym. Goals keep you going when you feel like quitting. The secret to staying motivated all the time is to set emotionally charged goals – in writing – and to stay totally focused on those goals day and night. A goal with a purpose is the fuel that propels you forward.

You might think that you're in total conscious control of your behavior, but it's really your subconscious that's in control. If you know what to do but you can't get yourself to do it, you've probably been giving negative or conflicting messages to your subconscious mind. The repeated behaviors produced by subconscious conditioning are more commonly referred to as habits. Fortunately, you can reprogram your subconscious mind with positive instructions and become a creature of positive habit, just as easily as you can become a victim of negative habits. It all begins with a conscious decision and written goals.

The power of thought

After competing in dozens of bodybuilding competitions and helping thousands of people with training and nutrition programs, I've become firmly convinced that the most important part of getting in great shape is simply making up your mind to do it. You get in shape by setting goals and thinking about them all day long. I know that sounds a little strange, but stay with me for a minute and I'll explain.

I'm not saying you can simply "think yourself thin." No amount of positive thinking will help without action. Obviously you have to exercise and eat the right foods in the right amounts. What I'm suggesting is that if you don't channel your mental energies properly, even the best nutrition or training program is useless because you will always sabotage yourself.

Did you ever wonder why you've had lapses in willpower? Or why some days you just couldn't drag yourself to the gym? Or why you fell off the wagon completely? Or why you couldn't say no to chocolate or to that second helping of food? It's because negative programming in your subconscious mind was controlling your behavior.

This is not a new age or Pollyanna mentality – there are valid scientific reasons why goal-setting works. Goals work because they harness and direct the awesome power of your subconscious mind, and your subconscious mind guides your behavior on autopilot.

How your “mental computer” is programmed for success or failure

Your mind has two components: the conscious and the subconscious. The conscious mind is the rational, logical, analytical, thinking part of the mind. It is constantly taking in information from the five senses, and then it reasons, analyzes and comes to conclusions about whether the input is true or false. The subconscious is the part of the mind responsible for storing data (memory), for automatic behavior (habits), reflexes and autonomic functions of the body such as digestion, breathing and circulation.

Unlike the conscious mind, your subconscious does not think or reason. It's entirely deductive in nature, and it works like a computer. All the data programmed into your subconscious “computer” is accepted as a command. It doesn't matter whether the input is actually true or false – everything that reaches the subconscious is assumed to be true. Your mental programming is then carried out in the form of behaviors, the same way a computer executes its programming.

Suggestions given under hypnosis or visualization during deep relaxation are quick ways to access the subconscious mind. Another way to penetrate the subconscious (although much slower) is through spaced repetition. Everything you hear, see, say, read or think repeatedly will eventually filter into your subconscious mind, especially if it's repeated with emotion. In other words, you are constantly programming your brain through conscious self-suggestion – or you are allowing your brain to be programmed through unconscious external suggestion. *That's why you must take conscious control over programming your own brain.*

The basis for the positive-thinking movement and philosophies such as the “law of attraction,” is the fact that the subconscious is amenable to suggestion. People who say that positive thoughts and affirmations don't work aren't using them effectively or consistently, or they're wishing for the positive, while thinking about the negative.

If a captain gave an order, “Go east,” then kept changing his mind - “No, go west...no, go north, etc.,” the ship would never get anywhere! That's why most people don't get anywhere in their fitness, weight loss or bodybuilding endeavors either. Ironically, the very statement “positive thinking doesn't work” is a negative suggestion guaranteeing that it won't work!

The psychological reason most people sabotage their efforts to lose body fat

The conscious mind is a lot like the captain at the bridge of a ship. The captain sends a command down to the engine room. The subconscious mind is like the men down in the engine room. No matter what orders come down from the bridge (conscious mind), the crew obeys, even if the orders are stupid ones that crash the ship into a rocky shore. The reason this happens is because the crew (the subconscious) can't see where the ship is going; *they are simply following orders.*

Like the ship's crew, your subconscious mind carries out every command it accepts from your conscious mind. Its sole purpose is to obey your orders, even if you give stupid ones like "I'll always be fat." Frequent repetition of thoughts (mental orders) is one of the most certain ways to penetrate the subconscious mind. By repeating negative commands such as "I can't lose weight" over and over, your subconscious will see to it that you never do lose weight because that's its job – to follow your every command literally and without question. If you program your subconscious with negative suggestions often enough, it will lead you right into cheating on your diet, skipping workouts or some other form of self-sabotage.

Dr. Maxwell Maltz, author of the incredible book, *Psycho Cybernetics*, described the human brain and nervous system as a "perfect goal-striving servo-mechanism." This mechanism helps you achieve your goals much like a self-guided torpedo or missile seeks out its target and steers its way to it. Like the torpedo, the cybernetic mechanism in your brain can only work in your favor if you've chosen a target.

Without a target, your mental "servo-mechanism" will simply steer you toward your dominant thoughts. The subconscious mind is always at work 24 hours a day, whether you direct it consciously or not. Denis Waitley says, "Since we become what we think of most of the time, whatever we are thinking of now, we are unconsciously moving toward the achievement of that thought. For an alcoholic, this could be the next drink; for a drug addict, the next fix; for a surfer, the next wave. Divorce, bankruptcy, and illness are all goals spawned out of negative attitudes and thought patterns."

The power of focus

Because of the way your subconscious operates, it's extremely important to focus on what you want to achieve, not on what you want to avoid. This isn't just semantics; it's a very important distinction with deep implications for fat loss. If I tell you, "Don't think about pink elephants," you *have* to think about pink elephants because your brain can't process negation. You either think about something or you don't, and you always move toward what you think about the most, regardless of whether it's positive or negative.

Like the soil, your subconscious mind is totally impartial – it doesn't discriminate. In it will grow whatever seeds you plant there or *allow to be planted there*. Many people have perfectly good intentions, but they unwittingly allow their subconscious to work against themselves by thinking and talking about what they don't want. And, as metaphysical writer Louise Hay reminds us, "The more you dwell on what you don't want, the more of it you create." Others simply pay no attention to their thoughts whatsoever, and like a garden that's neglected, soon enough, weeds start growing. Eventually, the weeds take over their garden.

Here are a few examples of negative statements and self-defeating questions:

I can't lose weight no matter what I do.
Why can't I lose these last ten pounds?
Why is it so hard for me to lose weight?
I have a slow metabolism.
I'll always be fat.
It's not my fault I'm fat because I don't have good genetics.
I don't want to be fat anymore.
I wish I could get rid of this gut.
It'll never work because I love food too much.
I don't have the willpower to get lean.
I would work out but I don't have time.
I just can't get myself up that early to work out.
I hate being fat.
I'm sick of being overweight.
I'm tired of working out but getting nowhere.
I'm ready to give up.
I'll never see my abs.
I hate cardio.
I can't.
I'll try.

All day long you carry on a mental conversation with yourself. Psychologists estimate that we think up to 60,000 thoughts a day and that 98% of these thoughts are the same ones we had yesterday – most of them negative. In a year, that's almost 22 million thoughts! If Madison Avenue advertising giants can influence your subconscious mind to make a buying decision by repeating an ad a mere two dozen times (they can), then just imagine the impact that millions of your own "thought commands" have on influencing your subconscious mind. It's staggering! That's why it's so important for you to take conscious control over your speech and mental dialogue and program your brain with positive instructions.

Fortunately, the one thing in life you always have total control over is your thoughts. After all, it's *your* brain, right? If you want to be successful at getting leaner or any other endeavor in life, you must master your communication with yourself. You must take charge of your self-talk, "police" your thinking, and literally re-program your brain for success. If you've cluttered your mind with a lifetime of "Stinkin' Thinkin'," as Mr. Ziglar calls it, this may be challenging at first. It will take time to overwrite the old programming, but it can be done.

The first step is to become conscious of what you are thinking and saying. Become more aware of your thoughts and your language. The instant you catch yourself in the middle of a negative thought or self-defeating question, interrupt it! Slam on the brakes like a car heading for a cliff and STOP that train of thought! Mentally imagine a big rubber stamp that says "CANCEL" and stamp it out. Bob Proctor, a master success coach and creator of the Goal Achiever program, suggests saying "NEXT" or "SWITCH" the instant you notice a negative thought, then immediately replacing it with a positive thought, affirmation, or question. Soon you'll find that your mind switches its polarity and the negative thoughts pop up less.

Here are some examples of how you could change the negative self-talk to positive self-talk:

How can I burn fat and enjoy the process?

What can I do today to get me closer to my ideal weight?

What can I eat right now at this meal that will help me burn body fat?

How great am I going to feel after I finish my workout today?

My metabolism is getting faster every day.

I am getting leaner every day.

I like the way I look.

I am 100% responsible for my results.

I am doing whatever it takes.

I like eating healthy foods.

I love working out.

Training early in the morning is exhilarating.

I have time for anything I'm committed to.

I am unstoppable.

I like myself.

I'm the best.

I can.

I'll do it.

The most powerful goal-achieving formula in the world

In the beginning of this chapter, I promised to reveal the most powerful goal-achieving formula in the world. Now that you understand the nature of your subconscious mind and why goal setting works, you're ready to learn the formula.

1. Set specific goals.

When I ask people what they want to achieve from their fitness programs, I usually get vague answers like, "I want to get leaner," "I want to lose weight," or "I want to build muscle." Those are good starts, but they're too general. Specific goals have a more powerful impact on your subconscious. A vague goal is like the captain of a ship saying, "Go west." The ship may be headed in the right general direction, but without a specific destination, it will probably get lost at sea.

Narrow it down. Exactly how many pounds do you want to lose? When do you want to achieve your goal? How much body fat do you want to burn off? How much do you want to weigh? What measurements would you like to have? What size clothes do you want to wear?

2. Set measurable goals.

You must have a way to objectively measure your progress, otherwise you'll never know whether you've actually reached your goals or not. The mirror is definitely a useful tool, because ultimately the only thing that really matters is that you're happy with the way you look. However, because you perceive changes in your body so subjectively (and it's sort of like watching grass grow), it's helpful to have other ways to measure your results.

The scale is also a useful tool, but it doesn't give you 100% of the feedback you need. You shouldn't be as interested in how much you weigh as in how much body fat you carry. The ideal method to measure your progress is body composition testing. Body fat can be measured easily using a skinfold test. Chapter 3 will discuss body composition testing methods in more detail, and Chapter 4 will teach you how to chart your progress and interpret the results.

3. Set big goals.

Far too often, people shortchange themselves and make statements like, "I could never look like that" or "I'm too old." Other people buy into the low expectations of well-meaning family or friends who tell them to "be realistic." Nothing great was ever achieved by being realistic! Most

people get scared when setting goals and ask only for *what they think they can get*, not *what they really want*. That's a mistake because puny goals are not motivating. *Wants* are motivating.

It's okay if your goal scares you a little. In fact, if your goal isn't scary and exciting at the same time, then your goals are too low. Thinking about a big goal you've never achieved before is always going to make you feel a little uncomfortable and afraid. This makes most people pull back into their comfort zones. Don't let the fear of failure or the feeling of discomfort prevent you from going after what you really want. Always step forward into growth; never pull back into safety. Refuse to sell yourself short. Raise your standards. The famous architect Daniel Burnham said, "Make no small plans; they have no magic to stir your blood to action. Make big plans, aim high in work and hope."

Don't be afraid to think big and set your sights high, because you can only hit what you aim at! Decide what you would like to look like if you could have any body you wanted. See the picture in your mind. Make it clear, vivid and dynamic. Dream. Fantasize. You've been endowed with an amazing creative faculty called imagination. Use it. It's the starting point of a new self-image and all lasting changes.

There are genetic limitations to what each person can achieve athletically and physically. However, most people never even come close to reaching their full potential because they don't believe it's possible, so they don't even try. It's really more a question of willingness than genetics. Don't ask yourself, "Is it possible to reach this goal?" Instead ask, "How can I achieve this goal?" and, "Am I willing to pay the price necessary to achieve this goal?" You can always find a way if you keep asking how and you can accomplish virtually anything if you're willing to pay the price.

4. Set realistic deadlines.

"Lose 30 pounds in 30 days!" "Lose 10 pounds this weekend!" You see ads like these in magazines and all over the Internet, and they sure are enticing. But is it really possible? Can you really lose weight that quickly? The answer is yes. It's quite possible to lose 30 pounds in 30 days or 10 pounds over the weekend. However, if you do, you're making a big mistake by confusing weight loss with fat loss.

Your body is approximately 70% water, so it's easy to lose weight quickly. Any diet that dehydrates you will create quick, dramatic weight loss. If you want to lose 10 pounds over the weekend, just stop drinking water! Of course that would be pretty dumb and possibly dangerous too, but that's precisely what you're doing when you lose weight rapidly - you're simply

dehydrating yourself. Even worse, you may lose muscle as well. Your goal should be *fat* loss, not *weight* loss.

The American College of Sports Medicine (ACSM), one of the largest and most respected health, medical and exercise organizations in the world, has established guidelines for healthy weight loss. In their position statement "Proper and improper weight-loss programs," they recommend a weight loss goal of one to two pounds per week. For the impatient, this may seem like an excruciatingly slow process, but the safest, most intelligent and most permanent approach to fat loss is a gradual one.

It's possible to lose more than two pounds of fat per week, especially if you have a lot of weight to lose, but usually weight losses beyond two or three pounds per week are mostly water and muscle. If you lose water weight, you'll gain it back immediately as soon as you re-hydrate yourself. If you lose muscle, your metabolic rate slows down, your body starts to look soft, and you're more likely to gain back the weight you lost. You may even end up with less muscle and more fat than when you started.

Don't be afraid to set big goals, but always set realistic time frames for achieving them. Usually, it's not the goal that's unrealistic, but the deadline. Be patient: There are definite limitations to how quickly the human body can safely lose fat.

5. Set long-term and short-term goals.

As you begin to think about what you want specifically, don't just write down one goal; make a list. Your goal list should include long-term and short-term goals. There are six types of long and short-term goals you can include:

1. Long-term goals and your ultimate "ideal body"
2. One-year goals
3. Three-month goals
4. Weekly goals (weekly body composition test and weigh-in)
5. Daily goals (habits to develop, behaviors to do every day)
6. The goal of continually beating your personal best

First, set long-term goals, including your ideal body. What kind of body do you ultimately want to have? Let your imagination run wild and dare to dream. Don't listen to people who say it can't be done! You can't afford to associate with negative people who always try to tear you down. If you really want it badly and you're willing to work for it, then go ahead and set the goal.

Next, set a one-year goal. A one-year goal is especially important if you have a lot of body fat to lose. For example, if your primary objective is to lose 100 pounds, that's a twelve-month project. Don't expect to do it much faster.

Probably the most important goal you can have at any time is your three-month goal. Your three-month goal is usually the one you'll write down on a goal card and carry around with you, thinking about it and visualizing it repeatedly throughout the day. Three months is the perfect time frame for a fat loss or bodybuilding goal because it's easy to maintain your focus for that period and a lot can happen in three months. A sensible and realistic three-month goal would be to lose about 6% body fat and 18 - 24 pounds.

The three-month goal is important because long-term goals don't have any urgency. A one-year goal is so far away, you may tend to procrastinate more without the impending deadline. There's a psychological principle called "Parkinson's Law," which says, "Work expands to fill the time available for its completion." Differently stated, "A task takes as long as there is time to do it." Deadlines are not only motivating, they're a necessity, because otherwise, nothing gets done. Without time pressure, you'll rationalize missing workouts or cheating on your diet. Your brain will keep saying, "You have plenty of time, so missing this one workout won't matter." With a deadline right in front of you, you'll know that every workout and every meal counts.

You also need to set weekly goals to let you know if you're on track. Your weekly results provide immediate feedback to tell you whether you're moving in the right direction. Each week you should weigh yourself and have your body composition measured with skinfold calipers. If you're getting the results you want, you simply continue doing what you've been doing. If you're not seeing the results you want, you can immediately adjust your training or nutrition to get yourself back on course. (See Chapter 4 for more information about how to chart your progress and adjust your approach each week with a feedback loop system.)

To reach your weekly, three-month, twelve-month and long-term goals, you must develop positive everyday habits. You develop positive habits by setting daily goals (action steps) and repeating them until they become behaviors as automatic as brushing your teeth or taking a shower. Write out a list of daily goals, to-do's, and action steps you need to take every day in order to reach your mid-range and long-term goals. This can include good daily habits such as eating lean protein at each meal; including fruits or vegetables with each meal; choosing mostly natural, unrefined foods; making your meals in advance for each day, and so on.

Your daily goals can also include developing a schedule or set of daily rituals such as when you're going to get up in the morning, when you're going to work out, what time you'll eat your meals and when you'll go to sleep at night. Daily goals also include targets for each workout:

how long your workout will last, how much weight you'll lift, how many reps, which exercises, how many minutes of cardio, and so forth. You should plan every workout in advance as part of your daily goals. Never "wing it."

Long-term goals are important, but if you only look at the big picture, it can sometimes be unsettling to realize how much farther you have to go. There's an old saying about tackling big tasks: "The only way to eat an elephant is one bite at a time." When your larger goals are broken down into smaller parts and you focus on each little step one at a time, you won't be overwhelmed. "By the mile it's a trial, by the yard it's hard, but by the inch it's a cinch." Take baby steps. Every step you take, no matter how small, will give you a feeling of accomplishment and keep your momentum going. The important thing is that you're moving in the right direction.

The next time you feel temporarily frustrated, discouraged or unmotivated, focus on your daily goals, not on the huge amount of work that's ahead of you. Tell yourself, "All I have is today. All I have is this moment, this workout, this meal, the next 30 minutes, the next hour. If I simply do what I know I must do today, then I know I'll reach my ultimate goal eventually." As the Zen masters remind us, concentrate on the task at hand in the present moment.

The final type of goal isn't so much a goal as it is a mindset. If you fall into the habit of continually comparing yourself to others, this will ensure that you're perpetually unhappy and unsatisfied, no matter how much you achieve. This is called the law of contrast. There will always be people who are stronger, leaner, faster, more athletically talented and more genetically gifted than you. Comparing yourself to them will only make you feel bad. Be inspired by others, but compare yourself only to yourself.

Set goals to *become better than you used to be*, not to become better than someone else. Constantly challenge yourself. Keep aiming to beat your previous bests. Training can become fun and exciting when you always work on improving yourself. So make it fun – make a contest out of it. Go for one more rep, five more pounds, five more minutes, or one level higher on the stair-climbing machine. Aim for hitting your lowest body fat ever. Work on constant and never-ending improvement and make this process a fun challenge!

6. Make sure your goals are not conflicting - put all your attention on your number one, most important goal.

There's an ancient Chinese saying: "He who chases two rabbits catches neither." One of the most common obstacles blocking the way to reaching a goal is setting two or more goals that

conflict with each other. Training for strength and muscle mass while trying to train for long distance endurance events at the same time is a perfect example. They're not compatible.

Many people would like to gain muscle and lose fat at the same time. Although it can be done, the goals aren't very compatible, so it's a slow and inefficient process. To lose weight, you need a calorie deficit. To gain muscle you need a calorie surplus. One process is catabolic and one is anabolic. Therefore, there are big differences in the types of nutritional programs you need in order to achieve each of these goals.

Over a period of weeks or months, it's not uncommon to see a small increase in muscle with a decrease in body fat. However, that's usually not gaining muscle and losing fat at the same time literally speaking, that's the result of alternating back and forth between short periods of caloric deficit and surplus (also known as the "zig-zag" method). When someone successfully gains muscle and loses fat, they're usually beginners whose bodies respond to exercise very quickly, they are merely regaining muscle they had previously lost, they're genetic superiors or they used performance enhancing drugs.

Charles Glass, who has probably worked with more professional bodybuilders than any other trainer, advises: "While you are dieting and burning fat, you are not likely to add any more muscle. Burning fat and gaining muscle do not go well together. Concentrate totally on getting lean and defined during a pre-contest phase and forsake the thought of adding muscle to what should be an already prepared framework."

Although Charles was speaking of competitive bodybuilders, his advice applies to everyone: Don't count on large muscle gains during a fat loss phase and don't set out to achieve any two goals concurrently if they conflict with one another. If you are overweight, get most of the fat off first, then set a new goal for gaining muscle while staying lean.

7. Establish the emotional reasons *why* you want to achieve your goals.

Almost everyone has days when they don't feel like working out or eating the right foods. The secret to staying on track at times like these is not just having a goal, it's establishing the reasons why you want that goal - the *importance* of it. Uncovering the reason you want to achieve something adds emotion to it. The more emotion you stir up, the more motivated you'll be to go after it. The philosopher Nietzsche said that if you have a strong enough *why*, you can bear almost any *how*.

Getting emotionally involved with your goal also impresses it deeper into your subconscious, and whatever idea is fixed in your subconscious will always express itself in physical form (behaviors and results).

Looking good for a wedding or vacation is an important reason why many people want to get in shape. So is being attractive to potential life partners. For others, the reason is fear of health consequences (their doctor tells them if they don't lose 50 pounds in the next six months, they'll die of a heart attack). Some people want to get healthier so they'll live long enough to see their grandchildren grow up.

What are *your* reasons why you want to achieve your goals? To help you uncover them, answer these questions:

1. What's important to you about reaching your goal?
2. Why is that important to you?
3. What impact, specifically, will achieving this goal have on your life? (How will your life be different and better after you've achieved it?)

Some additional questions you might ask yourself include:

Who is your physique role model?

What do you want to look like?

Do you want to look like a bodybuilder, an athlete, or a model?

Do you want to impress anyone?

Do you want to prove something?

Do you want to be a role model or set an example?

Do you want more energy?

Do you want more mobility so you can enjoy certain sports and activities more?

Do you want to win a contest or award?

Do you want more self-confidence?

Do you want to look great in certain types of clothes?

Do you want to look good for a certain event (vacation, wedding, reunion, birthday, etc.)?

Do you want to look great on the beach?

Do you want to attract someone special into your life?

Answering these questions will help you discover the driving force behind your goals and add emotional impact to your goal list.

8. Write out a goal list in the form of affirmations.

After you've set your goals in terms of a specific weight, body fat, measurement, and so forth, and you know the reasons why you want them, the next step is to write all your goals on a sheet of paper or on cards in the form of positive statements called *affirmations*.

There are three guidelines to follow when writing your affirmations:

1. Make your affirmations personal: Use the word "I" with a verb after it.

For example: I exercise, I cook, I wake up, I eat, I have, I plan, I enjoy, I lift, I get, I take, I deserve, and so on. One of the best ways to start an affirmation is to use the phrase "I AM." Your subconscious responds best to commands given to it in a personal manner. Anything you say after "I AM" has power. One of the best affirmations I've ever heard comes from Bob Proctor, and it goes like this: "I am so happy and thankful now that I am _____" (fill in your goal).

2. Write your affirmations in the present tense.

To your subconscious mind, there is no future. Your subconscious mind responds best to commands given in the present tense. It may feel strange to write a goal this way, but if you write it in the future tense (for example, "Next year I will" or "I'm going to"), your subconscious mind may interpret that literally and keep your goal in the future. For best results, write, think and visualize your goal as if you've already achieved it.

3. State your goal in positive terms.

Your subconscious moves you toward whatever you focus on, whether it's positive or negative. Therefore, write what you *want*, not what you want to avoid or get rid of. For example, instead of saying "I want to lose 20 pounds," say, "I weigh 130 pounds with 18% body fat."

9. Read your affirmations (your goal list) at least twice a day and always keep your goals in front of you and on your mind.

Psychologists have proven that *repetition* is an effective way to penetrate and program the subconscious mind. Fortune 500 companies spend billions of advertising dollars every year based on this fact. Why is it that people reach for Coke, Pepsi, Budweiser, Marlboro, Crest, Palmolive and other brand-name items? It's because the repetition of the advertising has penetrated their subconscious minds and moved them to action.

You can use the power of spaced repetition to influence your own subconscious and move yourself into action. Once you've written out your affirmations, read your list at least twice a day, once in the morning and once at night. Read them more often if you can. If you want to amplify the effect of the affirmation technique even more, don't just read your affirmations; *write them out by hand every single day or record them in your own voice and listen to them regularly.*

After you've set all your goals and written your affirmations, use the power of repetition even more by literally keeping your goals in front of you all day long. Post your goal statements in a conspicuous place such as your refrigerator, your bathroom mirror or in your daily appointment book. Keep a goal card of your three-month goal in your pocket. Paste them onto the dashboard of your car. Stick them on the top of your computer monitor or make them your desktop background and screen saver so you have to look at them all day long.

You may have been exposed to this affirmation technique before and shrugged it off as hokey. If so, let me ask you this: Did you really give it an honest trial? Did you put it to the test for at least 21 days in a row and give it 100% with positive expectancy? If not, then you're denying yourself the chance of achieving everything you've ever dreamed of. Don't let the simplicity of the affirmation technique fool you. Be open minded and don't pre-judge it.

Affirmations are more powerful than you can imagine, but they can't work when you just "try" them once or twice. They won't work even if you do them for a few days. They won't work if you say them and then cancel them out with negative affirmations. They work when you continue to repeat them with faith, emotion and belief over and over again so many times that they completely replace your old, negative, internal dialogue.

The ultimate purpose of using affirmations is to help you permanently change the "tape" that runs over and over in your mind every day. When you reach the point where your affirmations become your new habitual way of thinking and speaking, the results will astound you and what you've been imagining will start to materialize in your life.

10. Read your goals with faith.

William James, the father of American psychology, wrote, "The subconscious will bring into reality any picture held continually in your mind and backed by *faith*." Napoleon Hill, author of *Think and Grow Rich* and *The Law of Success*, said, "All thoughts which have been *emotionalized* and mixed with *faith* begin immediately to translate themselves into their physical

equivalent.” Faith, which is simply an unshakeable belief, is yet another way to plant your desires in your subconscious mind.

Faith is when you believe in what you can't see. Faith is when you know that eventually you will reach your goal, even though you look in the mirror and see that little or nothing has changed yet. The opposite of faith is doubt. Shakespeare said, “Our doubts are our traitors, and make us lose the good we oft might win, by fearing to attempt.” The poet William Blake said, “If the sun and moon would ever doubt, they would surely go out.” You must practice believing in yourself, or “banishing the doubt” as inspirational author Wayne Dyer calls it.

How do you cultivate this attribute of faith? Act *as if*. Read affirmation statements written in the present tense as if they were already achieved. See mental pictures of yourself as if you had already achieved your goal. When you look in the mirror every day, see what you want to become, not what is presently there. Behave as if you were already there. Speak as if you've already arrived. “Act as though I am and I will be,” says the ancient proverb.

To quote personal development expert Denis Waitley again, “Every captain knows his next port of call, and even though he cannot see his actual destination for fully ninety-nine percent of his voyage, he knows what it is, where it is and that he will surely reach it if he keeps doing certain things in certain ways every day.” That's the essence of faith – continuing to take action toward your destination even when you can't see it yet.

Read your goal lists and take action with faith! Believe it's going to happen, no matter what is actually happening at the moment. If you read your goals while at the same time doubting that you can achieve them, you're canceling your affirmations before they even have a chance to take root.

11. As you read your affirmations, mentally visualize them as already achieved.

Visualization refers to making mental pictures or movies – it's thinking without words. The brain thinks in pictures. If I ask you to think about your car, you probably don't see the letters C-A-R spelled out in your mind, you instantly get a picture of your car in your mind. Because your brain thinks in images, adding a big, bright, focused mental movie or picture of what you want will help you program your subconscious mind more rapidly and more deeply than if you just read your goals.

In *Psycho Cybernetics* Dr. Maltz wrote, “Experimental and clinical psychologists have proven beyond a shadow of a doubt that the human nervous system cannot tell the difference between an actual experience and one imagined vividly and in detail.” As with affirmations, visualization is

most effective when your body is in a relaxed (alpha brainwave) state, because that's when your subconscious mind is accessed most easily.

In his book *Peak Performance: Mental Training Techniques of the World's Greatest Athletes*, Charles Garfield wrote, "Without a doubt, the most dramatic contribution to the advancement of goal-setting skills in recent years has been the Soviet's introduction of visualization. During mental rehearsal, athletes create mental images of the exact movements they want to emulate in their sport. Use of this skill substantially increases the effectiveness of goal setting, which up until then had been little more than a dull listing procedure."

Garfield went on to talk about a startling experiment conducted by Soviet sports scientists. The study examined the effect of mental training, including visualization, on four groups of world-class athletes just prior to the 1980 Lake Placid Olympics. The groups were divided as follows:

Group 1 – 100% physical training

Group 2 – 75% physical training, 25% mental training

Group 3 – 50% physical training, 50% mental training

Group 4 – 25% physical training, 75% mental training

The researchers found that Group 4 – the group with the most mental training – had shown significantly greater improvement than Group 3. Group 3 showed more improvement than Group 2 and group 2 showed more improvement than Group 1!

In *Psycho-Cybernetics*, Dr. Maltz shared a similar account of an experiment about the effects of mental practice on improving basketball free throws. The study, published in *Research Quarterly*, divided the subjects into three groups. Each group was tested for free-throw accuracy once at the beginning of the experiment and again at its conclusion.

Group one physically practiced free-throws for 20 days. Group two performed no practice at all. Group three spent 20 minutes a day getting into a deeply relaxed state and visualizing themselves shooting free-throws. When they missed, they would visualize themselves correcting their aim accordingly.

The results were remarkable: The first group, which practiced 20 minutes a day, improved in scoring 24%. The second group, which had no practice, showed no improvement. The third group, which practiced only in their minds, improved their scoring 23%! Amazingly, mental practice produced results almost identical to physical practice.

What does this research on athletes have to do with losing body fat? Everything! Remember that the subconscious is the part of the mind that is responsible for automatic behavior (also known as *habits*). To lose body fat, there are certain positive action habits you must develop every day. By visualizing your fat loss or fitness goal as already achieved, you are giving your subconscious mind instructions that will cause you to begin acting in a way consistent with reaching your goal. You'll go into automatic pilot mode. There will be less struggle and willpower involved.

When you're in a situation that used to tempt you, you'll suddenly notice you're no longer tempted. If you used to dread going to the gym, you'll start looking forward to it. If the idea of eating healthy, natural foods used to seem unpleasant, you'll actually begin to enjoy it. If you used to crave certain junk foods, the cravings will mysteriously disappear. Everything will seem to get easier and your workouts will become better than ever. The end result of making "mental motion pictures" is that you will get results more quickly than you ever have before.

All great athletes and peak performers use visualization. Jack Nicklaus said he never hit a golf shot, not even in practice, without first having *a very sharp, in-focus* picture of it in his head. Tennis superstar Andre Agassi once told an interviewer that he'd won Wimbledon at least ten thousand times. When asked what he meant, Agassi replied, "Since I was five years old I saw it over and over and over again in my mind. When I walked on the court that day, it was my exact vision. I felt like I was stepping into the role I was made for, and I just demolished them!"

Legendary basketball Hall of Famer Bill Russell wrote about his use of mental imagery in great detail: "I was sitting there with my eyes closed, watching plays in my head. It was effortless; the movies I saw in my head seemed to have their own projector, and whenever I closed my eyes, it would run."

Bodybuilders and physique athletes use visualization in many ways: They often see pictures of their bodies the way they want them to look once they've reached their ultimate goal. Arnold Schwarzenegger visualized his biceps as mountains: "When I am doing barbell curls, I am visualizing my biceps as mountains – not just big, but huge!"

As he was dieting down for competition, former pro bodybuilder Lee Labrada visualized the skin on his abs getting tighter and thinner like cellophane wrap clinging to the abdominal muscles.

Three-time Mr. Olympia Frank Zane said that he mentally saw himself winning the Mr. Olympia *at least one million times* before it actually happened. Former Ms. Olympia Rachel McLish said, "I visualize the blood surging through my muscles with every repetition and every set I do. When I pose, I've got a mental picture of how I want to look. When you have that in your brain, the physical body just seems to respond."

Another way you can use creative visualization is to picture yourself taking the daily action steps necessary for you to achieve a goal. Researchers call this process visualization. You can see yourself getting up early in the morning, preparing healthy meals in advance for the whole day, choosing healthy foods in restaurants and confidently saying no to temptations. You can also use visualization to mentally rehearse your workouts, seeing yourself training with killer intensity, breaking new records in the gym, performing exercises with perfect technique and enthusiastically doing your cardio while the fat melts away.

Your visualization sessions could be as brief as 5-10 minutes, or you can spend more time if you wish, but make it a scheduled daily discipline, preferably twice a day. You can use visualization any time, even between sets in the gym, but two of the best times are early in the morning and at night before you go to sleep. When you fall asleep thinking about your goals as already achieved, your subconscious continues to work on how to achieve them while you're sleeping, and then adjusts your actions during the next day to move you closer to your goals.

What if you're not good at visualizing? What if you can't see vivid "Technicolor pictures" in your mind? Don't worry about it – everyone creates mental images in their own unique way. Some people see clear vivid pictures, while others get only impressions. You'll get results either way and you'll get better with practice. It also helps to have a well-written and vivid description of your goal because words can automatically make pictures pop up into your mind.

Another great technique to improve your ability to visualize your perfect body is to flip through fitness magazines and cut out pictures of people with the bodies you'd like to have. Look at these pictures daily as you read your affirmations and visualize yourself with the same body.

To take it a step further, cut out a picture of your head and paste it onto the picture of someone else who has the body you want. If you know how to use photo editing software like Adobe Photoshop, you could have a lot of fun with these "visualization photos." It might sound silly, but it's a remarkably effective technique for reprogramming your self-image.

Some real goals and affirmations

I've given you a lot to think about, so to help jump-start your imagination, I'd like to give you some ideas for how to write your goals and affirmations list. What follows is a composite list of some real goals from real people – both men and women - who have successfully completed my personal coaching programs. Use their words to generate some ideas for a list of your own.

Women:

I am so happy and thankful now that I have 13% body fat!

I am losing body fat and reaching my goal weight of 110 pounds and my goal body fat of 14% by June 1st.

I am fitting into my Gap jeans, size 4, by early November and looking so good in them when I wear them to work that I leave all the guys' jaws on the floor.

I am becoming a fitness magazine success story. When my success story is published, one of the star fitness photographers is calling me for a photo shoot and including me in the next swimsuit edition.

I eat natural, unprocessed foods, the way they appear in nature, as often as I possibly can.

I fit perfectly into the slinky black suit I bought this summer, and I am wearing it to work.

My spaghetti-strap flowered summer dress from last summer fits me perfectly and I am wearing it during my winter vacation in the Caribbean.

I am learning enough about my body, diet and exercise that I am easily staying within 2-3 pounds of my *optimal* weight for the rest of my life.

I am celebrating the New Year with clearly visible abs.

I wake up every morning at 6:00 to fit in my first meal and cardio before 7 - yes, I am a morning person!

I eat 5 small, but satisfying meals a day with proper ratios of lean protein, natural carbs, and healthy fats always on time at 3-4 hour intervals.

I stay well-hydrated and purify my body by drinking a gallon of water every day.

I constantly improve my body and optimize my genetic potential.

I'm grateful and proud of how good I look today.

I deserve to be healthy and super-fit.

I help those close to me choose healthier habits by leading through example and being a reliable source of health and nutrition information.

I am developing clean eating and consistent exercise habits that are so ingrained into my lifestyle that they stay with me for the rest of my life.

Men:

I am so happy and thankful now that my body fat is in the single digits. I now have 9% body fat and I look great!

I am reaching the most aggressive weight and body fat goal possible by the program's end (217 pounds and 19.3% respectively) by January 1st.

I can see all of my toes when I look down.

By January 1st, I fit comfortably into size 32-inch pants without having to inhale.

I am surprising (and shocking) my friends and family whom I haven't seen in a while by the way I look at Christmas.

I am keeping up these lifestyle changes when the program is over.

I am reaching my ideal weight and body fat composition by April so I can show off my new body in the summertime.

I carry my goal card with me at all times and read it as often as possible (at least 3 times a day).

I am reaching my goal of 15% body fat and 199 pounds by December 31st. I know this is a little fast but it is my dream for New Year's Eve – I can do it!

By my 35th birthday on June 15th, I am so happy that I have lost 24 pounds of fat and my body fat has dropped by 6%! I look awesome, I feel great, and I'm ready for some summer fun.

I am buying all new clothes to show off my new, lean body: killer suits, nice shoes, nice casual stuff.

I look so good by Christmastime that my wife can't stop touching and holding me.

I am now leaner than I was 30 minutes ago (*after finishing every cardio workout*).

Heads are turning when I take my shirt off.

I look good with my shirt off.

I am taking on being a bodybuilder and learning about bodybuilding (for tone and definition, not massive bulk).

I am continuing the program for another 3 months and burning another 24 pounds of fat.

I design my weekends and vacations to include healthy activities.

I eat five, moderately sized meals every day, each with a serving of lean protein and a complex, all-natural carbohydrate, and I prepare my food in advance every morning.

What you should do every time you reach a goal

Every time you achieve a major goal you should do three things:

- 1. Celebrate and/or reward yourself.** Great managers, great parents and great animal trainers all have one thing in common: They know how to continually get their “people” (employees, children or animals, respectively), to repeat the behaviors they desire. They do it by *rewarding* the behaviors they want repeated. You should do the same thing – reinforce your success by rewarding yourself. Did you have a great week of nutrition and training? If so, go out and splurge! Have a “free meal.” Eat some pizza. Treat yourself. If food as a reward doesn’t work well for you, then pamper yourself some other way. Take a vacation. Get a massage. Go shopping. Buy yourself something you’ve always wanted. New clothes are a great reward (you may be needing smaller sizes soon anyway!). And don’t feel guilty when you really deserve it!
- 2. Keep a list of your achieved goals.** It’s been said that success breeds more success. That’s why you should start a collection of all your successes. You will reach many, many small goals on your way to your ultimate goal. Write all of them down on an achieved goal list. Any time you feel your motivation or enthusiasm flagging, go back and read your list of past successes. This is a surefire way to lift your spirits when you’re feeling discouraged. Even after a few short months, you’ll amaze yourself at how big your list will become and how easily you can get motivated by reflecting on and re-associating with your past successes.
- 3. Set new goals continually.** Goal-setting never stops – it’s an ongoing process, not an event. In truth, there’s never an “ultimate” goal because if there were, and you reached it, what then? When the day arrives that you no longer have any goals, your life ceases to have meaning. In his book, *Unleash The Power Within*, Anthony Robbins wrote: “The only true security in life comes from knowing that every single day you are improving yourself in some way – that you are increasing the caliber of who you are. I don’t ever worry about *maintaining* the quality of my life, because every day I work on *improving* it.”

Why you should put this book down and set your goals right now

To conclude this chapter, I'd like to tell you why you should put this book down this very minute and write out your goals - NOW.

Years ago, I read a book by peak performance coach Anthony Robbins, called *Unlimited Power*. I was so impressed that I purchased Robbins' tape series called *Personal Power* after seeing him on TV. In those tapes, Robbins discussed the importance of setting goals.

As I listened to the audio on goal-setting, Robbins urged me to "stop the tape now and do the goal-setting exercise." There was a brief pause and then Tony came back on and repeated his instructions. He said in a teasing voice, "If you just kept listening and you didn't stop the tape and write down your goals, stop the tape and do it now." Guess what I did? I just kept listening. I said to myself, "I know what my goals are, I don't need to do any 'corny' goal-setting exercise," so I just kept listening to the rest of the tape (dumb, dumb, dumb!).

Eight years later, I had achieved some moderate success in several areas of my life, including bodybuilding, but I was frustrated because I hadn't reached my biggest, most important goals and I couldn't figure out why. Then I thought about the Tony Robbins tape. I remembered that even though I definitely knew what I wanted, I never took the time to write it down and read it every day.

Frustrated with my mediocre results, I conceded and went back to the goal-setting exercise I had blown off eight years earlier. Sure enough, within 12 months I had won two overall bodybuilding titles and within a few short years after committing my goals to writing and reading my goal list every day, I had accomplished EVERY SINGLE ONE OF THEM! It was amazing – it was almost spooky! Then I made a new list, with bigger, better goals that I am still working on to this day - and I know I will achieve them too.

Put this book down **RIGHT NOW**, make your goal list and write out your three-month goal on a small card to carry around with you. Don't worry if it's not perfect, just start writing. You can always go back to it later and edit. Do it now!

Chapter 2: Why 95% of Diets Fail – And The 8 Most Powerful Strategies to Permanently Lose Fat Without Diets or Deprivation

"Cutting calories backfires. The more you cut, the more your body fights to hold onto its fat stores as reducing calories signals the 'starvation response' where the body tries to 'survive' and hold onto its calorie reservoir known as fat."

—Chris Aceto, author of *Everything You Need to Know About Fat Loss*

"It's well established from studies of human starvation and semi starvation that weight loss is accompanied by a decrease in basal metabolic rate. The survival value of such an energy-sparing regulatory process during food scarcity is obvious."

—Abdul Dullo, PhD, Obesity researcher, University of Fribourg, Switzerland

Diets never work

In this chapter, you'll learn the real reasons why 19 out of 20 people fail to lose weight and keep it off. You'll see why most conventional diets are fundamentally flawed and doomed before they're even started. You'll also discover eight simple strategies that guarantee you'll be among the five percent who succeed. All it takes is a basic understanding of hormones, metabolism and your body's remarkable protective mechanism known as the "starvation response."

Let's begin by defining the word "diet." A diet is any *severe* restriction of food or calories that's *temporary*. Most conventional diet programs call for extremely low calories: 800–1200 or less for women and 1500–1800 or less for men. When you restrict calories to this extreme, you will always lose weight, at least in the beginning.

However, there are two major problems with this approach: First, the weight loss from very low calorie dieting almost never lasts. According to research by the National Weight Control Registry, 95% of the people who lose weight on conventional diet programs will eventually regain it all and sometimes even more. Second, much of the weight you lose from very low calorie dieting is lean body mass, not fat.

If your only interest is *weight* loss, and you don't care where the weight comes from or how long it stays off, then you could say that "All diets work." If your goal is to lose *fat* permanently without losing muscle – as it should be – it's closer to the truth to say, "Diets never work."

There are more diet programs and weight loss products available today than ever before and yet there is also more obesity than ever before. According to the National Institute of Health, there are more than 133 million overweight people in the United States - that's 64% of the adult population! Statistics from the Center for Disease Control show that obesity is still rising at an

alarming rate: The number of people in the United States who were clinically obese increased from one in eight in 1991 to nearly one in five in 1999. Today, 63 million, or one in three U.S. adults are clinically obese (at least 30% over their ideal body weight), which means they are at risk for over 30 health problems associated with excess body fat. Diet ads may proclaim that the holy grail of weight loss has been found, but the statistics don't lie: The way most people are dieting for weight loss doesn't work.

There's a valid scientific reason why most diets fail. Most people make the classic mistake of trying to starve the fat with restrictive diets. However, because the human body has a complex, infallible and redundant series of defense mechanisms to protect you from starvation and help you maintain a fairly stable weight, it's virtually impossible to permanently lose fat with starvation dieting. As soon as your body senses a severe food shortage, these feedback mechanisms kick in. The human body is simply too smart for very low calorie diets to work.

Why the calorie math doesn't always add up

As the law of energy balance dictates, if you eat more calories than you burn, you will gain weight. If you eat fewer calories than you burn, you will lose weight. There are 3500 calories in a pound of stored body fat. So if you cut out 1000 calories per day from your maintenance level, that will add up to a 7000-calorie deficit in one week and – on paper – should produce a weight loss of two pounds per week. Simple mathematics, right? Well, not exactly.

Rob Faigin, writing in the book *Natural Hormonal Enhancement*, makes a humorous but true observation about calorie balance and weight loss. He says, "If there existed an airtight mathematical relationship between caloric intake and weight loss, cutting daily caloric intake from 3000 to 1000 would result in a 60,000 calorie per month deficit – and would result in a 200 pound weight loss after a year. What if the person began the diet weighing 200 pounds, would he disappear?"

When a calorie deficit is first introduced, weight loss occurs consistently, just as the numbers on paper predict, but it doesn't take long before weight loss slows, and then eventually stops completely. Why does this happen? Why is it that you don't lose 50 pounds in 25 weeks or 100 pounds in 50 weeks with a deficit 1000 calories below your initial daily maintenance level? The explanation is simple: The math equation changes. Your deficit shrinks!

Energy balance is dynamic. The number of calories you require today may not be the same six months or a year from now. When your body mass decreases, you need fewer calories to support your smaller body, but most people fail to adjust their calorie intake in real time to match their changing energy needs. Furthermore, humans possess a highly sensitive weight-regulating mechanism that recognizes when there's a food shortage and decreases the energy gap to prolong survival time.

Understanding the starvation response

You can survive for months without food. There are case studies of lean individuals on hunger strikes surviving up to two months without food and obese individuals surviving 200 days or longer without eating. You've probably heard stories about people getting lost in the mountains or wilderness for weeks with no food, or being confined in a prisoner of war camp for years with only tiny amounts of food. Two things make surviving so long under starvation and semi-starvation conditions possible:

1. Your body's ability to easily and efficiently store energy as fat when food is plentiful, as insurance against future shortages.
2. Your body's ability to decrease energy expenditure and increase feeding behaviors when body fat stores are running low and food is scarce.

Generation after generation, humans have been exposed to adverse environmental conditions like droughts, natural disasters and food shortages. There were no supermarkets 10,000 years ago. If people wanted to eat, they had to forage for food, grow it or kill it (which required a lot of physical activity, something that modern humans don't get). It's likely that at times, ancient humans didn't know when the next meal was coming and may have eaten substantial meals only once or twice per week. Or, they may have feasted for a season and eaten meagerly the next.

Your body can't tell the difference between dieting and starvation

During periods of prolonged starvation, the body slowly begins to feed off itself, burning fat stores, then muscle, and eventually even vital organs for energy. If you continued to burn calories at your normal rate as food intake fell below normal, your reserves of stored energy would be exhausted quickly and you would die very soon after your food supply was cut off. The starvation response keeps you alive longer. This wonderful feature of human evolution was a blessing to our ancestors during times of famine. But famine rarely occurs in modern, affluent societies.

Today, this same life-preserving mechanism can work against you when you're trying to lose fat because your body can't tell the difference between dieting and starvation. When your body senses calorie deprivation, these survival responses are triggered even though a diet is not a life or death situation. Your body says to itself, "It looks like this is all the food we're going to get for a while, so we'd better stop burning so many calories and start conserving our energy."

A real famine or a very low calorie weight loss diet... either way, a severe and prolonged calorie shortage will always send your body into starvation mode. The consequences are hard-wired into your genes and therefore unavoidable. The only way to avoid these negative consequences is to avoid severe calorie shortages!

10 reasons you should avoid prolonged very low calorie diets

The consequences of very low calorie dieting are metabolic, hormonal, and psychological in nature, and include:

- Increased appetite
- Decreased metabolism
- Loss of lean tissue
- Decreased non-exercise activity thermogenesis
- Reduced thyroid function
- Increased chance of weight regain
- Decreased energy and work capacity
- Higher cortisol
- Lower testosterone
- Lower levels of the hormone leptin

Let's take a quick look at each.

1. Very low calorie diets increase appetite and cravings.

One of the first things you experience during a calorie shortage is increased hunger. This general desire for food is a completely normal sensation when you've gone for a stretch of time without eating. In fact, a small amount of hunger should be expected and accepted while you're in a calorie deficit. With highly restrictive and prolonged dieting, however, the hunger and cravings can be so strong that you become ravenous. It's virtually impossible to stay on a diet when you're voraciously hungry and all you can think about is food. Few people have that much willpower.

This increase in hunger can have biological or psychological origins. Researchers have discovered more than a dozen hormones, many of them released in the stomach and gastrointestinal tract, that interact with the central nervous system and influence hunger or satiety (the feeling of being full). Cravings for specific foods can have biological origins. For example, they can be associated with the release of dopamine, a neurotransmitter involved with the pleasure and reward system of the brain.

However, cravings are equally likely to be psychological and environmental in nature. You tend to want what you can't have, so when a diet is low in calories, when it gives you numerous rules about what you can't eat, and when you're surrounded by temptations and eating cues, the perceived deprivation and "missing of favorite foods" leads to cravings and binges.

2. Very low calorie diets slow down your metabolic rate.

The metabolic slowdown that occurs with calorie restriction is well documented. Studies have shown that after 12 weeks of very low calorie dieting (800 calories per day), resting energy expenditure can decrease by 20-25%. With six months at semi-starvation calorie levels (a 50% deficit below maintenance needs) resting metabolic rate can be depressed by as much as 40% below starting levels. That's the equivalent of having your daily energy expenditure drop from 2900 calories per day to only 1740 calories per day.

Most of this reduction in metabolic rate is caused by reduced body mass. Smaller people need fewer calories, so as you lose weight, your calorie needs decrease. However, studies show that there's also an adaptive component of this metabolic decline which can account for a 10% drop in metabolism even after adjusting for changes in body weight. Researchers from Laval University in Quebec, Canada, recently discovered that the metabolic slowdown from very low calorie diets could be even larger. In one study, they measured a decrease in metabolism of 30.9% and concluded that this could be a cause of resistance to further lose body fat.

This drop in metabolism, also known as “adaptive thermogenesis,” is not enough to cause your weight loss to stop completely. However, it's part of the starvation response which helps explain why weight loss often takes longer than predicted on paper, why progress usually slows down over time and why it's so hard for most people to lose the last 10-15 pounds.

3. Very low calorie diets increase the loss of lean tissue.

One of the most harmful effects of very low calorie dieting is the loss of muscle tissue. Once the starvation alarm is triggered, your body begins looking for ways to conserve energy. Muscle is metabolically active tissue, so getting rid of it is one way your body can decrease energy expenditure. This process is known as gluconeogenesis – where muscles (amino acids) are converted into glucose. This includes skeletal muscles, internal organs - even your heart muscle!

Very low calorie diets without resistance training can cause 30%–50% of the weight loss to come from lean tissue. Studies on semi-starvation have recorded muscle losses as high as 70%. The muscle loss is greatest if dietary protein intake is inadequate. Although lean people are more likely to lose muscle than overweight people, it can happen to anyone, and the greater the calorie deficit, the greater the risk.

The initial large weight loss you see on most diets is deceiving, giving only the illusion of success. Low carbohydrate diets in particular cause large losses in water weight. Between the loss of water, glycogen and muscle, as much as 75% of the weight you lose on such plans could

be fat-free tissue! Even with weight training and adequate protein, if a diet is too severe, some of the weight loss can still be lean tissue. Losing muscle undermines your fat loss efforts because lean body mass makes up such a major component of your resting metabolic rate.

4. Very low calorie diets decrease non-exercise activity thermogenesis.

Non-exercise activity thermogenesis, also known as NEAT, is all of your physical activity throughout the day, excluding formal exercise. This includes all the calories you burn from casual walking, shopping, yardwork, housework, standing, pacing and even little things like talking, chewing, changing posture and fidgeting. Most of these activities don't burn that many calories when you look at them individually, but when you add them all up over time, the calorie expenditure from NEAT can be significant.

Research by Dr. James Levine of the Mayo Clinic in Rochester, Minnesota, has revealed that when you restrict your calories, your level of NEAT drops spontaneously. In other words, when you're on a diet and cutting calories, you get sluggish and move your body a lot less. Many people are fully aware that diets make them lethargic. They often don't feel like training, and if they do make it to the gym, they work out with less gusto. But this decrease in NEAT can be an even bigger problem if you don't realize it's happening. Unless you intentionally counter this tendency by keeping yourself active, your weight loss will slow down automatically as you continue with the caloric restriction.

5. Very low calorie diets decrease levels of thyroid hormones

Thyroid hormones have a direct effect on your resting metabolic rate, which is the number of calories you burn at rest. When your body senses a severe reduction in calories, there is a corresponding reduction in the thyroid hormone triiodothyronine (T3) and a reduction in the transport of thyroxine (T4) and T3 into the tissues. Many studies have reported significant drops in thyroid levels with long-term low calorie dieting and some researchers have measured drops in thyroid as quickly as one week after starting a very low calorie diet.

It's well known that when your body weight drops, your metabolic rate drops along with it. However, a study published in the *Journal of Clinical Endocrinology and Metabolism* found that with caloric restriction, a drop in thyroid occurs even when your body weight hasn't changed yet. This means that diets alone can decrease your metabolism, if they are too restrictive.

6. Very low calorie diets increase the chance of rebound weight gain and weight cycling.

Almost everyone will lose weight initially on a very low calorie diet, but it doesn't take long before your body catches on and starts conserving energy. When you consider the adaptive

decrease in metabolism, along with reduced energy needs due to a lower body mass and an increased appetite, you can understand why weight loss slows down and eventually plateaus. These are also the same reasons why most dieters relapse.

When weight loss starts to slow down and the hunger pangs start to intensify, most people throw in the towel. To make matters worse, diets often end with a binge. After a period of very low calorie dieting, your body has become primed to gain back weight easily. Obesity researchers call it “post starvation hyperphagia” and “body fat overshooting.” After weight relapse, what used to be a maintenance level is now a surplus, so when dieters return to their previous level of calorie intake or stop exercising, the weight creeps back on. Sometimes they end up even fatter than when they started.

Eventually, they get fed up with their body again and embark on another round of dieting, usually pursuing the newest or most popular fad diet of the year. This up and down pattern of weight loss and re-gain is known as weight cycling or yo-yo dieting and it often continues for years or even for an entire lifetime. Not only is this unhealthy, but with each repeated bout of dieting, your metabolism becomes less and less efficient and you can actually become progressively fatter while eating less food than before.

7. Very low calorie diets decrease your energy and work capacity.

People vary in their capacity to train under less than optimal conditions. But in general, low calorie diets leave you tired, weak and unable to sustain intense workouts or high levels of activity. Dr. Lawrence Lamb, author of *The Weighting Game: The Truth About Weight Control* points out that “The first sign of under nutrition is the loss of energy and the inability to sustain prolonged physical work. There is a direct relationship between calories consumed and the physical work a person can do.”

If you have insufficient fuel coming in, you’re going to feel lousy, your workouts will suffer and you’ll compromise your results. The ability to train hard is important for maximizing your long term fat loss success. For athletes, it’s critical, because large calorie deficits can decrease performance.

8. Very low calorie diets increase the stress hormone cortisol.

Cortisol is a catabolic (muscle-wasting) hormone produced by your body’s adrenal glands in response to various types of physical and mental stress, including the stress of starvation. Research has shown that cortisol levels are inversely related to calorie levels. With starvation diets or prolonged fasting, cortisol increases. Research has also shown that when you’re

consuming very few calories, the time that cortisol stays in the blood is increased, contributing to even greater losses of lean body mass.

Taking the highly advertised cortisol-suppressing pills does not fix this problem because if you take pills, you're only treating an effect. If the causes of high cortisol remain in place (stress, sleep deprivation, overtraining, starvation dieting and so on), the problem will persist.

9. Very low calorie diets decrease testosterone.

Testosterone is another hormone that's affected when you cut your calories too severely. This makes perfect sense from an evolutionary point of view because if you can't even feed yourself, you're in no condition to bear and feed offspring. Any substantial sustained decrease in calories can cause a drop in testosterone, which may contribute to losses in lean body mass.

According to research from the University of Virginia, testosterone can drop with as little as two days of fasting. Five days of fasting can decrease testosterone by as much as 30–50%. Studies on wrestlers have shown that rapid weight loss can reduce testosterone levels, independent of dehydration (which is also known to reduce male hormone levels).

In a study published in the *Journal of Applied Physiology*, Army rangers who were fed only 1,000 calories a day and placed under conditions of stress, sustained workload and inadequate sleep experienced a drop in testosterone that approached castration levels. Sleep deprivation, stress and a low calorie diet are a really bad combination.

Most research shows that a conservative deficit of 15–20% below maintenance level will not adversely affect testosterone levels. It appears that the larger the calorie deficit, especially when you start to get very lean, the greater the reduction in reproductive function and hormones. Fortunately, the drop in testosterone induced by very low calorie diets is transient and levels return to normal when calories are increased again.

10. Very low calorie diets decrease the anti-starvation hormone leptin.

Leptin is a hormone produced primarily in your fat cells. Leptin sends a signal to the hypothalamus in your brain saying, "Everything is okay in the food supply and body fat storage department." If food intake or body fat stores go down, your leptin levels go down. When leptin levels drop, it sends a signal to your brain that there's trouble brewing, and starvation might be impending. In fact, leptin is often called the "anti-starvation hormone" and may be the hormone that triggers the entire cascade of starvation responses.

In *The Handbook of Obesity Treatment*, two of the world's leading weight loss researchers, Thomas Wadden and Albert Stunkard wrote, "The starvation response – which is an increase in food-seeking behavior – is most likely mediated by the decrease in leptin associated with caloric deprivation." This explains why strategies that help maintain normal levels of leptin (such as the carb cycling method you'll learn later on), will help with your fat burning endeavors.

Why dieting can actually make you fatter

Looking at the big picture, you can now see the great irony in the weight loss world today: Dieting can actually make you fatter. Because the best-selling and most popular diets today almost always promise rapid weight loss, recommend very low calories, focus on short-term quick fixes, and fail to emphasize proper training, they are actually worsening or even causing the very problem they purport to cure.

Let's take a look at how these physiological and psychological responses to low calories play out in the real world results of a typical dieter with a goal of losing 20 pounds (9.1 kg).

Before the diet

18% body fat
200 pounds (90.9 kg) body weight
36 pounds (16.3 kg) fat
164 pounds (74.5 kg) lean body mass

Like most people, our hapless dieter assumes that the best way to lose the body fat is to starve, so he goes on a 1500 calorie per day diet, which is semi-starvation for an active man of that size. In the first week he loses 5 pounds (2.3 kg) and is very happy with himself. The second week he loses 4 pounds (1.8 kg). In weeks three through six he loses 3 pounds per week for a grand total of 21 pounds (9.5 kg) lost.

Our dieter now weighs 179 pounds (81.3 kg) and he lost weight steadily without hitting a plateau (although the weight loss did slow down). Judging by the scale alone, he has succeeded in reaching his goal. On closer examination, we find that he hasn't been so successful after all.

After the diet

14.8% body fat
179 pounds (81.3 kg)
26.5 pounds (12 kg) fat
152.5 pounds (69.3 kg) lean body mass
21 pounds (9.5 kg) weight loss
9.5 pounds (4.3 kg) fat loss
11.5 pounds (5.2 kg) lean body mass loss

By looking at his results in terms of body composition instead of scale weight, it becomes clear that he has failed. Fifty-five percent of his weight loss came from lean body mass. The drop in lean body mass has decreased his basal metabolic rate, so he is now burning fewer calories each day than when he started. This has set him up for a relapse.

Now that the diet is over, he returns to the way he used to eat before. Few people have the desire or willpower to stay on a calorie- or food-restricted diet for long, so almost everyone falls off the wagon or reverts to old habits sooner or later. After a long period of low calories, his body “tricks him” into binge eating by triggering severe cravings and hunger.

Even if he doesn't binge, and he simply goes back to normal eating again, his body isn't burning calories as efficiently as before. Therefore, the number of calories that used to maintain his weight now causes him to gain weight. As the weeks pass, the weight gradually creeps back on until he finally gains back all the fat he lost.

6 weeks after the diet ends

20.5% body fat

200 pounds (90.9 kg) body weight

41.1 pounds (18.7 kg) fat

158.9 pounds (72.2 kg) lean body mass

Now he's right back at the same weight body weight where he started, with one difference: He has less muscle, more fat, and a slower metabolism than when he began. He has “damaged” his metabolism and it will now be harder than ever to lose weight.

The same scenario happens to women as well, the only differences are that women have higher body fat levels, lower total body mass and lower calorie requirements.

8 Strategies to Stay Out of Starvation Mode and Lose Fat Forever Without Dieting or Deprivation

If you want to avoid the frustrating yo-yo cycle of weight loss and weight regain, then you must give up the entire concept of dieting for weight loss. The odds of you losing fat permanently by using restrictive low-calorie diets are physiologically, psychologically and environmentally stacked against you.

So let's look at eight strategies you can use to stay out of starvation mode, burn the fat and keep it off without dieting. If you've used starvation diets in the past and you feel that you've caused

metabolic damage from past dieting mistakes, don't worry. These are the same guidelines that help you bring your metabolism back up to speed.

1. Maintain your muscle at all costs.

The famed investor Warren Buffet was well-known for saying that rule number one in making money is never lose money. He said rule number two was never forget rule number one. It's the same with making a successful body transformation. A simple strategy for successful fat loss is to keep the muscle you already have. .

Muscle is the fat-burning secret weapon of bodybuilders. Muscle is your metabolic furnace. The more muscle you have, the more calories you burn, even at rest. With more lean body mass, you'll also burn more calories during exercise. If two people jog side by side on treadmills, one of them with 180 pounds of lean body mass and the other with 150 pounds of lean body mass, the person with 180 pounds of lean body mass will burn more calories from the exact same workout.

The major nutritional keys to maintaining your muscle include avoiding starvation diets and ensuring an adequate protein intake. Weight training is also a huge factor in keeping your muscle while dieting for fat loss and you'll learn much more about it in Chapter 17.

2. Adopt the “habit” mindset instead of the “diet” mindset.

Burning fat and keeping it off requires a change in your mental attitude toward dieting. Instead of going on short term diets, you must adopt the mindset of changing habits and keeping the changes for life. A habit is a behavior pattern you execute automatically without much thought, effort or willpower involved. Once a habit - good or bad - is firmly established, it takes enormous strength to break it. It's like trying to swim upstream against the current.

The entire concept of dieting for fat loss is flawed. When you say you're “going on a diet,” the underlying implication is that it's a temporary change and at some point you're going off the diet. With this type of attitude, you're setting yourself up for failure right from the start. Permanent fat loss can't be achieved by going on and off diets, especially if you're always hopping from one diet trend to the next. It can only be achieved by adopting new exercise and nutrition habits that you can maintain for the rest of your life.

Depending on your goal, you may need to make your nutrition more or less restrictive at certain times, but you always must maintain a *baseline* of healthy eating habits that never change. Usually, you'll eat the same foods all year round. When you want to lose body fat, all you need to do is simply eat a little bit less of those same foods and exercise more.

Good nutrition habits are not easy to form, but once you've formed them, they're just as hard to break as the bad ones. Motivational writer Orison Swett Marden put it this way: "The beginning of a habit is like an invisible thread, but every time we repeat the act we strengthen the strand, add to it another filament, until it becomes a great cable and binds us irrevocably."

Nature abhors a vacuum, so if you simply remove a bad habit, it will leave a void begging to be filled by another bad habit. An old proverb says that a negative habit can most easily be driven out by a positive habit, just as a nail can be driven out by another nail. The best way to get rid of undesirable habits such as poor nutrition or inactivity is to replace them with new ones, rather than trying to overcome them with sheer willpower.

Initially, there will be a period where starting the new habit will feel uncomfortable. Be patient – everything is difficult in the beginning. For a new behavior to become permanently entrenched into your nervous system, it could take months. However, the roots of nutrition and exercise habits can be formed in just 21 days. That's why it's so important to give 100% total effort and commitment for the first 21 days. Once those 21 days have gone by, you'll already be leaner and on your way to making your new habits as effortless and natural as brushing your teeth or taking a shower.

3. Start with a conservative calorie deficit.

To lose body fat, you must be in negative energy balance (a calorie deficit). However, most people cut calories too far too fast or go on crash diets that require induction phases or even total fasting. The body cannot be forced to lose fat faster than nature intended – you must coax it. Based on what you've learned about your body's weight regulating systems, you can see that the smartest, safest, and healthiest approach for permanent fat loss is to begin with a conservative deficit and then continue to reduce calories slowly and progressively if necessary, as your weekly results dictate.

There are 3500 calories in a pound of stored body fat, so in theory, a 500 calorie per day deficit will result in a loss of one pound per week. A 1000 calorie per day deficit would produce a two pound per week weight loss. Since one or two pounds of fat loss per week is usually the desired goal, the most commonly recommended guideline is to reduce your calories by 500 to 1000 below your maintenance level.

A more customized approach would be to set your calorie deficit as a percentage relative to your total daily calorie expenditure. For example, a conservative reduction of about 20% below your maintenance level is a recommended starting point for fat loss. For the female with a 2100 calories-per-day energy expenditure, a 20% deficit would be a 420-calorie reduction, which would make 1680 calories per day her optimal level for fat loss. For the man with a 2900

calories-per-day energy expenditure, a 20% deficit would be a 580 calorie reduction, which would make 2380 calories per day his optimal level for fat loss.

4. Use training to burn the fat rather than dieting to starve the fat.

To lose body fat, you must have a calorie deficit. This is an unbreakable law of thermodynamics and energy balance. However, there's more than one way to create a calorie deficit. One way is to decrease your calorie intake from food. The other is to increase the number of calories you burn through exercise. Unless you're physically incapable of exercising, the ideal method is a combination of the two.

Using exercise to create a significant part of your calorie deficit has major advantages over dieting alone. Ironically, most people do the opposite: They slash their food intake and exercise little or not at all. This invokes the starvation response and increases the risk of muscle loss. Paradoxical as it may seem, the most effective approach to long term fat loss while maintaining muscle is to *eat more and burn more*.

Why would anyone resort to starvation diets when they can burn the fat and keep the muscle more efficiently through exercise? Maybe they believe that working out and consuming more calories at the same time will “cancel out” each other. Maybe they shy away from the hard work involved in exercise. Maybe they believe that cardio will make them lose muscle. Quite to the contrary, cardio training – combined with weight training - enables you to create a larger calorie deficit and burn fat *without* losing muscle or slowing down your metabolism.

Here are some of the reasons why training (weight training and cardio training combined), is superior to dieting alone for losing body fat:

Training (burn more)	Dieting (eat less)
Raises your metabolic rate	Slows down your metabolic rate
Creates a caloric deficit without triggering the starvation response	Triggers the starvation response
Provides countless health benefits	May be harmful to your health
Builds and maintains lean body mass	Promotes loss of lean body mass
Increases fat-burning enzymes and hormones	Decreases fat-burning enzymes and hormones

5. Determine your minimal calorie requirements and don't drop below them.

One way to ensure that you lose fat, retain lean tissue and avoid the symptoms of starvation mode is to determine the minimum amount of calories you can eat without slowing your

metabolism. Then, use that as your “calorie floor” (the lowest safe level) and avoid dropping below that point.

Because nutrition must be individualized, it’s not possible to set one bottom figure that applies to everyone, but the American College of Sports Medicine (ACSM) has suggested some general guidelines. In their position statement on healthy and unhealthy weight loss programs, the ACSM recommends 1200 calories as the minimal daily calorie level for women and 1800 as the minimum for men. They also suggest a maximum deficit of 1000 calories below maintenance.

The 1000 calorie maximum deficit is good advice, but it’s only a guideline. People with low bodyweights or low activity levels will have relatively low daily calorie needs, so 1000 below maintenance could be too much to cut. In Chapter 6, you’ll learn more about your optimal calorie levels for burning fat and how low is too low for you.

6. Eat small meals at regular intervals and avoid skipping meals.

Optimal meal frequency can depend on many factors, including your goals, calorie needs, practical considerations and personal preference. For active individuals in hard training (as you will be on this program), eating 4–6 smaller meals per day is the ideal way to provide fuel to your body, feed your muscles and control your appetite. This is also the approach that bodybuilders, fitness models and other physique athletes have used with great success for decades.

A typical quick fix approach to weight loss is to skip meals, especially breakfast. What happens more often than not is that you’re starving by nighttime and not only make up for the missed breakfast calories, but overshoot your normal daily intake by bingeing at dinner and before bedtime. The better approach is to eat breakfast consistently every day and have a meal or snack approximately every three to four hours.

It’s also important to establish scheduled meal times and stick to them, as consistency fosters good long term habits. By eating smaller portions more frequently, you’ll be able to maintain high energy levels without feeling deprived. In fact, most people say they eat more on this program than they’ve ever eaten yet they get leaner than they’ve ever been before.

7. Don’t stay in a negative calorie balance too long.

The chances are good that you know at least one person who *always* seems to be on a diet. The odds are also good that while these habitual dieters may successfully lose weight in the beginning, they are usually among the 95% that gains it back. Then, discouraged with their failure, they quickly embark on the latest “diet of the month” and repeat the cycle.

When fat loss stops or begins to slow down after being in a substantial calorie deficit, most people panic and cut their calories even further. Sometimes dropping calories is the right decision and it breaks the plateau. In some cases, however, particularly when caloric intake is already very low and you've been on a diet for a long time, it digs you into an even deeper metabolic rut.

Although it seems counterintuitive, if you've been in a caloric deficit for many weeks, sometimes the best thing you can do is to *raise* your calories for a day or two to “reset” your metabolism before going back to the caloric deficit again. After months of chronic dieting, it may even be beneficial to take a full week or two of higher calorie (maintenance level) eating to get your metabolic fire burning again.

A temporary increase in calories when you've hit a plateau will spike your hormones and metabolism. It sends a signal to your body that you're no longer starving and that it's okay to keep burning calories at a normal rate. This practice of raising your caloric intake up and down is known by many names including “cycling” your calories or the “zig-zag” method (referring to an up and down rather than straight line calorie reduction pattern).

In general, the more aggressive you are with your calorie reductions, the longer you stay in a calorie deficit, and the lower your body fat becomes, the more important it is to take periodic diet breaks and higher calorie “re-feed” days. We'll take a closer look at cycling your calories and macronutrients in later chapters.

8. Set a goal to lose weight slowly at a rate of 1-2 pounds per week.

The best way to lose fat permanently *without muscle loss* is to be patient and lose weight slowly, with a focus on burning more, not just eating less. In the chapter on goal setting, I suggested that you set a goal to lose no more than two pounds per week. Let's take a closer look at the logic behind this recommendation.

In the ACSM's position statement on *Healthy and Unhealthy Weight Loss Programs*, they recommend losing weight at a maximum rate of two pounds per week. This two-pound figure has become almost universally accepted as the standard guideline for safe weight loss – and with good reason. You can certainly lose more than two pounds of *weight* per week, but you're not likely to lose much more than two pounds of *fat* per week.

Even at two pounds per week, it can be a challenge to lose 100% body fat with no loss of lean tissue. By losing the weight at a more modest rate, it's easier it is to maintain your lean muscle mass and keep the fat off. It's better to lose only two pounds of pure fat per week than it is to lose four pounds per week with two pounds from muscle and two pounds from fat.

Over the years I've been doing personal coaching and mentoring programs, I've kept progress charts for almost every client, meticulously documenting skinfolds, body fat, body weight, pounds of fat and lean body mass. I have hundreds of these charts in my files. Analyzing these real-life case studies reveals a common pattern: When you lose much more than two pounds per week, most people lose lean body mass along with the fat.

I've seen fat loss greater than two pounds a week on many occasions, but that's the exception rather than the rule, usually occurring when someone is exceptionally disciplined and hard-working or when someone has a lot of weight to lose. In the latter case, dropping one percent of your total body weight each week is a safe and realistic goal (for example, three pounds per week if you weigh 300 pounds.).

Bodybuilders and figure competitors provide a great example of the patient fat loss mindset. Usually these physique athletes set their goal to lose weight at a rate of only one to one and a half pounds per week. Losing only a single pound a week may seem like an excruciatingly slow process to most people, but this is one of the best-kept secrets of bodybuilders and fitness models. Why lose weight faster if a large portion of the additional weight loss is lean tissue and you increase the odds of regaining the weight?

During the first week on a new exercise and nutrition program, it's very common to lose four to five pounds or even more, but most of this initial loss is water weight. If you have a large amount of fat to lose, then losing three pounds a week is safe and acceptable goal during the early stages. However, as you get closer to your long-term goal, expect the weight loss to level off to one or two pounds per week and remember that when this weight comes from pure fat and not lean tissue, two pounds per week is excellent progress.

What should you do if you lose more than two pounds per week? It depends; everything is relative to the individual. If you're tracking your body composition, you'll know if the additional weight loss came from fat or lean tissue. If it all came from fat, you've done better than average! If it came from lean tissue, you need to rethink your strategy. For most people, losing more than two pounds per week means that they could actually eat more. This may be difficult to accept, but if you lose more than the recommended amount, you may be sacrificing lean tissue to achieve that greater drop in weight.

It can be motivating to see a large weight loss during the initial weeks. But don't let the temporary ego boost from a large drop in scale weight sabotage your efforts in the long run. Be patient. Never confuse weight loss with fat loss. In the next chapter, you'll learn how to tell the difference between the two.

Chapter 3: Body Composition: How To Measure And Improve Your Fat To Muscle Ratio

"Losing weight is the wrong goal. You should forget about your weight and instead concentrate on shedding fat and gaining muscle!"

—Dr, William Evans, author of *Biomarkers*

"One accurate measurement is worth a thousand expert opinions."

—Admiral Grace Hopper

Muscle weight vs. fat weight

Beauty may be in the eye of the beholder, but let's face it – muscle looks better than fat. Fat fills in all the lines and “cuts” that separate each distinct muscle group. It covers up your muscles with a thick layer of spongy insulation, obscuring the definition below and adding a round, soft and doughy quality to your entire body.

Muscle is what makes your body solid, chiseled and athletic-looking, but muscle has more than just aesthetic value. Your goal should be to build and maintain muscle not only for how it looks, but also because of what it will do for your metabolism, your strength and your health.

Unfortunately, most people pay little attention to their amount of muscle because they're totally obsessed with scale weight. That is a big mistake! The scale doesn't tell you how much of your weight is fat and how much is muscle. Most dieters assume that weight loss is always a positive outcome, and weight gain is always negative. But what if the loss or gain came from muscle?

Another problem is that scale weight can fluctuate wildly on a daily basis depending on your body's water level. Changes in hydration can blur the real picture and lead you to false assumptions about your results.

Losing weight is easy. Losing fat and keeping it off – without losing muscle - is a much bigger challenge. If you simply wanted to lose weight, I could show you how to drop 15 –20 pounds over the weekend just by dehydrating yourself and using natural diuretics. Boxers and wrestlers do it all the time to make a weight class. But what good would that do you if it were mostly water and you gained it all back within days?

If you want to achieve solid muscle gain or permanent fat loss and get off the diet rollercoaster once and for all, you have to squash your preoccupation with scale weight and instead judge your progress based on *lean body mass* and *body fat*. Prioritizing body composition over body weight is a difficult shift in mindset to make at first, but it's essential to your long term success.

Why height and weight charts are obsolete

One of the most common methods of finding your so-called ideal weight is the height and weight chart. These tables, which are often used by insurance companies, physicians, sports teams and the military, tell you how much you should weigh based on your height alone. Although these charts are still popular, they're very misleading, especially to athletes and bodybuilders who carry more muscle than most people.

A 5-foot 8-inch male bodybuilder weighing 200 pounds would be "overweight" according to a height-weight chart. However, he could have a body fat level well into the single digits with clearly visible six-pack abs.

On the other hand, people with "normal" body weights could easily be classified as obese when you take into account their body fat levels. For example, a 115-pound woman could have 33% body fat. A 172-pound man could have 27% body fat. Both have acceptable bodyweights according to the charts, but their body fat levels put them in the obese category.

These people, who have a low body weight, but a high fat-to-muscle ratio, are what I call "skinny fat people." Skinny fat may be fitness slang, but it's actually a real clinical condition. Researchers call it normal weight obesity.

The reason for this discrepancy between so-called ideal weight and ideal body fat is obvious: Ideal weights from height-weight tables don't take body composition into consideration; therefore, they can't accurately recommend how much you should weigh.

Losing weight is not the same as losing fat. Weight loss is not a good thing if most of the weight comes mostly from muscle. Likewise, gaining weight is not the same thing as gaining fat. Gaining lean body weight is *always* good (unless you're an athlete who needs to stay within a weight class).

Body Mass Index – another misleading fitness indicator?

Body Mass Index (BMI) is another popular way to determine whether someone is at a healthy weight. Like the height and weight charts, BMI is also poor measure of fitness because it doesn't take into account fat versus lean tissue.

According to the textbook, *Physiology of Sport and Exercise* by Wilmore and Costill, BMI is defined as, "a measurement of body overweight or obesity determined by dividing weight (in kilograms) by height (in meters) squared."

The text says you're considered overweight if you're female with a BMI of 27.3 or greater or if you're male with a BMI of 27.8 or higher. It also says that BMI correlates highly with body composition and is a better indicator of fitness than your weight alone. (It even says you're more likely to die if your BMI is 25 or greater.)

I'll buy the part about BMI being a better measure of health and fitness than body weight alone, but the part about BMI correlating well to body composition is usually only true for couch potatoes. For someone who is undertaking the physically active, muscle-friendly ***Burn the Fat, Feed the Muscle*** lifestyle, BMI is just as misleading as height-weight charts.

Let me show you a personal example of how BMI falls short as a measure of body composition. In the non-competition season, I've weighed as much as 201 pounds, and I'm 5' 8" tall. Converted to metrics, 201 pounds is 91.36 kilograms and 5' 8" is 172 cm or 1.72 meters. Let's plug my stats into the BMI formula and see what we come up with...

201 pounds. = 91.36 kilograms.

1.72 meters squared = 2.96 meters

91.36 kilograms / 2.96 meters = 30.86 BMI

If we judge my physical condition according to my BMI of 30.86, then I'm a serious health risk and I need to lose some lard. Obviously, that's not the case. Even when I'm not in competition mode, my body fat rarely hits double digits (it was 8.7% the last time I had it measured).

Bodybuilders and other athletes carry more lean body mass than the average person and that's why they get classified as overweight if BMI is used as the criterion for measurement. On the other hand, someone could have a "healthy" BMI of 19 to 22 with a dangerously high level of body fat (that's the "skinny fat person" again).

Shape Up America, the anti-obesity campaign started by Dr. C. Everett Koop, published a statement pointing out the shortcomings of BMI. According to Shape Up America, BMI misclassifies one out of four people and should not be used by athletes. Since you're going to be eating and training like an athlete or bodybuilder on this program, forget about BMI and height-weight charts; the answer is body fat testing.

Body Fat Testing: The ideal way to measure your progress

Instead of looking only at *body weight*, the body composition test lets you distinguish between *body fat* and *lean body mass*. Another reason to measure body composition is so you can monitor your progress and get continual feedback. As you learned in Chapter 1, it's critical to have a way to objectively measure your progress. A weekly body composition test lets you measure and record the exact effect your nutrition and exercise program is having on your body.

Many people mistake activity for achievement. It looks like they're dieting hard and working hard in the gym. The problem is, they're not getting results and they don't even realize it because they're not *measuring* results! Even worse, they might think they're doing great because they're diligently working out, following a diet and losing weight.

You might be busy, busy, busy, but without the feedback you get from testing your body fat, you have no way of knowing if all that activity is moving you closer to your target. You could be spinning your wheels (burning up energy, but going nowhere), or even heading in the wrong direction (losing water and muscle, not fat). As Steven Covey points out in his book, *The Seven Habits of Highly Effective People*, "Many people are climbing the ladder every day, only to find that it is leaning against the wrong wall!"

The only goals worthy of your sweat and your effort are fat loss and muscle gain, not weight loss and weight gain. If you're losing weight, but the type of weight you're losing is muscle, then you're headed in the wrong direction and you need to change your program! If you're losing fat and maintaining your muscle, then your program is working and you shouldn't change a thing. There's no way to know this for sure unless you're measuring your body fat on a regular basis.

What is an average level of body fat?

Average body fat percentages vary among the sexes and among different age groups. Female hormones and child-bearing genetics cause women to carry at least 5% more body fat than men. The average woman has about 23% body fat and the average man approximately 17%. In both genders, body fat usually increases while lean body mass decreases with age.

According to Dr. William Evans of the USDA Human Nutrition Research Center on Aging at Tufts University, the average person loses 6.6 pounds of lean body mass every decade after age 20. The rate of lean tissue loss increases after age 45. With advancing age, most people gain fat even when body weight doesn't change much; the muscle shrinks as the fat accumulates. The average male college student (age 20) has about 15% body fat. The average sedentary middle-aged male has 25% body fat or more.

What is an ideal level of body fat?

Keep in mind that the body fat levels I just mentioned are *average* numbers, not necessarily *ideal* numbers. Then ask yourself if you want to be average. Look at it this way: Basketball coaching legend John Wooden once said, "Being average means you're as close to the bottom as you are to the top." I don't know about you, but I don't want to be anywhere near the bottom. If you really think about it, when two-thirds of the population today is overweight or obese then average isn't so good and a lot of health organizations have lowered their standards.

A body fat of 25% would statistically place a young woman in the average category, but that doesn't mean 25% is ideal. An optimal percentage of body fat for a non-athlete is around 10-14% for men and 16-20% for women. These ideal body fat goals are realistic, achievable and maintainable by almost anyone. Desirable body fat levels for athletes may be even lower, depending on the nature of the sport.

Everyone carries body fat differently, but at these levels, you'll look lean and for the most part, fat-free. If you want the look of a bodybuilder or figure competitor, you may need to drop your body fat even lower. Most men will start to show excellent muscle definition when they hit the mid to upper single digits. Women look defined when they reach the low to mid teens.

You're not destined to get fatter as you get older, but in the general (non-athletic) population, the average older person has more body fat. What I did to accommodate for this was to include a range instead of a single number, so younger people can use the low end of the range and older people can use the higher number for setting goals.

Body fat rating scale

	<u>Male</u>	<u>Female</u>
Competition shape (ripped)	3-6%	9-12%
Very lean (excellent)	≤ 9%	≤15%
Lean (good)	10-14%	16-20%
Satisfactory (fair)	15-19%	21-25%
Improvement needed (poor)	20-25%	26-30%
Major improvement needed (very poor)	26-30%+	31-40%+

Typical average body fat percentage for athletes

	<u>Male</u>	<u>Female</u>
Distance runners	5-10%	10-16%
Elite marathon runners	3-5%	9-12%
Sprinters	5-12%	12-18%
Jumpers and hurdlers	6-13%	12-20%
Olympic gymnasts	5-8%	11-14%
Bodybuilders, contest condition	3-5%	8-12%
Bodybuilders, off season	6-12%	13-18%
Football players, running backs, receivers, def backs	7-9%	NA
Football players, linemen	16-19%	NA
Soccer players	7-12%	10-18%
Baseball/softball players	10-14%	12-18%
Pro basketball players	7-12%	10-16%
Wrestlers	4-12%	NA
Cross-country skiers	7-13%	17-23%
Tennis players	10-16%	14-20%
Swimmers	6-12%	10-16%

Just so you can keep these numbers in perspective, single digit body fat for women and low single digits for men is far beyond lean - it's ripped - and that's usually only the domain of competitive physique athletes. Competition body fat levels were not meant to be maintained all year round. It's not realistic and it may not be healthy, particularly for women.

The low numbers are nice for bragging rights, but even in competition, the judges don't measure your body fat on stage. What counts is how you look and whether you're happy with that (or whether the judges are happy with it, if you're competing). Use my charts to help you set some initial goals, but for the most part, I recommend using body fat testing as a way of tracking your progress over time to see if you're improving rather than chasing after some Holy Grail number.

How much body fat is too much?

High body fat has been linked to over 30 health problems including type II diabetes, high blood pressure, cardiovascular disease, cancer and osteoarthritis. Being categorized as clinically obese means that body fat is at such a level that these health problems become a serious concern. Men are considered borderline at 25% body fat and clinically obese at 30%, while women are borderline at 30% and clinically obese at 35% body fat.

High levels of body fat also decrease athletic performance. Studies have shown that high body fat can decrease endurance, speed, balance, agility and jumping ability.

How low should you go?

It's impossible for body fat to drop to zero because some fat is located internally and is necessary for normal body functioning. This is called "essential fat." Essential fat is necessary for energy storage, protection of internal organs, and insulation against heat loss. Essential fat is found in the nerves, brain, bone marrow, liver, lungs, heart, and in nearly all the other glands and organs of the body. In women, this fat also includes sex-related fat deposits including breast tissue and the uterus. Essential body fat is at least 2-3% for men and 8-9% for women.

Competitive bodybuilders and endurance athletes such as marathon runners have been known to reach body fat levels as low as 3-4% in men and 8-10% in women. With today's obsession for leanness, the safety of dropping to very low body fat levels has often been questioned. Being extremely lean is undoubtedly healthier than being overfat, but trying to *maintain* extremely low body fat levels for too long a period of time might not be healthy or realistic.

This is especially true for women. With few exceptions, most women who try to maintain their body fat levels at or below 10-13% can have problems with estrogen production. Their menstrual

cycles and reproductive systems become disrupted and bone density may decrease, putting them at higher risk of osteoporosis as they grow older.

For physique athletes, reaching extremes of low body fat during a competitive season is par for the course. Putting yourself through Hell to get contest lean or trying to stay that lean for a long time is when problems can occur. Training and dieting in cycles so that body fat levels vary between in-season and off-season is healthier and more sensible. The typical female bodybuilder or fitness competitor will maintain a very lean and healthy 13-17% for most of the year, then drop down to 8-12% for competition. Men may drop as low as 3-5% for competitions, and then maintain at 8-10% in the off-season.

The most popular methods of measuring body composition

The scale, tape measure and mirror are all helpful, but alone they're not enough. Why not go strictly by the mirror? After all, what really counts is that you're happy with what you look like naked, isn't it? The problem is, when you look at yourself in the mirror every day, it's difficult to see the daily and weekly changes because they're taking place so slowly. This can be frustrating and discouraging – it's like watching the grass grow.

It's also difficult for most people to judge their progress objectively. The best-known example of distorted self-image is anorexia, but it works both ways: Many bodybuilders and exercise addicts suffer from muscle dysmorphia, a term coined by psychologists that could also be described as reverse anorexia. These are people who never think they are big or muscular enough.

Almost everyone has some degree of distorted body image. You rarely see changes in your own body as easily as others do. That's why you need an objective, accurate and scientific method of measuring your progress. There are at least a dozen methods of body composition testing. The experts will probably debate forever about which one is the best. After weighing the pros and cons, I think you'll conclude that for our purposes – tracking personal *weekly* progress - skinfold testing is the easiest and most practical method.

Underwater weighing (hydrostatic testing)

Hydrostatic testing, or underwater weighing, has always been considered the gold standard in body composition measurement to which all other methods are compared. Effective as it may be, hydrostatic testing is not without its drawbacks; the primary one is the inconvenience of getting dunked under water.

To get your fat measured hydrostatically, you get submerged underwater lying in a tank or while sitting on a chair that hangs from a scale (picture yourself sitting in a giant grocery scale as

you're dunked underwater in a pool). The basis for hydrostatic weighing is the fact that fat floats and muscle sinks. The fatter you are, the more buoyant you'll be, and the more buoyant you are, the less you'll weigh underwater. The leaner you are, the more easily you will sink, and the more you'll weigh underwater.

Hydrostatic weighing is usually done in hospital and university research centers. It can also be expensive, although at some universities you can volunteer to be tested by exercise science students for research projects. All things considered, underwater weighing is not very practical, although it's always interesting to get it done once in a while just for fun.

Bio-electric impedance analysis

Bioelectric impedance analysis (BIA) measures body fat by testing the electrical conductivity of your body's tissues. Lean body mass, because of its high (80%) water content, is highly conductive. Fat, because of its low (15%) water content, has an insulating effect and is less conductive. The traditional impedance test is done by attaching electrodes to the skin of your right wrist and right foot. Low amperage current is then passed through your entire body to measure resistance against muscle, bones, and fat tissue. A reading of resistance in ohms is then given to determine body fat.

Research shows that BIA is a fairly reliable and valid measure of body composition, but there are some things that can throw off the results. Since electrical impedance is influenced by body water, the results can fluctuate if you're dehydrated from alcohol, caffeine, exercise or heavy sweating. Hydration also varies depending on the time of day, so morning test results can fluctuate greatly from results at night.

BIA body fat scales and hand grip tests

A relative newcomer to the body fat testing scene are body fat scales and hand grip tests. The most popular scales are manufactured by Tanita. The most popular hand grippers are produced by Omron. The body fat scales and grippers use BIA technology, although they're are not the same thing as the standard BIA test done with the electrodes on the hand and foot.

The manufacturers point to scientific literature on the validity of BIA testing, but the research is mixed regarding the accuracy of the BIA scales and grippers, and so is user feedback. Most of the research on BIA testing was performed using the conventional whole body BIA test in a lab where you lie down and have electrodes attached to your wrist and foot. The results of these studies can't necessarily be extended to the scales or grippers because those devices don't measure whole-body electrical conductivity. The BIA scale measures only the lower body (foot

to foot). The BIA hand grip machine measures only the upper body (hand to hand). New BIA scales have recently been developed that also have hand grippers. In theory, these hand-to-foot BIA devices should be more accurate, but there's not much evidence to verify that yet.

The advantage of using a BIA scale is convenience and the ability to test yourself at home – nothing beats them for convenience and ease of use. But what you gain in convenience, you might lose in accuracy. If you decide to use the body fat testing scales, be sure to follow the test protocol to the letter, for consistency. If you think the scale is giving you consistent and repeatable measurements, then by all means continue to use it. However, don't be surprised if you see wild fluctuations and strange readings.

Until these scales are scientifically validated with more research, I would consider them experimental and only a second-best choice. One exception is if you're very overweight. Large skinfolds are sometimes difficult to measure accurately and consistently. This would make the BIA scale a reasonable choice for home testing. As your body fat gets lower, you can switch to the skinfold method if you choose.

Infrared

Near Infrared Interactance (NIR or simply infrared for short) uses the principle of light absorption and reflection to measure body composition. The measurement is taken by placing a fiber optic wand on the belly of the biceps muscle. The wand sends a beam of infrared light into the muscle where shifts in the reflections of the wavelengths are used to estimate total body fat percentage.

The Futrex machine is the most common of the infrared devices. Data on height, weight, age, sex, frame size, and activity level are entered into the device and the machine prints out the results. The advantages of this method are that it's fast, simple, and noninvasive. The disadvantages include the high cost of the machine (a couple grand for the commercial-quality model), and questionable accuracy and reliability across all populations, ages and body fat levels.

Circumference and anthropometric testing

These methods of body composition testing estimate your body fat by measuring bone diameter or limb circumference at several locations. Circumferences are taken with a tape measure while bone diameters are taken with a device called an anthropometer. Both methods are based on the assumption that there's an association between skeletal size, body measurements and lean mass. The diameters or circumferences are used in regression equations to determine fat free mass and thus body fat percentage.

The hip-to-waist ratio is one example of the circumference method. You may have seen these formulas or calculators on the Internet: You simply plug in your measurements, height and weight and – presto! – you have an estimate of body fat. The Navy formula is one of the most popular circumference-based body fat estimation formulas. For more information and an interactive online calculator, visit <http://www.BurnTheFat.com/navy-formula-bodyfat-calculator.html>.

These formulas are simple but they're less accurate than other methods. Research has shown that these methods can produce a large degree of error when compared to skinfold measurements and hydrostatic weighing. I would only recommend circumference methods if you have no other options and you just want a ballpark figure.

It is worth mentioning, however, that while you won't get your exact body fat percentage simply by measuring your waist size, the research does show that there's a direct correlation between waist circumference and total body fat. If for some reason, you decide not to measure your body fat percentage, the very least you should do is chart your weight and your waist measurement. If your waist measurement is going down, your body fat percentage is almost always going down as well.

The Bod Pod (air displacement)

The Bod Pod uses a technology known as air displacement plethysmography to determine your body density and body fat percentage. These odd-looking machines are usually only found in hospital or university exercise physiology labs and occasionally at health clubs. You sit in an egg-shaped fiberglass chamber, breathe into a tube and next thing you know, a machine spits out your body composition results, including lean body mass and body fat.

A study in the journal *Obesity Research* put the Bod Pod to the test and said that body density can be accurately measured in obese or overweight subjects using this method. However, a more recent study from the *Journal of Strength and Conditioning Research* said that the Bod Pod has not been fully validated in all populations yet. If you're overweight and you have access to a Bod Pod, this method may have potential as a body fat analysis tool. But if you're athletic, muscular or already lean, you're probably better off with skinfold testing.

Other Methods

There are many other methods used to measure body fat, including total body potassium, isotopic dilution, urinary creatine excretion, total body calcium, total body nitrogen, total plasma

creatinine, computerized tomography, magnetic resonance imaging (MRI), ultrasound, neutron activation analysis, and dual energy x-ray absorptometry (DEXA).

Some of these hi-tech techniques may be incredibly accurate and useful in the laboratory. Many experts consider the DEXA scan (which is also used to analyze bone density) as the new gold standard. The problem is, due to inconvenience, inaccessibility and expense, none of these methods is practical for personal home use and weekly results tracking. A DEXA scan, for example, is usually only available at hospitals; it requires that you lie still for up to 20 minutes and can cost anywhere from \$100 to \$250 per test.

If you really want the ultimate measure of body composition, it would be “direct measurement”; that is, physically measuring your fat level by dissection. Of course, you have to be a cadaver to get your fat measured this way, so it’s not too practical! I’m not saying that just to make a joke, but to point out that all body fat testing methods are merely estimations, not direct measurements.

Skinfold measurements: The “Pinch an inch” test

When you’re choosing a method for body fat testing, you need something that’s practical, inexpensive, easy to perform and provides consistency over repeated measurements: The skinfold test fits the bill perfectly.

Skinfold testing is based on the fact that you store most of your body fat directly beneath your skin. This type of fat deposit is called subcutaneous fat. The remainder of your body’s fat is located around organs (internal or visceral fat) and inside muscle tissue (intramuscular fat).

Measuring the amount of subcutaneous fat you have by pinching folds of skin and fat at several locations can give you a very accurate estimate of your overall body fat percentage. A *skilled tester* can produce a body fat measurement with accuracy very close to underwater weighing. Most importantly, skinfold testing is extremely practical.

The test is done with a simple, vice-like instrument called a skinfold caliper. The jaws of the caliper pinch a fold of skin and fat and measure the thickness in millimeters. There are many different brands of calipers on the market. The Lange, Harpenden, computerized Skyndex, and the Slimguide calipers are some of the most common and accurate models, although the cost of the first three can be high, ranging anywhere from \$150 to as much as \$450 for the electronic Skyndex.

If someone else will be testing you at home, I recommend the Slimguide calipers because they’re one of the few inexpensive (plastic) models that give fairly accurate readings.

Skinfold self-testing: Can you measure your own body fat?

Another economical skinfold caliper is called the Accu-Measure. Unlike the others, the Accu-Measure is a caliper specifically designed for personal self-testing. In a 1998 study published in the *Journal of Strength & Conditioning Research*, the Accu-Measure was found to be just as accurate as the sum of three skinfolds taken by an experienced tester with a Lange caliper.

Having your body fat tested by an experienced technician with multiple skinfold sites is ideal, but the Accu-Measure is definitely good news if you don't have access to any other form of testing. Even if the margin of error is greater than getting your fat measured by a professional, self-testing will at least tell you whether your fat percentage is dropping or not, because any decrease in skinfold thickness shows that you're losing body fat. And of course, a major advantage is that you can do the Accu-Measure test in the privacy of your own home.

The Accu-Measure retails for about \$20 and can be purchased at many Internet sites. For a review of popular skinfold caliper models and information on where to find them, visit <http://www.burnthefat.com/skinfold-calipers.html>.

Skinfold testing formulas

Using the calipers, skinfold measurements are taken at several sites around the body (with the exception of the Accu-Measure, which only measures one site), then the sum of the measurements is added up. This sum is then looked up on a fat percentage estimate chart that comes with the calipers. These charts are derived from mathematical regression equations and they enable a quick interpretation of the skinfold measurements in millimeters. Computerized calipers like the Skyndex or Accu-Measure "Fat Track" add up the skinfolds and do the calculations automatically for you.

Most body fat formulas require you to measure body fat at three different locations. Different formulas may use as few as one or as many as eleven skinfolds, and any number of these sites can be used in various combinations. The standard skinfold sites are usually the abdominal, suprailliac (hip), bicep, tricep, chest, subscapular (upper back), thigh, axilla (below the armpit) and calf.

Don't get too hung up on where your skinfolds are measured. Some people get concerned if most of their visible fat is in their lower body and the skinfold test only measures the upper body sites. Body fat formulas from skinfolds will give you a very accurate estimate of your *overall* body fat just from one to four sites, even if they're all measured from your upper body.

Taking measurements at three or four sites has proved sufficient for an accurate reading. Most research has shown that using more than four sites doesn't increase the accuracy much further, but using fewer than three sites tends to decrease the accuracy slightly.

How accurate are skinfolds?

Skinfolds are sometimes criticized for being inaccurate (especially by the makers of other fat testing devices). Compared to complicated techniques such as underwater weighing, DEXA or MRI, skinfolds may seem too simplistic to be accurate.

Skinfold testing does require a lot of practice to master the pinching technique. The greatest errors are human errors from not locating the right spot or from taking the skinfold with improper technique (for example, taking a horizontal fold when it should be a vertical fold.)

Dan Duchaine, author of *Body Opus*, once wrote, "I don't know why calipers are so accurate. Although you can find more glamorous contraptions, a skilled 'pincher' can get a better estimate than with any other method except dissection. The only drawback to using calipers is operator error; but practice does make perfect."

When performed correctly by a skilled test administrator, skinfold tests are almost as accurate as any other method for testing individuals in the range of 15-35% body fat. For individuals over 35% body fat, the accuracy of skinfolds does decrease somewhat, and for lean individuals, skinfolds might be the most accurate method of all (although multi-site tests are preferred for very lean people).

Reliability and consistency of skinfold testing

Because there are so many different types of calipers and skinfold formulas, the important thing is to have the same person test you using the same formula and the same calipers every time. The *accuracy* is not as important as the *consistency* of repeated measurements.

Even with the most skilled tester, skinfolds – and most other techniques for that matter – are only accurate within three to four percent. However, if skinfolds determine you are 12%, it doesn't matter if your body fat is really 15%. What matters most is that the method you use is reliable so you can chart your progress consistently from one measurement to the next.

That's really the primary purpose of body fat testing – to measure your progress – and in the next chapter, you'll learn just how important that really is.

How to calculate your fat weight and lean body mass

By itself, your body fat percentage is nothing more than a number – it doesn't really give you any benefit, except maybe bragging rights if the number is low. The real value in knowing your body fat percentage is as a tool to monitor progress in terms of muscle and fat in pounds or kilos.

Once you know your body fat percentage, the next step is to use it to calculate how much of your total weight is fat and how much is muscle. Then, you can chart your progress in total weight, fat weight, body fat percentage and lean body mass (LBM).

Your LBM is the total weight of all your body tissues excluding fat. This includes not only muscle, but also bone and other fat-free tissues. Since muscle is the largest component of the lean body mass, then keeping track of your LBM can tell you if you've lost or gained muscle. Tracking your LBM is one of the most useful and important purposes of body fat testing.

To calculate your LBM in pounds you need to know two things: (1) your bodyweight and (2) your body fat percentage. First, determine how many pounds of fat you're carrying by multiplying your body fat percentage by your weight. You then can calculate your lean mass by subtracting the pounds of fat from your total bodyweight.

Example:

Your body weight is 194 pounds (88.2 kg)

Your body fat percentage is 18% (.18)

Multiply your body fat by your weight to determine fat weight:

$$.18\% \times 194 \text{ pounds} = 34.9 \text{ pounds (15.9 kg) of fat}$$

Subtract fat weight from total weight to determine lean mass:

$$194 \text{ pounds} - 34.9 \text{ pounds fat} = 159.1 \text{ pounds (72.3 kg) lean mass}$$

A simple test to determine your true ideal weight

Now that you understand the importance of body fat versus body weight and you realize why BMI and height and weight charts are almost worthless, how do you figure out your ideal weight? Well, first of all, consider the idea that maybe it doesn't matter what you weigh! If you were solid muscle without an ounce of visible fat on your body, and you loved the way you looked in the mirror, would you honestly care how much you weighed?

That being said, it's still wise to have a weight goal in pounds (or kilos) as well as a body fat percentage goal. You can only determine a true ideal weight if you know your current body fat level and the level you want to reach.

The ideal weight formula:

To calculate your ideal bodyweight, you need to know your desired (target) body fat percentage, current weight, body fat percentage, and lean mass. You simply divide your current lean mass by your percentage of lean mass at your target (desired) body fat percentage. The formula is:

$$\frac{\text{Current Lean Mass (in pounds or kilos)}}{1 - \text{Target Body Fat \%}}$$

Example:

You are male

Your weight: 194 pounds (88.2 kg)

Your body fat: 18%

Your fat weight: 34.9 pounds (15.9 kg)

Your lean mass: 159.1 pounds (72.3 kg) (total weight minus fat weight)

Your target body fat percentage: 12% (.12)

Determine your percentage of lean mass at your target body fat by subtracting your desired body fat from 1: (1.0 - .12 = .88)

Divide your current lean mass by 1 minus your percentage of lean mass at your target body fat percentage to yield your ideal weight: (159.1 pounds/.88 = 181 pounds (82.3 kg)

Thus, your ideal weight at 12% body fat is 181 pounds (82.3 kg)

How water weight affects your LBM measurements

When using this ideal weight formula, it's important to consider water weight. Since your body is 70% water, make an allowance of up to 2-4% in additional weight loss. The higher your total body weight and the greater the amount of fat you have to lose, the more water weight you'll lose.

It's common to see weight losses of three to five pounds in the first week when you start the program, especially if you cut back on your carbohydrates. Because water and glycogen (carbs stored in your muscles) are a part of the lean body mass number, water losses will show up in your LBM calculations during the first week or two. This will make it look like you've lost muscle, but don't panic if you see small drops in LBM – it's only water weight.

After the first week or two, your weight loss should stabilize to two pounds (approximately a kilo) per week and further decreases in lean body mass should be minimal. Remember that it's difficult to lose much more than two pounds of pure fat per week. If you lose more than two pounds, most likely, some of it will be water or muscle.

Small decreases in LBM are almost unavoidable and are not a cause for concern. However, if you see a repeated weekly pattern of decreasing LBM, then you are losing muscle and you should take immediate corrective action to prevent further losses.

Now that you know how to measure your body fat and calculate your lean body mass, you're ready to learn how to record your results and chart your progress each week. You'll also learn about the feedback loop system which tells you exactly what to do if: a) You lose lean body mass, b) You gain body fat, c) You lose fat for a while, then get stuck at a plateau or, d) Nothing happens at all - you don't lose or gain anything! All of that and a lot more is coming up in Chapter 4!

Chapter 4: Charting Your Progress and Breaking Plateaus: How to Use Performance Feedback to Get From Where You Are to Where You Want to Be

"If you do what you've always done, you'll get what you've always got. If what you are doing is not working, do something else."

— Joseph O' Connor and John Seymour, *Introducing Neuro-Linguistic Programming*

"Realize that there is no such thing as failure. You never fail, you simply produce results. Keep this in mind and you will achieve all that you conceive in your mind."

— Dr. Wayne Dyer, *You'll See It When You Believe It*

Life's delays are not life's denials

It was a dark and cloudy Thursday in May as I boarded a Continental 757 for a 4:45 p.m. flight from Newark to San Francisco. I took my seat and waited for takeoff as I anticipated a relaxing week in northern California. 4:45 quickly came and went, but the plane didn't budge. At 4:55, the captain's voice echoed through the cabin over the loudspeakers: "There are level 4 and 5 thunderstorms just east of Newark and they're headed our way. The winds in these thunderstorms can reach tornado force and believe me, we wouldn't want to get stuck in one of those. We're going to have to wait it out."

As eager as I was to get to California, I couldn't agree more with the captain, so I just sat back, opened a good book and waited. We sat there on the runway for nearly two hours as fierce winds and a torrential downpour pelted the plane. Finally, at around 6:30 p.m., the storm passed and the plane started taxiing toward the runway.

Unfortunately, we still couldn't take off. Because all the planes in the queue had backed up, we slowly inched our way forward and had to wait our turn in line. It wasn't until 7:00 p.m. that we were in the air at last. With all the turbulence from the storm, it was a bumpy ride on the way up. A few passengers started to panic and some even looked a little sick. After about five minutes of being tossed around, the air calmed, the plane leveled and we were smoothly headed towards San Francisco.

But we weren't headed towards San Francisco for long. Within minutes, the plane shifted slightly off course. The onboard computer noted the plane's errant trajectory, the pilot made a small adjustment, and once again we were headed for San Francisco. Amazingly, this process repeated itself for the entire six hours of the flight. Of course, I couldn't notice this by looking out the window, but I knew it was happening just the same.

You see, an airplane never travels in a perfectly straight line. Even with the most sophisticated guidance systems, a certain amount of drift will always occur due to the effects of the wind. Using a variety of feedback such as radar, radio beacons, geographical landmarks and aeronautical charts, the navigation equipment in the cockpit picks up the slight change in course. The pilot (or autopilot) can then adjust the plane's direction.

How to use performance feedback to lose body fat

The process of losing body fat is a lot like the takeoff and flight of an airplane. Some people take a long time to get off the ground. Instead of being patient and waiting out the storm, they quit before they even get to takeoff speed. Others get off the ground, but as soon as they hit any turbulence, they quit and "land the plane." Some people even manage to start coasting comfortably toward their destination, making substantial progress. But the minute they find themselves off course, they also join the quitters instead of simply adjusting their direction.

Each of these people made the fatal mistake of interpreting their results as failure. Because they believed they had failed, they gave up. Can you imagine if a pilot quit every time there was a delay, turbulence, or a slight deviation in the plane's course? No one would ever get anywhere! The key to your success in losing body fat starts with a mental re-frame:

There is no such thing as failure - only feedback; only results.

Price Pritchett, the author of 25 books including *The Quantum Leap Strategy*, emphasizes that failure is a sign of progress:

"Everything looks like a failure in the middle. You can't bake a cake without getting the kitchen messy. Halfway through surgery it looks like there's been a murder in the operating room. If you send a rocket toward the moon, about ninety percent of the time it's off course – it 'fails' its way to the moon by continually making mistakes and correcting them."

If you measure your body fat and there's no change (or it increases), you haven't failed – you've simply produced a result. As long as you have a goal and you're taking efficient daily action toward that goal, then whatever result you produce is "performance feedback." It may not be the result you wanted, but it's still valuable feedback. You've learned something: You've learned one way that doesn't work.

If you want to produce a different result, you simply need to try a different approach. One definition of insanity is continuing to do the same thing over and over again while expecting a different result. Thomas Edison tried thousands of experiments to find a filament that would burn

in the electric light bulb. When asked what it felt like to fail so many times, Edison said he didn't fail:

“If I find 10,000 ways something won't work, I haven't failed. I am not discouraged, because every wrong attempt discarded is another step forward. Just because something doesn't do what you planned it to do doesn't mean it's useless.”

You'll always get some kind of results. It's how you interpret your results that determines whether you'll reach your final destination or not. Like the pilot, or Thomas Edison, you need to gather feedback and change your course the instant you notice you're not heading in the right direction, while learning in the process.

At the most basic level, breaking a fat loss plateau simply means making changes to establish or re-establish a calorie deficit. There are two ways you can create or expand a calorie deficit – eat fewer calories or burn more calories. A calorie deficit is a must, but as you learned in Chapter 2, reducing calories is only feasible to a point. That's why it's also important to focus on increasing the amount of calories you burn every day. Because of the benefits you get from training, the “burn more” strategy, in many respects, is far superior to just eating less.

Even burning more calories only works to a point, because over-training and adaptation can set in, and at some point, a high training volume becomes impractical. You need to find the right balance between eating less and burning more and you need as many options as possible for achieving that balance. In cybernetics, this is known as the “law of requisite variety.” All other things being equal, the person with the most choices is most likely to succeed. You'll learn about all your options for breaking plateaus later in this chapter.

The fat loss success system that never fails

In 1976, linguistics professor John Grinder and mathematician Richard Bandler developed a new field called Neuro Linguistic Programming (NLP). Initially designed as a tool for therapy, NLP blossomed into a much broader field focused on communication and personal excellence. Today, Dr. Bandler calls it “The study of successful thinking.”

NLP is a methodology for discovering patterns of success and then duplicating those results through a procedure called modeling. NLP also teaches you how to “run your brain” and think constructively so you can achieve better results. It teaches you how to communicate with yourself and to “change frames” so you see things from different perspectives. Perhaps most important, NLP teaches you how to use feedback to unflinchingly guide you to your goals.

Based largely on the principles of NLP, I've developed a seven-step fat loss formula that is 100% guaranteed to help you reach the goals you've set. Because of its self-correcting nature, this system cannot fail – you can only fail if you don't use the system. Think of it as your own personal “guidance system.” Here are the seven steps:

1. Know your outcome. Decide exactly where you want to go.

By now you should have already established your goals and put them in writing. If you didn't, then stop reading right now and go back and do the goal setting exercises from Chapter 1. Nothing else you read in this book will help you much unless you have a clearly specified target. You might try a technique here and a tactic there, but ultimately you'll end up floundering because you won't have the direction, purpose or motivation that comes from having written goals. If you don't know where you're going, that's exactly where you'll end up – nowhere!

2. Establish your starting point.

It's not enough to know where you want to go; you also need to know exactly where you are now so you can chart the proper course to your destination. Once you've committed your goals to writing, the next step is to establish your starting point with objective measurements. Two of the most important measurements are your body fat percentage and lean body mass. Your body fat percentage, total body weight, fat weight and lean body mass should all be recorded in the first row of your *Burn the Fat, Feed the Muscle* progress chart (see appendix).

3. Formulate a plan of action.

The most efficient way to choose a plan of action is to model (copy) the physical and mental strategies used by those who have already achieved what you want to achieve. Modeling suggests that instead of re-inventing the wheel, you plug into a proven formula that already exists. You tap into the collective knowledge and experience of those who have gone before you and learn from their mistakes. Find successful people, do what they did, and you'll get a similar result. Trial and error can be a long and painstaking process, and life is too short to do it the long way. Learn by modeling the experts.

If you want to lose body fat *permanently*, it makes no sense to model the 95% of the population who lose weight and gain it all back. Yet, following the masses is exactly what most people do, only to end up one of the failure statistics. That's why you must choose your role models carefully. Trying to duplicate the routine of pro bodybuilders on steroids would be a grave mistake because they are genetically-gifted, full-time professional physique athletes using artificial assistance. Imitate those who have mastered the art and science of permanently burning

fat while maintaining muscle in a healthy way. Few exemplars fit this description better than *natural* bodybuilders and physique athletes.

Modeling does have limitations. There's no guarantee that anyone can become a world class bodybuilding or figure champion. That would be implying that every person has the same genetic potential. What modeling *will* do is to enable you to reach the upper limits of your own genetic capabilities in the shortest time using a system that's already been proven to work for others. It lets you become the best *you* can be, and to do it as quickly as possible by bypassing unnecessary trial and error.

Because you are a unique individual, you'll always have to go through a certain degree of experimentation, no matter how time-tested your plan is. However, all people who successfully lose body fat have certain things in common. The fundamental principles apply to everyone; there are laws of fat loss just as there are laws of gravity and electricity. People who get lean and stay lean have mastered these laws and fundamentals. You can learn these laws yourself and duplicate them.

A master chef produces award-winning dishes over and over again by using the same recipe. A recipe is a proven mixture of ingredients that, when combined in the right sequence and amounts, produces the same delicious dish – every time.

This program is your recipe for sure-fire fat loss. The techniques you're reading about will provide you with a guaranteed plan that has already been tested and proven effective by the leanest athletes in the world as well as hundreds of thousands of ***Burn the Fat, Feed the Muscle*** readers in 152 countries worldwide. If you use the same recipe, it will work for you too.

4. Act on your plan consistently.

You can have the loftiest goals and the best plan in the world, but if you don't act on them, you won't achieve a thing. A goal without action is worthless. Faith without action is dead. An affirmation without action is delusion. The bottom line is that you must put the book down, get off your butt and get in the gym! Work at it. Deserve it. Pay the price. Earn it. Nothing worth having ever comes without effort – don't ever forget that. It takes hard work and efficient action every single day. You have to do something every day to move you closer to your goal.

5. Develop the “sensory acuity” to know if what you are doing is working or not. If it's working, keep doing it.

After you've put your plan into action, you need to work on developing the “sensory acuity” to know if your plan is working. Sensory acuity is an NLP term used to describe your ability to see,

feel and notice even the smallest changes in your body. In a nutshell, it means paying attention. As long as you're taking action and paying attention to the results, it's ok to make mistakes. Mistakes are how we learn. The only person who makes no mistakes is the person who plays it safe and never tries anything.

The problem is, some people have been making the same nutrition and training mistakes for 10 years, and they still wonder why they aren't getting any results. You've got to be smarter than that. If you don't pay attention, you might be taking action, but repeating the same mistakes over and over again. As Emerson once said, "A foolish consistency is the hobgoblin of little minds."

Suppose someone asks you, "Is your program working?" If your answer is, "I don't know," then you're not paying attention and you need to develop better sensory acuity. Your program is either working or it's not working. You're either moving forward or backward. Maintenance is an illusion. Everything in the Universe is either growing or dying, creating or disintegrating. You must chart your progress toward your goal in writing and pay attention to the direction you're heading – and if it's the wrong direction, change it quickly!

Elite bodybuilders and physique athletes have developed incredible sensitivity to the way they look and feel. They have the uncanny ability to notice the tiniest difference in their bodies when they change their nutrition or training programs. This enables them to decide whether the change was effective or not. Without this kind of sensitivity to your results, your program could be working and you might not even notice. Or worse, it might *not* be working – and you don't notice!

High levels of sensory acuity aren't developed overnight. It's an art and a skill that takes time to develop, but anyone can master it. You simply need to know *what* to look for and then pay attention. Ultimately, you need to learn how your own body responds and then be able to make your own adjustments. You must become your own expert. Coaches and trainers are helpful, but no one knows your body like you do. Once you've locked onto a winning strategy and you're getting the results you want, don't change a thing. Have the strength to stay your course, no matter what anyone tells you.

6. If it's not working, do something else.

The instant you realize you aren't making progress, you must immediately adjust your approach. Don't get discouraged. If you didn't get the result you wanted, remember – you didn't fail; you succeeded at producing a result. You've only failed if you quit.

Use feedback as a lesson. Mistakes are ok if you notice them and learn from them. Once you see that what you're doing isn't working and you recognize it as nothing more than feedback, then try something different. Later in this chapter, and elsewhere in this book, you'll learn about the many options you have for changing your strategy when things aren't working the way you planned.

7. Be flexible in your approach and be persistent.

Be open-minded and flexible. Be willing to adjust your approach as many times as necessary until you reach your goal. Be willing to try as many different things as necessary for as long as it takes. Do not do what it takes for your training partner, your neighbor, your spouse or anyone else. Do what it takes for *you*.

Motivation guru Anthony Robbins once told the story of a man at a seminar who was extremely frustrated with the lack of results in his business. The befuddled businessman said he had tried "everything," but nothing worked. Here is the exchange that went on between the two of them:

Robbins: "You've tried EVERYTHING???"

Attendee: "Yes, I've tried absolutely everything!"

Robbins: "Tell me the last HUNDRED things you tried."

Attendee: "I haven't tried a hundred things."

Robbins: "OK, then just tell me the last FIFTY things you tried."

Attendee: "I haven't tried fifty things."

Robbins: "All right then, tell me the last DOZEN things you tried."

Attendee: (getting somewhat embarrassed) "Well, I haven't tried a dozen things."

Robbins: "I thought you said you tried EVERYTHING! So tell me then, how many things HAVE you tried?"

Attendee: (red-faced, shrinking back into his seat), "Two or three."

Now ask yourself - and be honest – how many different training and nutrition strategies have you tried? How long have you been working at losing body fat? How persistent have you been? Have you quit prematurely?

If your initial plan doesn't give you the results you want, the number of exercise and nutritional strategies you can experiment with is virtually unlimited. Don't be too dogmatic or rigid in your approach. Be flexible. It's necessary to have an action plan, but don't get married to your plan. The more options you have at your disposal, the greater your chances for success. Leave yourself room to improvise.

In developing the martial art of Jeet Kune Do, Bruce Lee worked hard to create a philosophy for self-defense and personal growth. His method was:

1. Research your own experience
2. Absorb what is useful
3. Reject what is useless
4. Add what is specifically your own

Lee explained,

“Formulas can only inhibit freedom. They are externally dictated prescriptions that only squelch creativity and assure mediocrity. Learning is definitely not mere imitation, nor is it the ability to accumulate and regurgitate fixed knowledge. Learning is a constant process of discovery – a process without end.”

Beware of overly rigid programs or “gurus” who dogmatically declare, “It’s my way or the highway.” There is no single best way. By studying, reading and modeling others, you can quickly master all the universal principles and laws that regulate body composition. Once you’ve absorbed these fundamental laws, then through action, persistence and sensory acuity, you can develop your own personal formula.

Your personal formula is based on your unique body type and the way you respond to various combinations of nutrition and training. By transcending all rigid styles and systems, you’ll no longer be bound by a particular way of doing things and thereby will gain the freedom to reach your highest potential.

Successful people all have certain things in common. “Success leaves clues,” said Tony Robbins. Model successful people, but instead of limiting yourself to a single way, model from *many* successful people. Take a little from here, a little from there; keep what works, and throw away the rest. Jim Rohn summed up this process well when he said, “Be a student, not a follower.”

The top 10 methods of getting performance feedback

Pilots and ship captains use compasses, gyroscopes, accelerometers, radar, radio beacons and geographical and astronomical landmarks as their methods of feedback. Your optimal method of measuring progress is body composition testing. However, the more ways you have of measuring your results, the better.

10 ways to measure your progress

1. Body fat percentage
2. Skinfold thickness
3. Total body weight
4. Lean body mass (LBM)
5. Fat weight
6. How you look in the mirror
7. Before and after photographs
8. Measurements (tape measure)
9. Clothing sizes and how clothes fit
10. Other people's opinions

The mirror and photographs are useful, but they're also subject to the filter of your own self-perceptions (especially the mirror!) Other people's opinions can be very helpful if the feedback is honest, but they can steer you in the wrong direction if they're just being nice to avoid hurting your feelings. All these methods have value, so use them. However, it's also important to use progress measurements that are objective, such as body fat percentage. The skinfold calipers and scale don't lie.

Adjust your approach according to your weekly results

Very rarely will you move in a constant and linear path in the direction of your goals. Usually you will zig-zag your way to success. If you work hard, you'll see progress every week, but your *rate of progress* will often vary. One week you may lose .5% body fat, the next you may lose .7% and the next only .4%. If you have a bad week, you might not make any progress.

Don't let this up-and-down pattern of fat loss discourage you. Never panic over a one-week fluctuation. The trend over time is much more revealing. Your progress chart is a lot like the stock market. The market fluctuates up and down in the short term, but in the long run, the trend is always upward. If you're persistent, if you stay focused on the fundamentals and if you continue to make daily investments in your body, your progress chart will always show a trend in the direction you want to go.

Just as you need faith in long-term investments in the market, you must have faith in long-term investments in your body, without getting too emotional about short-term results. If you look only at one small segment on your body composition progress chart, you're liable to give up or make poor and hasty decisions. Keep your eye on the big picture, keep watching the trends and keep working daily on the fundamentals.

Why some people get off to a slow start

Most people see results immediately just by cleaning up their diets, starting a consistent exercise program and getting mentally focused. Others have a more difficult time getting up to takeoff speed. Like the airplane that uses an enormous amount of fuel just to get off the ground, overcoming inertia and gaining momentum require a lot of energy. Part of this is psychological, part is physiological.

Psychologically, if you're off to a slow start, you simply haven't given yourself enough time to develop new habits. Habits are necessary to get you into "auto-pilot mode"; therefore, you could be making poor food choices unconsciously or missing workouts by sheer weight of old negative habit patterns. Reviewing Chapter 1 and following the instructions to the letter will help you overcome the old conditioning.

Physiologically, your metabolism may be a bit on the sluggish side, especially if you've been totally sedentary, if you've gone on and off crash diets for years or you haven't developed any muscle through weight training. This program will help you bring up your metabolic rate, but it takes time.

Be patient. As with building wealth, you can break out of your current circumstances by making consistent, gradual investments in your body. Eventually, as your eating habits improve and your lean body mass increases from weight training, your metabolic rate will increase and your body will multiply its efficiency like compounding interest in your bank account.

The first thing you must do if you hit a plateau

You should see some kind of positive result every week. If you're getting no results after seven days, the first thing to do is check your compliance. Ask yourself honestly: "Have I been doing what I know I should be doing, every day, or have I been slacking off? Have I put in 100% effort or could I have given it more? Have I been consistent in my eating and training habits every day? Have I been eating perfectly one day, then eating poorly the next? Am I doing a great job all week, then blowing it on the weekends?"

Fat loss is the result of consistently applying nutrition and exercise fundamentals every single day. If you realize you didn't give it your all, don't beat yourself up, simply re-focus and recommit for the next week. Re-writing and re-reading your goals will help. Plan your training and nutrition strategy for the next seven days in advance; schedule the workouts right in your daily planner with the rest of your appointments. Then go back to work with renewed vigor, motivation and enthusiasm.

If you faithfully followed your program 100% (except for planned, allowed free meals), and you still got no results, that's your signal to make changes to break your plateau.

4 primary ways to break a fat loss plateau

The first step in breaking plateaus is to stay positive and focused on your goal. Discouragement and frustration cause many people to give up when they would have easily broken through with nothing more than persistence and a shift in attitude. Focus on where you want to go, not on where you are. A slow week is not a setback, it's feedback. If you have a week with no results, be like Thomas Edison and say, "This is great! I've learned another way that doesn't work."

When you look in the mirror and see no change, and you still keep the faith, knowing that in time you will get there if you stay the course, that's the difference between those who ultimately succeed and those who fail. The losers - the unsuccessful ones - throw their arms in the air in frustration after a few weeks with slow results and they quit, all the while grumbling about how they tried "everything" and it didn't work.

Breaking plateaus with hard work

Usually when you hit a plateau, it means you need to work harder: You need to crank up the intensity and sometimes the frequency of your training. You also need to tighten up your diet. Many people underestimate the amount of effort it requires to develop a lean body. They've been so brainwashed by the media and the advertisements for fast weight loss scams that their perception of the amount of work required is flawed. It takes hard work to get lean, and if the degree of effort you're putting in isn't working, then quietly, and without complaining, accept the fact that you need to work harder.

For example, if you're doing 20 minutes of cardio per session, you can increase the duration to 30 minutes. If you're doing 30 minutes, you can increase it to 40 minutes. If you don't have time to do more or longer workouts, then you can increase the intensity of your workouts and burn more calories in the same amount of time. You can push yourself harder in the weight room or switch to more challenging exercises and combinations. If you've been cheating several times a week, you can drop back to only one or two free meals a week. You can eat less often in restaurants. You can scale back your portion sizes.

Breaking plateaus with rest and recovery

Naturally, doing *more* and doing it *harder* is not always the best strategy. Sometimes when you're stuck in the mud, pushing on the gas pedal even more just spins your wheels and digs you

into a deeper rut. If you've been following an intense and high volume training schedule for more than three or four months, your plateau could be due to over-training syndrome.

If you suspect over-training is the cause of your plateau, sometimes the best thing to do is to cut back on your volume and get back to basics. If you're severely over-trained, you may actually need to take a week off to let your body fully recover. Don't worry about losing ground - even if you do, the break is like taking one step back to get ready for two steps forward. Once your system has recovered and replenished itself, you'll easily be able to thrust beyond your old plateau to a new peak.

Breaking plateaus with the cycling method

Prolonged calorie restriction is a common cause of metabolic slowdown. It's a given that weight loss decreases your metabolism because a smaller body needs fewer calories. However, as you learned in Chapter 2, caloric restriction by itself can decrease your metabolism beyond what you would expect from the drop in bodyweight.

If your caloric intake has been very low for a long time and you suspect this as a reason for slower than expected fat loss, the best thing you can do is temporarily raise your calories in order to re-stimulate your fat burning hormones. Keep your food quality high; just eat more of the same nutritious foods.

Depending on the duration and degree of calorie restriction you've been through, you might need a brief one- to three-day spike in calories (also known as the re-feeding, carb cycling or zig-zag method). You might even need to take a complete break from strict dieting and raise your calories to maintenance for as long as a week or two before returning to a calorie deficit. You'll learn more about this method in Chapters 6 and 12.

Breaking plateaus with change

Adaptation syndrome is a common cause of progress plateaus. The body can easily adapt to weight training or cardio programs that have been repeated for a long time. Once your body has adapted, continuing with the same training stimulus will not always continue producing improvements.

To avoid strength and muscle development plateaus, you must train with progression from one workout to the next and make significant changes in your weight training program at least every four to twelve weeks. Your cardio program can also be changed any time you've hit a plateau in

fat loss. The more advanced you become, the more quickly your body will adapt and the more often you should manipulate the training variables.

The variations are literally endless and almost any change will work. In your cardio workouts, you can change the type of exercise, the intensity, the duration, the frequency, steady state versus interval, fed versus fasted or the time of day. In your weight training workouts, you can use new exercises, different set/rep patterns, you can change tempo, rest intervals, grip or stance width, and so on.

The training and nutrition variables you can change

If you have a week with no progress, the most important point to remember is that continuing to do the same thing for another week is probably not going to work. If what you're doing isn't working, do something else! Keep all the fundamentals in place, but begin to tweak some of the training and nutrition variables.

The more options you learn and keep at your disposal, the better your chances of success. The only way to learn your options and how they affect your results is to study nutrition and training and *systematically* begin experimenting.

Here's the master checklist of the most important training and nutrition variables you can adjust each week depending on your weekly results.

1. Eat less.

If you've stopped losing body fat, it means you're no longer in a calorie deficit. So at the simplest level, breaking a fat loss plateau means re-establishing your deficit.

The conventional approach to dieting says that if you're not losing body fat, the only solution is to keep cutting your calories. The ***Burn the Fat, Feed the Muscle*** philosophy revolves around the concept that *it's better to burn the fat than to starve the fat*. Think about it: Cutting calories excessively causes a reduction in metabolic rate while providing you with fewer nutrients. Eating more increases your metabolic rate while giving you more nutrients. Intense training can also increase your metabolic rate. Why not eat more *and* train more for a two-fold increase in metabolic rate and better nutrition? (Not to mention, eating more is a lot more fun!)

Eating more and burning more is known as having a high energy flux, where more energy flows in and more energy flows out, and it explains the amazing physiques of many athletes who train hard and eat more to support their training. Some people resist this idea because they think that

training more and eating more will cancel each other out. That's not always true, because you can also have a deficit at a higher level of caloric intake.

At times you will need to reduce your calories to break a plateau. Just remember there are two sides to the equation; you can burn more, not just eat less. Reducing calories is the ideal choice when you're still eating a relatively large amount of food or you think you overestimated your calorie needs. However, if your calories are already low, or you've already cut them repeatedly to break previous plateaus, further cutting calories will usually backfire.

2. Manipulate the macronutrient composition of your diet.

Although the baseline nutrition approach of 50% carbohydrates, 30% protein and 20% fat is a good bet most of the time for most healthy, active people, a drop in carbohydrates with a corresponding increase in protein (and/or healthy fats) can often help break a plateau, especially when you're already lean and you want to get even leaner. Decreasing carbohydrates while increasing protein and healthy fats may provide a slight metabolic and hormonal advantage over a high carbohydrate diet – especially for obese and sedentary individuals who often have problems with blood sugar control. You'll learn more about macronutrient manipulation in Chapter 8 and about lower carb, higher protein diets in Chapter 12.

3. Improve your food choices.

It's generally not a good idea to force yourself to eat anything you don't like. Food is one of life's great pleasures and depriving yourself completely of anything you enjoy is not conducive to long term success. When it comes to improving your body composition, however, you should make most of your decisions based on results, not pleasure. Fortunately, there's a middle ground.

You don't have to look at foods as good or bad. The nutritional quality of food runs across a spectrum. When you want to improve your results or break a plateau, your objective is to improve the grade of your food choices. The way you do this is to eat fewer foods that are processed and eat more foods that are closer to their natural state. The trick is to increase nutrient density while controlling the calorie density. Although you could get away with eating low grade food and still lose weight if you kept your calories in a deficit, that doesn't mean it's the healthiest thing to do.

Here's an example: An apple is obviously an "A" grade food. An apple right off the tree gets the highest grade possible because it's in its raw, natural state, untouched by human hands or technology. Next down the rung you have unsweetened applesauce. It consists of nothing but raw apples and water, but it's been pureed, so it's not in its most natural state anymore and is

therefore relegated to a "B" (still a good grade, mind you). Turn it into apple juice and you're down to a "C." Then if you add sugar (sweetened applesauce or apple drink), now you're down to a "D." Finally, if the apples eventually become an apple pie, now you're down to an "F". The caloric density has gone up while the nutritional quality has gone down.

Your task is simple: Look for places in your daily menu where you can improve your food grades. Then improve them. If you already have straight A's on your nutritional report card, then you can use other strategies on this list to improve your results.

4. Increase the duration of your cardio training.

Generally, on the *Burn the Fat, Feed the Muscle* program, you'll be doing at least 30 minutes of cardio training per session when your goal is fat loss (unless you're a total beginner, then you might need to start with shorter workouts and build up to 30 minutes). If this doesn't produce results, you can increase your calorie expenditure, and therefore increase your caloric deficit, by extending your duration incrementally five to ten minutes at a time.

Systematically measure the results of each increase on a weekly basis until you find the level where you start to drop body fat at the optimal rate. For most people, 30-45 minutes per session produces excellent results. Cardio (of low to moderate intensity) can be performed even longer, but beyond 45-60 minutes will usually yield a diminishing rate of return. At this point, you're usually better off increasing the intensity or frequency.

5. Increase the frequency of your cardio training.

If you're already doing long cardio workouts, continuing to increase your duration may become impractical and counterproductive. At this point, one option is to increase your frequency. Remember that your total calorie expenditure is a product of intensity times duration times frequency, not just one of those variables alone. A realistic starting point is a minimum of three days per week of cardio training. To break a plateau or increase the rate of fat loss, incrementally add one day per week until you reach six or seven days per week.

Some people believe that daily cardio is excessive. When maintained for months on end, or used as a crutch for poor nutrition, this may be true. But during a fat loss program, as a method of breaking through a plateau and reaching peak physical condition, daily cardio can work wonders for getting you lean quickly. In fact, almost all bodybuilders and fitness competitors do cardio six or seven days a week prior to competition. When the competition is over, they return to a moderate frequency of about three days per week.

6. Increase the intensity of your cardio training

The most time-efficient way to break a plateau is to increase the intensity of your cardio training. Simply push yourself to burn more calories in the same amount of time. Of course, you can only increase intensity so much because eventually, you approach the anaerobic threshold. That's the point where if you pushed any harder, you would start to lose your breath and have to decrease your speed or stop in order to recover the oxygen debt you created. In other words, if you push too hard, too soon, you'll "bonk" and won't last very long. If you've been working at a low or moderate intensity, then you have plenty of room to increase. If you're already training at the high end of your target heart rate, then you'll need to use another strategy.

7. Incorporate high intensity interval training or sprint work into your cardio program.

Interval training is a type of cardio where you push yourself very hard for short bursts or sprints (work intervals), then you slow down for a short period (recovery intervals). During the work interval, you push past your normal heart rate zone (into the 85-100% zone), then you reduce your intensity just long enough to recover and catch your breath and repeat these intervals for a specified duration or number of rounds.

Using this method, you can get a very high calorie burn in a fairly short period of time. As little as 20-25 minutes of intervals can burn enough calories for a significant fat loss benefit. Even briefer interval workouts have proven fitness benefits. Another benefit of interval training is that it increases your metabolic rate so you continue to burn calories *after* the workout is over. The higher the intensity, the greater this post-exercise "afterburn" effect. In Chapter 16, you'll learn more about how to structure interval training workouts for maximum effectiveness.

8. Change the type of cardio training

If you have a favorite mode of exercise that you know is particularly effective for you, then by all means stay with it and change other variables to break out of your rut, but if you have no preference, then try a change in exercise. Your body has an incredible ability to adapt to anything you throw at it. That's why variation can be an effective way to break a plateau. For example, if you've been walking, change the type of exercise to stair climber, elliptical machine or stationary bicycle. Try an intense aerobics, kickboxing or boot camp class.

Switching to more intense forms of cardio will obviously burn more calories, but sometimes a change alone can be the stimulus for reaching a new low in body fat. Changing your workouts can also prevent boredom and this can improve long term compliance. Remember though, if

you're getting good results with a certain type of exercise, don't change it just for the sake of variation.

9. Do double cardio.

Cardio twice a day? Am I crazy? Well, there's no question that two workouts a day is an extreme strategy that's not absolutely necessary nor is it practical for most people who aren't athletes. It's simply a tool you can use for short periods of time to break a plateau or to get extremely lean.

Many bodybuilders and figure athletes use double cardio before competitions and swear it's the one thing that gets them through any plateau and more importantly, gets off the last bit of stubborn fat. It's also an appropriate technique to use when there's a deadline and you need maximum fat loss in a short period of time. The benefits of double cardio include an incredible boost to the metabolism and an enormous calorie burn.

If you use double cardio, use it with caution. Don't over-do the intensity at every workout and don't stay on double cardio for long. This is a competition-level peaking or plateau-breaking strategy, not the type of thing you do year-round.

How to use a weekly progress chart

In the appendix, you'll find a copy of the *Burn the Fat, Feed the Muscle* weekly progress chart. Feel free to make additional copies for your personal use, or simply create your own chart using a spreadsheet such as Microsoft Excel.

Your progress chart has columns for the date, body fat percentage, total weight, lean body mass, fat weight, and the weekly change in each. If you're using skinfolds as your testing method, you can also include columns to track your skinfold measurements (in millimeters). That will give you information on where you store most of your fat and where you are losing the most and least fat. Seeing the previous skinfold measurements also helps the tester improve the accuracy of each test.

The most common sites are bicep, tricep, iliac crest (hip bone), upper back (subscapular), side of chest, thigh and abdominal. Which skinfold sites you use depends on which body fat formula you choose. Most formulas use only three or four sites. If you're using an Accu-measure caliper, then you only need to record one skinfold on your chart - the iliac crest - and you can disregard the columns for the other skinfolds.

When you begin your program, weigh yourself and have your body fat measured. Then fill in the first row on your chart, including the date, your starting bodyweight, body fat percentage, and lean body mass. You can also take circumference measurements if you choose. Every week, check your weight and body fat again and update your chart. Using the lean body mass calculation you learned in Chapter 3, figure out how many pounds of fat and lean body mass you have. Then record the results on your chart and calculate the change in each.

How to weigh yourself the right way

The scale by itself can be misleading. However, in conjunction with skinfold testing to measure pounds of fat and pounds of muscle, your body weight provides you with crucial information.

To get the most consistent weigh-in, always weigh yourself under the same conditions. Use the same scale on the same day at the same time of day wearing the same amount of clothes. If you weigh yourself with shoes, then weigh yourself with shoes every time. If you weigh yourself naked, weigh yourself naked every time. Remember, your LBM and fat weight amounts will be correct only if your weigh-in is correct. Call this your official weekly weigh-in. I recommend Mondays because that tends to keep you in check on the weekends, the time that most people are liable to fall off the wagon.

Weighing yourself every day is optional. First, you won't see significant changes in *body fat* on a day-to-day basis. Second, your *body weight* can fluctuate greatly due to your hydration level. Daily fluctuations can range anywhere from two to five pounds or more just based on water weight. You'll see a statistically significant difference every seven days, so an official weigh-in once a week is ideal. If you're an analytical type, you can certainly weigh yourself daily to provide more data points. However, be sure to use that data to chart the trends or moving averages and don't get overly concerned with day-to-day fluctuations.

How to calculate muscle loss or gain

By keeping track of changes in your weight, body fat, and lean mass over time, you can determine if you've lost, maintained or gained muscle. This information will reveal whether your exercise and diet program is working or if you've hit a plateau and need to make changes.

To determine changes in body composition over time, you simply subtract your previous weight, body fat, and lean mass from your current weight, body fat, and lean mass. You record this information on your progress chart and then decide what changes, if any, need to be made.

Example:**Week one:**

Weight: 194 pounds (88.2 kilos)

Body fat: 21.1%

Fat weight: 40.9 pounds (18.6 kilos)

Lean mass: 153.1 pounds (69.6 kilos)

Week two:

Weight: 192 pounds (87.2 kilos)

Body fat: 20.5%

Fat weight: 39.3 pounds (17.8 kilos)

Lean mass: 152.7 pounds (69.4 kilos)

Change in weight: -2 pounds (-.9 kilos)

Change in body fat: -.6%

Change in fat weight: -1.6 pounds (-.7 kilos)

Change in lean mass: -.4 pounds (-.18 kilos)

In this example, our subject lost two pounds in one week. By taking a body fat measurement, we can see that 1.6 pounds of the weight loss came from fat, and .4 pounds came from lean body mass.

These results are fairly typical. They're not bad, but not ideal either, because .4 pounds of lean mass was lost. It's usually very difficult to lose more than two or three pounds per week without losing some lean body mass (unless you are very overweight, in which case slightly greater fat loss is more common). Seeing the fat mass and lean body mass numbers on a chart makes the case for slow and steady weight loss even more clear.

Why you should weigh yourself and measure body fat on a weekly basis

Some experts feel that weekly body fat testing is too often. They argue that weekly changes may be as little as .5% or less. That may be a valid point. However, unless you get frequent feedback, you could be wasting valuable time by continuing to travel in the wrong direction. As an analogy, if a plane or ship strayed even a few degrees off course without making a quick adjustment in direction, that small deviation would grow larger and larger over time until eventually, it could end up hundreds of miles off course. Don't let this happen to you. Measure your progress often and make course corrections as often as necessary.

What a decrease in lean body mass tells you

As you fill out the rows in your progress chart each week, keep an eye on your LBM, especially the trend over time.

Don't panic if you see an initial drop in LBM. Nearly everyone on a calorie- or carbohydrate-restricted nutrition program will see substantial water weight losses, especially in the beginning. Because muscle is mostly water, a water weight loss will be reflected in your LBM number. You cannot measure water weight, muscle weight and fat weight separately with a skinfold test. When you start your program, chalk up this initial LBM drop to water weight and don't be overly concerned.

Water balance can affect your weight in the opposite direction too. Your muscles are like sponges for carbohydrates and water. If you eat more carbohydrates one day than usual, and also increase your fluid and or sodium intake, it's not uncommon to see an increase in bodyweight of three to five pounds – especially if you were dehydrated or on low carbs. Your chart will show a several pound gain in LBM, but obviously, that overnight weight gain wasn't solid muscle. This simply reflects glycogen and water in the muscles. In bodybuilding lingo, you “filled out.”

This is why you must be consistent with your weigh-ins and why you shouldn't panic if you see a small drop in LBM. If your LBM continues to drop week after week in any significant amount, then there may be cause for concern. A continual *downward trend over time* in your LBM number clearly shows that you're losing muscle tissue.

Look closely at your ratio of fat lost to lean mass lost. If you lose more lean mass than fat, that's usually a sign that some of the weight was muscle. For example, if you lose 4 pounds in one week with 1.8 pounds from fat and 2.2 pounds from lean mass; don't pat yourself on the back for losing more weight than average - you lost more LBM than fat.

Analyzing the data and adjusting your approach

For most people, results come steadily at first, but then become increasingly difficult and sporadic. The leaner you get, and the closer you get to your ultimate genetic potential for physical development, the slower your progress will become and the more your body will resist changing. Many people make steady progress for weeks or months at a time, then suddenly hit a plateau for no apparent reason.

If you're stuck, this is simply your body's signal that it has adapted to the stresses you've been imposing on it. You now have an entire arsenal of techniques you can use to blast through to the

next level. The beauty of a progress chart is that the instant you're stuck, it graphically shows you the data you need to decide what change to make. By watching for changes in body fat, weight, and lean mass, and reconciling this with your past week's training and nutrition, you'll know exactly what to do next.

Your progress chart is also great motivational tool, because nobody likes to see a blemish on their weekly "report card." Your progress chart keeps you accountable to yourself. If you also share your chart with someone else, whether that's a coach, trainer, friend or family member, then you have double the accountability and that will help you stick with your program better.

Based on each week's results, adjust your cardio, weight training and nutrition, if necessary. Each time you make a change, watch very carefully for what happens every day during the following week. This will heighten your sensory acuity. If you develop a keen eye for changes in your body based on changes to your nutrition and training, you'll eventually become a master. You'll understand exactly how your body responds and you'll know exactly what to do, every time, to get results and break plateaus. It may eventually reach the point where you don't have to count, weigh, or measure anything; everything becomes instinctual.

Interpreting your progress chart

There are many outcomes that can result from different combinations of nutrition, training and lifestyle. Your weight, body fat and lean mass could all rise or fall. This final section of the chapter lists every possible outcome you may encounter on your fat loss journey and the action steps you should take when each occurs.

Lean mass stays the same and body fat decreases

Fantastic! Your nutrition and training program is working as planned and you're on your way to reaching your goal. Don't change anything. Keep up the good work!

Lean mass stays the same and body fat stays the same

Nothing is happening either way; you are in energy balance, so you must create a caloric deficit. First, double check your nutrition compliance and track calories carefully. Then, increase your calorie burn from cardio. You can increase intensity, duration or frequency, depending on the volume of your current cardio program. If you don't lose body fat within the next week, then you can reduce your daily caloric intake systematically by 100-200 calories at a time, provided you do not drop below your maximum allowable caloric deficit.

Keep your nutrient ratios the same unless you've been stuck for more than two weeks. If you've been on the program for months and you've been stuck more than two weeks, you might want to experiment with a moderate or low carbohydrate diet and carbohydrate cycling (see chapter 12 for details).

Lean mass stays the same and body fat increases

You're in a calorie surplus. You're eating more calories than you're burning and storing it as fat. Double-check your nutrition compliance and track calories carefully; you may have underestimated how much you ate. Reduce your daily caloric intake by 100-200 calories. Keep your nutrient ratios the same and keep your food choices clean and free of processed foods. Recheck your body fat in one week. If it hasn't decreased, increase the intensity of your cardio. If your cardio volume is low, you can also increase the frequency or duration of your cardio sessions.

Lean mass decreases and body fat decreases

You are losing body fat, which is good, but you've also lost some lean mass. If this is the first time you've lost LBM, it may be water weight and nothing to worry about. If this is a recurring pattern and you've been losing LBM every week for more than two weeks in a row, you're losing muscle tissue and you need to eat more, at least temporarily. Make sure your protein intake is adequate. Increase your daily caloric intake by 100-200 calories, or increase your calories all the way to maintenance once every fourth day (cycling method), while continuing with your current training program. Be certain that your weight training is consistent and that each workout is intense, focused and progressive in nature.

Lean mass decreases and body fat stays the same or increases

It's unlikely that your LBM will decrease and your body fat will increase in the same week. Double-check your body fat testing and scale accuracy and consider that this measurement could be an anomaly. If this outcome is confirmed, you may be in a hormonally sub-optimal and catabolic state. This may occur due to overtraining, inadequate nutrition or ignoring important lifestyle factors such as adequate sleep and stress control.

Stay on a consistent eating plan without missing meals. Make sure your protein intake is adequate. If you lost no weight, you can increase cardio slightly and or decrease calories slightly, unless your calories were already very low.

Make sure you're consistent with your weight training. Make the weight training sessions short and intense, then get out of the gym and rest. Be certain you are recovering adequately from your training. Consider stress management techniques.

Lean mass increases and body fat increases

You gained muscle, which is good, but you also gained fat, which is not good. This is common among off-season bodybuilders - it's called bulking up, where the athlete gains unwanted fat while gaining muscle. If this happens, you are clearly in a calorie surplus. If your goal is to burn fat, you need to decrease calories significantly to establish a deficit. Try dropping 200 - 400 calories a day. Watch your weight during the week. Re-measure in one week. If your body fat hasn't started dropping, then repeat.

Keep your compliance level high, track calories carefully and keep your eating relatively clean and free of high fat and high sugar junk foods. If your training volume was low, you can also increase the intensity, frequency or duration of your cardio.

Lean mass increases and body fat decreases

This is unlikely to happen, except for beginners, genetically gifted individuals (the pure mesomorph body type) and sometimes for ectomorphs who have highly efficient metabolisms (these body types are explained in the next chapter). If you do gain muscle and lose fat in the same week, terrific! Your results are exceptional. You are leaner and more muscular. Don't change anything. Keep up the good work; you're on your way to reaching or even exceeding your goal.

Lean mass increases and body fat stays the same

Good job, you've gained muscle without gaining fat! This is the ideal outcome for a muscle-gaining program. You are probably in a caloric surplus, at least some of the time. If you also want to reduce your body fat percentage, you'll need a calorie deficit, which you can accomplish by decreasing your calories slightly, while keeping your training and activity level the same. If your cardio volume has been low, you can also increase the frequency, intensity or duration of each session.

Conclusion: Let your results dictate your approach.

I always recommend letting your results dictate your strategy. If you can eat 60-70% of your calories from carbohydrates and you get ripped - great, keep eating all those carbohydrates, even

if some expert told you that low-carb is more effective. If you can eat large meals late at night and you still get leaner, great - keep doing it. If you can get lean with just nutrition and weight training and almost no cardio – fine, don't do any cardio. Don't fix it if it's not broken!

Although bodybuilding-style nutrition programs like *Burn the Fat, Feed the Muscle* may seem highly structured and even strict at times, the truth is, the results you produce each week are the only true measure of whether you've made the right choices. Results are what count. If you're getting lean while breaking every so-called rule in the book, then there's no reason to change. The ends justify the means, provided of course, that everything you're doing is healthy and sustainable.

You are a unique individual, so if you can customize, then do customize. Don't get locked into freedom-restricting formulas like so many diet programs prescribe. When you discover an approach that works for you, I'd suggest you disregard the comments of people who disagree with what you're doing, and judge your success only by your weekly progress report. You can't argue with results.

By following this system – taking continuous action, getting into a feedback loop, being flexible, having an open mind and being willing to experiment, you will, through an evolutionary learning process, figure out your body type and develop your own personal formula very quickly. Once you've discovered your personal formula by using body composition measurement, performance feedback and progress charting, it will always be there for you for the rest of your life, whenever you want to go back to it.

In the next chapter, you'll learn some vital information about customizing your fat loss program. This information will empower you to get more results with fewer struggles, because you'll know you're eating and training the right way for your body type and metabolism – not for someone else. In addition to nutrition and training action strategies, you'll also learn the mindsets and attitudes necessary to get you through tough challenges that cause most other people to quit. These concepts are so valuable, you'll be able to apply them not only in your fat burning or muscle building endeavors, but also in any other area of your life.

Chapter 5: Metabolic Individuality and Your Body Type: Doing Your Best With What You've Got

"Some people are born with the propensity to become fatter than others. There are naturally skinny ectomorphs and naturally fatter endomorphs. Some individuals are given more fat cells by heredity, some fewer. But the set point is affected by environment and behavior as well as heredity. You can vary your set point considerably depending on what and how you eat, as well as what kind and how much exercise you do."

—Neal Spruce, bodybuilder, author, speaker

"Whatever you have, you must make the most of it. Rest assured that you can transform yourself, no matter where you started from. The most important body part is the mind. With the will and know-how, you can perform near miracles."

—Stuart McRobert, author of *Brawn*

No two people are created equal

In the Declaration of Independence it says, "All men are created equal." You could interpret this in different ways depending on the context. If you're referring – as Thomas Jefferson was – to unalienable rights such as life, liberty and the pursuit of happiness, then almost everyone would agree. However, if you're referring to physical and metabolic characteristics, then nothing could be further from the truth. It would be more correct to say that no two people are *ever* created equal.

There are seven billion people on our planet today and no two are exactly the same. Just as individuals are born with various eye, hair and skin colors, each person also inherits different physical and metabolic characteristics that influence how easily they can build muscle and lose body fat. One of the biggest secrets of body transformation is to develop the ability to recognize and understand the uniqueness of your body type and adjust your nutrition, training and lifestyle accordingly instead of blindly following someone else.

The genetic bell curve

Dr. Michael Colgan, the author of *Optimum Sports Nutrition* once said, "As a part of biochemical individuality, people differ widely in their inherited tendencies to accumulate fat." Many people who have struggled to lose weight would certainly agree with that. In physique and strength sports, there are also genetically gifted people who seem to simply touch the weights and their muscles get bigger and stronger.

When I was a beginner in bodybuilding, seeing other people get results more easily than I did was always very frustrating. I was eating *perfectly*; pushing, working, struggling and straining with every bit of energy I could muster for every ounce of muscle I could get. Then one of these "genetic freaks" would come along and pass right by me, without even breaking a sweat. To add insult to injury, it seemed like they were breaking every training and nutrition rule in the book. When some of them took steroids on top of their hereditary gifts, their muscles exploded literally overnight!

The law of averages dictates that the distribution of body types will always be statistically predictable based on percentiles. This phenomenon, known as the genetic bell curve, is very similar to the distribution of grades among students. 60% of students will receive passing grades (B's, C's and D's), 20% will fail, and 20% will get A's.

With body types, most people (about 60% of the population by my estimate), are genetically average. If you fall into this middle category, you'll respond favorably and predictably to just about any balanced and sensible nutrition and training plan. All it takes is starting and sticking with a well-constructed training program and covering all the nutrition essentials. This includes adequate an intake of calories, protein, essential fatty acids, vitamins and minerals, fiber, and water as well as eating a wide variety of healthy foods.

The 20% of the population on the right side of the curve represent those genetically above average. This lucky group will lose fat quickly and easily, even if their nutrition and training aren't quite perfect. They seem to have more leeway and they can get away with fewer workouts and more cheat days. On the extreme right edge of the curve, you have the people who appear to be eating chocolate and donuts all day long, they hardly work out at all and they have six-pack abs. These are the genetically gifted, or the genetic freaks, as I endearingly call them.

The remaining 20%, located on the left side of the curve, are the genetically below average. These people have a more difficult time losing fat and need to work harder and be more patient than others. Getting results may require a stricter nutrition program and a more disciplined approach to training. The further to the left side of the genetic bell curve you are, the more challenging it will be to improve your body composition. At the farthest edge, you find a small handful of genetically disadvantaged people who have an immensely difficult time getting lean and muscular.

The roll of the genetic dice

Some people have the genetic card deck stacked against them, while others were dealt a royal flush. You can't deny that it's much easier for some people to burn fat and build muscle than it is for others. Nor *should* you deny it. An intelligent person will honestly assess their body type to

the best of their ability and then adjust their training, nutrition and goal deadline accordingly. To do otherwise would be counterproductive; it would also be denial.

I've found that the best approach is "realistic optimism." Not everyone has the biological raw material to become a Mr. Universe or a top fitness model. Nor does everyone have the physical gifts to become an Olympic sprinter, an elite marathon runner, or a world-class swimmer. However, *everyone can improve his or her physique above and beyond where it is today*. One of your goals should be to achieve your personal best, while avoiding comparisons to others who may have totally different genetics than you.

The 10 major genetic variables that affect fat loss, muscle growth, strength and athletic ability

There are 10 major genetic variables that can affect your ability to lose fat, build muscle, increase strength and reach high levels of athletic achievement. If you study these variables, it will give you a better understanding of how nutrition and training can affect you differently than other people.

1. Basal metabolic rate

Your basal metabolic rate (BMR) is the amount of energy (number of calories) you burn at rest just to maintain normal body functions such as breathing, circulation, digestion, and so on. Genetically gifted people are like cars that idle too fast. They burn off more fuel even while sitting still. When they become active, they move fast and burn fuel at an enormous rate.

2. Number of fat cells

Some people are born with more fat cells than others, and women have more fat cells than men. Scientists once believed that fat cells couldn't increase in number after maturity, only in size. We now know that fat cells can increase in both size (hypertrophy) and number (hyperplasia). Fat cells are more likely to increase in number when a large amount of weight is gained due to excess calorie intake, as well as during pregnancy.

A baby usually has about 5-6 billion fat cells. This number increases naturally during early childhood and puberty, and a healthy adult with normal body composition has about 25 - 30 billion fat cells. A typical overweight adult has about 75 billion fat cells, but in the case of severe obesity, that number can be as high as 250 - 500 billion!

The number of fat cells you currently have cannot decrease except through liposuction. However, liposuction is an invasive procedure with major risks. It's also nothing more than

cosmetic surgery, not a permanent fat loss solution, because new fat cells can easily be formed. Fortunately, what can change is the *size* of the fat cells. With improvements in nutrition, training and lifestyle, even someone with a large number of fat cells can shrink all of them, thereby becoming dramatically leaner.

3. Limb length

Some people were born with long legs and long arms, others with short legs and short arms. Your limb length can affect the way your body's shape and symmetry appears. It can also influence your strength, athletic prowess and ability to gain muscle mass. Long limbs mean long levers, which can create a mechanical disadvantage when performing certain exercises. Some people were born with fantastic leverage and that's why they're naturally strong.

4. Joint size

People may be large-boned, medium-boned or small-boned. Many people complain of being big-boned, citing that as a reason they're overweight. The truth is, joint size affects the way your body is shaped, but *it has nothing to do with body fat or your ability to burn it*.

You can measure joint dimensions using instruments called anthropometers. For circumferences, you can use a tape measure. A simple test for joint size is to wrap your hand around your opposite wrist. If your thumb and middle finger overlap, you are small jointed (usually 6 to 7-inch wrists); if your thumb and middle finger touch, you are medium jointed (usually 7 to 8-inch wrists); if your thumb and middle finger do not touch, you are large jointed (usually 8 inches or more in wrist circumference).

5. Muscle insertions

The muscles insert onto the same bones in all humans; however, the exact point of insertion can vary. Even a tiny difference in insertion points can create large increases in mechanical advantage. This partly explains why certain people are naturally stronger than others - they have better leverage because their muscle insertion points are further from the origin points.

6. Number of muscle fibers

Like fat cells, you were born with a pre-determined number of muscle fibers. Muscle fibers can get larger, in a process called hypertrophy, or they can get smaller, which is known as atrophy. Unlike fat cells, muscle cells cannot multiply in number. Hyperplasia, the process of splitting existing muscle fibers into new fibers, has been hypothesized but never proven in humans. This

means that if you were born with a large number of muscle fibers, you will have a greater potential for developing muscle size than someone with fewer fibers.

7. Muscle fiber type

Within each person's predetermined *number* of muscle fibers, there are also different *types* of muscle fibers. Some are suited to endurance activities (slow-twitch fibers) while others are suited for strength, power and explosive activities (fast-twitch fibers). The differences in each person's ratio of muscle fibers may explain why some people make better endurance athletes while others gravitate to strength or power sports. Knowing about differences in muscle fiber types could also give you some clues for more effective program design, including the ideal number of sets and reps.

8. Gastrointestinal organ size and digestive capabilities

According to Roger Williams, author of *Biochemical Individuality*, individual variation in organ anatomy can be immense and this can have practical implications. The cross sectional area of a person's esophagus can vary at least fourfold and this could affect the amount of food one can swallow. Human stomachs also vary in size and some can hold 6 to 8 times as much as others. The implications are obvious. The length of the intestinal tract can vary by as much as 15 feet and the shape and path of the intestines and colon can be highly diverse between individuals.

On top of the anatomical differences, some people have highly efficient digestive systems capable of greater absorption and utilization of nutrients. Gastric juices such as pepsin and hydrochloric acid may vary, as can bile secretion. There are also differences in enzyme and endocrine activities from one person to the next.

9. Food allergies and insensitivities

Some people are born with the tendency toward food allergies or sensitivities. Lactose intolerance (an inability to properly digest dairy products) or gluten intolerance (an allergy to the protein found in wheat and certain other grains), are two common examples. Through years of trial-and-error experience, most people instinctively favor certain foods while shying away from others. Some people become vegetarians while others become carnivores simply because of the way each food or diet makes them feel. Other people, unfortunately, ignore their body's signals and suffer the consequences, from mild gastrointestinal disturbances to more serious health problems.

10. Carbohydrate tolerance and insulin response

Some people can handle a high carbohydrate diet better than others. Carb intolerant individuals often suffer from blood-sugar related health disorders including type-2 diabetes if they fail to adjust their nutrition properly. Many obese men and women are also insulin resistant.

After eating concentrated doses of carbs, blood sugar rises rapidly in these people, which in turn causes the release of excess insulin. High levels of insulin in the bloodstream are lipogenic and anti-lipolytic, which means that fat storage is increased and fat release from the adipose cells is suppressed. When there are wild swings in blood sugar this can also lead to problems with appetite regulation.

This explains why one person can stay lean, healthy and energetic on a diet high in bread, pasta, potatoes and other high carb foods while another may gain fat and suffer from mood swings, low energy and health problems eating the same thing.

The importance of understanding variations in body type

Judging from this list of ten genetic variables, you might think that the only sure-fire road to athletic prowess or extreme leanness is to choose the right parents. But even if you believe that Mother Nature dealt you a bad hand, you can take consolation in the fact that fat loss success is not determined primarily by genetics. The level of body fat you have today is based on a complex interaction between genetic, behavioral and environmental factors. The majority of these factors are entirely under your control.

Success doesn't always come from holding a good hand of genetic cards, but in playing a poor hand well. If you're on the below average side of the genetic bell curve, then you have to accept that getting lean might be more challenging for you. You'll need to meticulously tailor your nutrition and exercise program to your body, while ignoring what the genetic freaks are doing, keeping in mind that almost *anything* will work for them.

The good news is that you can get fantastic results, regardless of your genetics, as long as you "know thyself" and then follow the right nutrition and training strategies for your body type.

How to identify your body type with somatotyping

In the 1930s and 1940s, American psychologist William Sheldon became engrossed with the study of human body types. Sheldon's primary objective was to discover how variations in human physiques were related to personality types or temperaments such as introversion and

extroversion. As one part of his extensive research, which included studying more than 4000 photographs, Sheldon pioneered a classification system for body types known as somatotyping.

Sheldon identified three basic body types: endomorphs, mesomorphs and ectomorphs.

Endomorphs are the fat retainers. Characterized by soft roundness and large joints, endomorphs often have difficulty in losing body fat. *Mesomorphs* are predominantly muscular types. They are lean, hard, naturally athletic and gain muscle with ease. *Ectomorphs* are the lean, skinny types. They are thin and bony, with fast metabolisms and extremely low body fat.

Rating body types

Although there are three basic categories, pure body types are rare. Very few people are 100% of one body type and 0% of another. Usually there is a mix of two or even all three types. However, most people gravitate toward one type.

To more accurately classify people, Sheldon developed a 7-point scale to quantify the degree that each person has characteristics of each body type. He said that an estimate could be made with visual inspection (the photoscopic method). Later advances in somatotyping suggested that measuring body composition, muscle girths, height-weight ratios and bone dimensions would give a much more accurate, scientific and objective rating.

Some of the newest somatotyping systems have extended the numerical scale above 7 because physique development today has gone far beyond Sheldon's original research. Using one of the newer somatotype scales, one applied sports anatomy textbook rated Mr. Olympia Ronnie Coleman as a 1-13-1! Now that is what you call a genetic freak! However, the 7-point scale is still the system that's referenced most often today.

The first number in the somatotype score ranks the endomorph component; the second number the mesomorph, and the third the ectomorph. For example, an extreme endomorph who is very large, round and overweight would score 7-1-1:

Endomorph 7
Mesomorph 1
Ectomorph 1

A world champion bodybuilder who is both highly muscular and extremely low in body fat might score 1-7-1:

Endomorph 1
Mesomorph 7
Ectomorph 1

Combination body types

Combination body types are more common than pure body types. For example, someone who gains muscle easily, but also tends to gain fat along with the muscle is an endomorphic mesomorph (endo-mesomorph). This body type is typical of football linemen, heavyweight wrestlers, shot-putters and powerlifters. This type of person has high levels of muscle, but it is often covered with a layer of fat. Someone with this body type might score 4-6-1:

Endomorph 4
Mesomorph 6
Ectomorph 1

Another example is the ectomorphic mesomorph (ecto-mesomorph). This is the type of person who is very lean with some substantial muscle development on a tall and linear frame. Basketball players often have ecto-mesomorph body types. An ecto-meso (think Michael Jordan) might score 1-4-4:

Endomorph 1
Mesomorph 4
Ectomorph 4

The lines between these body types are obviously a bit blurry and even somewhat arbitrary, so the most important question is, how do you know your *predominant* type? Let's take a closer look at the characteristics of each body type so you can classify yourself more accurately.

The ectomorph

The ectomorph body appears linear or elongated, with delicate joints and a small waist. Ectomorphs are naturally lean and almost never have trouble with excess body fat during their entire lives. Ectomorphs have overly efficient metabolisms. In other words, they waste excess calories as nervous energy, body heat or high levels of unconscious NEAT, so they sometimes appear to eat whatever they want without gaining fat. Many can stay extremely lean while doing little or no exercise. The downside is that ectomorphs also have a very difficult time gaining muscle.

If ectomorphs have any weight fluctuations, it's usually weight loss, especially if they skip meals or fail to keep up their caloric intake. When ectomorphs increase their activity level, they usually drop body weight and body fat very fast – sometimes too quickly.

Many ectomorphs start weight training or bodybuilding to fill out their skinny frames. Although ectomorphs rarely, if ever, develop the muscle size of a pure mesomorph, with hard work and persistence, most of them can overcome their limitations and build an impressive physique while maintaining excellent muscle definition. However, if they quit training or allow their calories to drop too low for too long, they'll eventually slide back toward the level of thinness where their body is naturally inclined.

Characteristics of ectomorphs

- Long limbs; linear
- Small joints; small-boned
- Small waist; narrow shoulders
- Angular, projecting bones
- Naturally lean; low levels of body fat
- Often call themselves "hardgainers"
- Low strength levels prior to starting a training program
- Fast metabolism; they burn up everything they eat
- Metabolize carbohydrates without difficulty – high carb diets are usually ok
- High energy levels
- Tendency to be overactive and restless
- Natural born endurance athletes; successful at distance/endurance sports
- Sometimes hard to maintain weight
- Extremely hard to gain weight
- Sometimes insomniacs
- Responds best to low-volume, brief, infrequent, heavy weight training
- It takes years of hard weight training and heavy eating to overcome this body type

Since you're reading this book about burning fat, the chances are good that you're not an ectomorph, because ectomorphs are the people who lose fat without even trying. However, it is possible to have a combination body type with a small ectomorph component. For example, some people have skinny legs, but they also have a large belly. Others have small wrists and a light, delicate bone structure, but they show all the other features of an endomorph such as carbohydrate intolerance and difficulty losing belly fat.

Ectomorph training, nutrition and lifestyle strategies

The common complaint of the ectomorph is: "I've always been too skinny. No matter what I eat, I can never gain weight." Despite the challenge, many ectomorphs have gone on to become muscular after years of consistent weight training and proper eating. If ectomorphs make it as bodybuilders, they're usually the ripped lightweights and middleweights, rather than the thickly

muscle heavyweights. When they retire from competition, they tend to stay very lean and their muscle mass shrinks down a bit in size.

The following guidelines will help maximize results for the ectomorphic body type.

Slow down and reduce stress

Because ectomorphs are thin, hyperactive people with fast metabolisms, the first and most obvious solution is less activity. Like an engine idling too fast, an ectomorph has to keep a foot on the brake just to keep from lurching forward. Conserving nervous energy is important.

Ectomorphs need to get plenty of quality sleep every night and sleep on a regular schedule. Stress reduction techniques can help the ectomorph get better results as well. Deep breathing exercises and meditation can be especially helpful. A classic book about meditation from a scientific point of view is *The Relaxation Response* by Herbert Benson and you can find many others written from spiritual perspectives.

Avoid overtraining

Ectomorphs respond best to brief, heavy, basic weight training programs. Daily training and high-volume workouts are usually counterproductive. The ectomorph has to get in and out of the gym quickly and allow plenty of recuperation between workouts.

Keep cardiovascular exercise to a minimum

Although some people with light, ectomorph bone structures also carry excess body fat, being overweight is not a problem for the ectomorph. The big challenge is gaining or even maintaining lean body weight. That's why cardio should be kept to a minimum and be done mainly for health and conditioning reasons. Twenty to thirty minutes a day, three days a week is usually enough. Extreme ectomorphs might even want to avoid cardio completely.

Keep the calories high and never miss meals

Ectomorphs need calories - and lots of them. They need to eat foods with a high calorie density and also use moderate amounts of healthy fats such as flaxseed oil, extra virgin olive oil, avocados, nuts, seeds, natural peanut butter and fatty fish such as salmon. Skipping meals and not eating enough are cardinal sins for the ectomorph.

Use a diet moderately high in complex carbohydrates

Carbohydrate restriction can be an effective fat loss strategy, but since ectomorphs are already lean and they burn up nearly everything they eat, there's usually no reason to restrict carbs. Approximately 50% of total daily calories should come from carbs in the ectomorph nutrition plan, with about 30% from lean proteins and 20% from fats, give or take a few percent either way.

Pay attention to food quality

People with ectomorph tendencies usually discover that they can get away with eating junk food without ill effects on body composition, so they often do exactly that – eat anything and everything. However, this is not smart because even an ectomorph should be concerned with nutrient density and food quality, not just calories.

Making good food choices isn't just for cosmetic improvements; it's for your health. Never use a naturally lean body type as an excuse to overindulge in junk food, even if you think you can get away with it. Ectomorphs must consider the nutritional value of everything they eat and the effect that food has on their long-term health.

The mesomorph (a.k.a. the “genetic freaks”)

Mesomorphs are naturally muscular and lean with small waists, broad shoulders, medium-sized joints and large, round muscles. They're the natural-born athletes and bodybuilders. Most of them were lean and muscular before they started working out.

For example, Olympic sprinter Michael Johnson is very mesomorphic (5) with muscular arms, shoulders and chest. He also has a moderate ectomorphic component (3) with small joints and very low body fat. There is no sign of endomorphy (1) whatsoever. Johnson would probably score a 1-5-3.

A bodybuilder like Arnold Schwarzenegger is almost pure mesomorph (7) with low body fat and massive muscles. Because of his height and long limbs, he has a small ectomorph component (1.5). He also seemed to get quite bulky in the off-season, indicating a slight endomorph component as well (1.5). I would rate Arnold in his competitive prime a 1.5-7-1.5

Mesomorphs are the genetically gifted people we all love to hate because they gain muscle and lose fat so easily. Some of them don't even seem to train hard or diet strictly at all, yet their bodies respond like crazy.

Characteristics of mesomorphs

- Medium joint size
- Broad shoulders
- Chest dominates over abdominal area (small waist)
- Naturally lean
- Naturally muscular
- Naturally strong
- High energy levels
- Metabolize carbohydrates without difficulty – high carbohydrate diets are ok
- Tendency to partition surplus calories into muscle
- Highly efficient (fast) metabolism
- Gaining strength is easy
- Gaining muscle is easy
- Losing body fat is easy
- Responds quickly to almost any type of training (fast results)
- Natural born athlete (successful at strength and power sports)

Mesomorph training, nutrition and lifestyle strategies

There's not much to say about mesomorph training and nutrition. The ironic thing about mesomorphs is that for many of them it doesn't matter what they eat or how they train, they lose body fat and gain muscle anyway!

Although they're envied by many, mesomorphs do have their downfall: Because they get results so easily, they often tend to coast on their genetics and don't train as hard as they could. As a result, many of them never realize their maximum potential. The gift of good genetics sometimes makes a person complacent.

Often, the less genetically blessed a person is, the more discipline, willpower and determination they develop, and it's this desire and drive that propels them to high levels of physical achievement. Their weakness actually becomes their strength. Of course, a mesomorph with clear goals and a superior work ethic will always shoot to the top and quickly become a superstar.

Here are two tips for the mesomorph to live by:

Don't coast on your genetics just because you can

Because mesomorphs are so genetically gifted, they sometimes have the tendency to cheat on their diet and skip workouts because they can get away with it and still look good. But just

imagine what they would look like if they applied themselves 100%. If you recognize that you're genetically gifted for physique development, then make the most of your gifts. Train and eat to the best of your ability, and you could become one of the best in the world in bodybuilding, fitness or athletics. Even if you don't compete, why not actualize your full potential and become the best you can possibly be?

Pay attention to food quality

Like the ectomorphs, people with mesomorph tendencies quickly discover that they can also get away with eating certain foods without ill effects on body composition, so they often get lax about their food choices. Again, keep in mind that nutrition is not just about looking good; it's about your health. Gorging on junk food just because you can get away with it in the short term is not a good idea. In the best-case scenario, it will limit your development. In the worst scenario, it could compromise your health in the long run.

The endomorph

Endomorphs are soft and round, with medium to large joints. They may have sluggish metabolisms and are predisposed to store fat easily. They are also the types who will tend to gain body fat very quickly if they eat too much or if they eat the wrong types of foods.

Endomorphs must eat clean and healthy almost all the time. Their metabolisms are extremely unforgiving. One or two cheat meals per week seem to be the limit. Poor daily nutrition habits or frequent cheat days always set them back.

Endomorphs usually have a difficult time losing fat with diet alone. Even a nearly perfect diet sometimes won't work well by itself because endomorphs also need the boost in metabolism they get from exercise. A larger volume of cardio – sometimes daily - is almost always necessary for endomorphs to get really lean.

Occasionally, an extreme endomorph (7 on the Sheldon scale) will have a difficult time losing fat even on a well-constructed training and nutrition program. Restricting carbohydrates can sometimes help endomorphs get rid of the last of the stubborn fat. They may also benefit from using a carb-cycling approach that rotates high carb days with low carb days to stimulate their metabolisms while preventing any negative effects of prolonged low carb/low calorie diets. Santa Claus is the archetypical endomorph.

Characteristics of endomorphs

- Naturally high levels of body fat (often overweight)
- Usually large boned; large joints
- Short, tapering arms and legs
- Soft, round body contours (round or apple-shaped body)
- Wide waist and hips
- Waist dominates over chest
- Tendency to partition excess calories into fat (can't get away with overeating)
- Often describe themselves as having a "slow metabolism"
- Slow thyroid or other hormonal imbalances (sometimes)
- Often carb intolerant
- Respond better to higher protein and low (or moderate) carbs
- Extreme difficulty in losing weight (requires great effort)
- Keeping fat off after it is lost is a challenge
- Fall asleep easily and sleep deeply
- Tend to be sluggish, tired and lacking energy
- Tend to gain fat easily as soon as exercise is stopped
- Tend to lose fat slowly, even on a clean, low calorie diet.
- A lot of cardio and physical activity are necessary to lose weight

Endomorph training, nutrition and lifestyle strategies

When it comes to fat loss, a well-planned, strategic approach to nutrition and training is more important for the endomorph than any other body type. The endomorph strategy focuses on high levels of activity to burn calories and boost metabolism and high levels of discipline and consistency in nutritional habits. Most endomorphs also benefit from some degree of carbohydrate restriction with higher amounts of lean protein and healthy fat.

Use a high protein, medium to low carb macronutrient ratio

Endomorphs often have varying degrees of carbohydrate intolerance and insulin resistance, so high carb, low fat diets are usually not the ideal approach. The endomorph nutrition strategy leans toward higher protein and slightly higher fat, with carbs eaten in moderation.

Calorie-dense sources, especially processed and refined carbs that contain white sugar and white flour, tend to cause health problems and lead to fat storage more rapidly in endomorphs because of the way these foods affect blood sugar and the hormone insulin. While carb restriction may help, carbs do not need to be removed completely, as they can be cycled and used strategically around training times to improve energy and recovery.

Do large amounts of exercise

The endomorph must do everything possible to stimulate metabolism continuously and this means combining good nutrition with regular weight training and cardio training. Exercise is mandatory. To diet without exercising means almost certain failure for the endomorph.

Endomorphs almost always need more cardio to lose body fat. Most will lose fat without much difficulty by doing some type of cardio training four to five times per week. Extreme endomorphs often need cardio daily (six or seven days per week), before fat starts coming off at an appreciable rate.

Be more active in general

The natural endomorph disposition is toward taking it easy and relaxing instead of staying constantly in motion. The endomorph likes to kick back in the easy chair, while their ectomorphic or mesomorphic counterpart might “relax” with a 40-mile bike ride, a hike through the mountains or recreational sports.

The best strategy for the endomorph is to get active and stay active. Get up out of your chair at regular intervals throughout the day. Walk everywhere. Take up some sports or recreational activities in addition to your regular workouts in the gym. Get some type of activity daily, even if it's not intense, formal exercise.

Increase your training duration

The process of fat loss all boils down to creating and maintaining a calorie deficit. One of the simplest ways to do that is to burn more calories by increasing the duration of your cardiovascular workouts. Thirty minutes is a good starting point, but for maximum fat loss, most endomorphs will get even better results with 40-45 minutes of continuous cardiovascular activity. In some instances, up to 60 minutes per day may be ideal until a goal is achieved. Once you've reached your goal, you can go back to 20-30 minute workouts for maintenance.

Increase your training frequency

Endomorphs must stay in motion to keep their metabolic engine revved. Think of your metabolic rate as a spinning top. You twist the top and it starts spinning at maximum velocity, but not long after your fingers leave contact with it, the top is already slowing down. Eventually, the revolutions decrease and the top starts to wobble. You have to spin it again before it loses all its momentum and topples over. By spinning it more frequently, the average RPMs stay higher and the top never slows to a wobble.

Your metabolism is the same way. Every bout of exercise “spins” your metabolic rate, but the exercise-induced boost in metabolism doesn’t last long. Building more muscle tissue with weight training can create a long-term increase in metabolism, but the only way to keep the metabolism “spinning” is with frequent and consistent exercise, both resistance and cardio training.

Use metabolism-stimulating exercise

When longer workouts are not an option, do shorter workouts with higher intensity. High intensity interval cardio training burns more calories per unit of time and has also been proven to increase metabolism even after the workout is over.

Weight training exercises that use large muscle groups like the back and legs are extremely effective for burning calories, increasing the metabolism and stimulating the hormones that improve body composition. Compound full body and lower body exercises (squats, deadlifts, lunges, pull-ups, rows, presses, and so on) are particularly useful for this purpose.

Activities like yoga, pilates and tai chi have some fantastic benefits, including flexibility and stress reduction, but for the endomorph, this is not the ideal way to get leaner. If you enjoy them, do them as a supplement to your weight training and cardio, but not in place of them. For maximum fat burning, the top priority should be the exercises that burn the most calories, especially when your time is limited.

Avoid over-sleeping

Sleep is very important for recovery and overall health, but endomorphs should avoid excessive sleep and become early risers. If you’re an endomorph, the chances are good that you’re not an early riser and you often have the urge to hit the snooze button and go back to sleep. Resisting this urge and getting up early for training is one of the best strategies for endomorphs to boost their metabolism and get a positive start to the day.

Watch less TV

Any pastimes or hobbies that glue your rear end to a couch or easy chair are not the preferred option for an endomorph, especially if you also spend 40 hours or more behind a desk each week. This means you should replace as much TV watching as possible with physical recreation or exercise - unless your workout machine is parked in front of the TV and you're on it.

Always be on the lookout for something to motivate and inspire you

Endomorphs sometimes lack motivation, especially in the beginning. The solution is to be on constant lookout for anything and everything to inspire you. Read biographies, watch sports or the Olympics, get a training partner, read motivational books, listen to inspiring audio CDs, hire a trainer or personal coach, re-write your goals every day, go watch a bodybuilding or fitness contest or even enter a body transformation contest yourself. Do whatever it takes to stay mentally pumped up!

Keep free meals to a minimum

Endomorphs have very unforgiving metabolisms. They cannot eat whatever they want whenever they want and get away with it. Limiting free meals (“cheat” meals) to once or twice per week is usually the prudent approach. Poor daily habits or entire cheat days usually set the endomorph back. Free meals are best reserved for special occasions or as well-deserved rewards after an entire week of consistent training and nutrition.

Be consistent

Except for occasional planned layoffs and vacations, the endomorph can’t relax his efforts or it will take a long time to achieve big goals. Endomorphs must be *very consistent* and disciplined in eating and training habits 7 days a week, 52 weeks a year. spurts of starting and stopping will never work for the endomorph. If you’re an endomorph, you must get your momentum going and keep it going.

Be patient

Endomorphs lose body fat more slowly than the other body types. However, endomorphs will reach their body composition goals *just like everyone else*, it may simply take a little longer. Patience is a virtue that all endomorphs have to cultivate.

Make a lifelong commitment to fitness

A lifelong commitment to training is important for everyone to enjoy great health, but for the endomorph, exercise is essential just to maintain a desirable body fat level. Every time you stop working out for an extended period, you can be sure the body fat will slowly start to creep back on. Fitness is a lifestyle, not a 12-week program, and endomorphs need to remember this to avoid losing what they worked so hard to achieve.

The most accurate measure of your natural body type

There was a major drawback to the Sheldon method; it was a genotypic system, which means that it was presumed that your body type was genetically determined and could not be changed. That is only partially true. We all have a natural body type that is genetically influenced. In the absence of environmental or behavioral changes that could alter it, we will always gravitate toward our inherent body type.

Certain characteristics such as joint size and height are also, for the most part, unchangeable. However, it's obvious that our physiques can change as a result of training, nutrition and lifestyle modification. This led researchers to propose improvements to the classic somatotyping methods, including one's current body composition as part of somatotype assessments.

J.E. Lindsay Carter, a physical education professor from San Diego State University and Barbara Heath, an anthropologist from the University of Pennsylvania, explained this "new somatotyping" in their textbook, *Somatotyping: Development and Applications*. In this revised phenotypic system, they acknowledge that your body type can change as a result of diet, exercise, growth and aging.

That's why you can't always jump to conclusions about a person's natural body type based strictly on how they *currently* look. If someone has been training for years, then how they look *now* might not be the most reliable indicator of their inherent body type. How they looked *before* they started training is much more revealing. There's an inside joke among bodybuilders who look great despite inheriting less than ideal genes: "The harder I work, the better my genetics appear."

How well you respond to a training and nutrition stimulus is also a good indicator of your true body type. If you grow muscle like crazy and the fat melts off with ease as soon as you start any nutrition or training program, you have genetic gifts; you have the mesomorph's muscle-building qualities and the ectomorph's fat-burning qualities.

What happens when you stop training is also a good indicator of your natural body type. Do you retain your muscle gains (mesomorph) or do you atrophy quickly (ectomorph)? Does the body fat stay off (ectomorph or mesomorph) or do you regain fat quickly the minute you stop training (endomorph)? Pay close attention to the effects of de-training on your body and you'll have yet another important clue for figuring out your inherent body type.

Somatotype vs. metabolic type

I'm often asked whether somatotype (endo, meso or ecto) is the same thing as metabolic type. In the Sheldon system, the answer is no, because classic somatotyping refers to the *physical body structure you see externally*, as you could assess with a photograph, tape measure or anthropometer. Metabolic type usually refers to *biological processes that take place internally*. How well you can process carbohydrates and manage blood sugar is particularly important.

The recent advances in somatotyping theory suggest that you should consider both internal and external characteristics for a more complete indication of your body type. For example, endomorphs would be classified as people with large joints and a soft, round body shape, who *also* have metabolic traits that predispose them to storing and holding excess body fat.

Some health experts propose metabolic typing as a method to determine if you're a protein type, carb type, or somewhere in the middle (a mixed type). Metabolic typing is not a perfect science and there are a lot of fallacies about the concept. Nevertheless, it can be useful in helping you recognize that as a part of biochemical individuality, people differ widely in their ability to process macronutrients, especially carbohydrates. This is different than somatotype in the classic sense. It's helpful because it gives us one explanation for why some people thrive on high carb, low protein, low fat diets while others get leaner, feel better and stay healthier on high protein, high fat diets with lower carbohydrates.

Although metabolic characteristics can be numerous and complex, in the ***Burn the Fat, Feed the Muscle*** system, metabolic type is simplified into two questions: "Are you carb tolerant or carb intolerant," and "If you're carb intolerant, to what degree?" By using the body type guidelines in this chapter and the information about carbohydrates in chapters 11 and 12, along with a little bit of trial and error, you'll know if you're the carb type or not. You'll also discover that for most people, a healthy balance of macronutrients is best and extremes should usually be avoided.

Beware of absolutes and generalizations

Since there's such a wide range of different body types, you should view absolutes and generalizations with caution. When it comes to nutrition and training, be wary of inflexible programs and be very suspicious of the words "never" and "always." In the bodybuilding, fitness and diet world, there's a tendency for people to believe that a single method is best, while claiming that everyone else is wrong. Doing this can seriously limit your progress.

One of the greatest truths you'll ever learn about improving your body composition is that there's no single best way. A one-size-fits-all approach is doomed to failure. Whenever you read

any nutrition or training book, keep in mind that you're reading about one way, not "the" way. Take what is useful to you and throw away the rest.

A common example of a dangerous generalization is, "carbohydrates are fattening." This sends people – of all body types – into an unnecessary state of "carbo phobia." If you lump all carbohydrates into the same category, you're failing to acknowledge that there are healthy, nutrient-dense carbs as well as unhealthy, empty-calorie carbs.

The low carb gurus who preach that "carbs are bad" have caused more confusion with their dogmatic viewpoints than anything else in the history of the industry. The truth is, low carb, high protein diet programs may work phenomenally well for carb intolerant endomorphs, especially if they're sedentary. But people with different body types lose muscle and suffer from low energy, irritability and loss of mental clarity with carb depletion. Because carbs are fuel, they also need to be prescribed based on a person's activity level and training intensity.

The same premise could be extended to exercise programs. There's no single training program that works best for everyone. Some people do best with daily cardio, while some people hardly need any at all. Some people respond well to higher volume weight training, while others become over-trained on anything but brief and infrequent workouts. Again, you have to think in terms of your own uniqueness and individuality without being tempted to copy someone else's program – especially if the other guy is blessed in the genetics department.

There are very few absolutes in building a better body, but there are fundamentals and laws that apply to everyone. You're going to learn all of these laws throughout this book. Once you've mastered the fundamentals of a good baseline nutrition plan, then you must make adjustments for your goals and body type. If you *can* individualize, then *do* individualize. Failure to customize could mean the difference between great results and no results.

Assume 100% responsibility for your results

Many people are concerned about whether they've inherited "fat genes." Surprisingly, research on somatotype inheritability showed that mesomorphy was the most likely to be influenced by genetics and endomorphy the least. This suggests that elite bodybuilders are more likely to be born than made and overweight people are more likely to be made than born.

There's no denying that heredity plays a role in how easily you burn fat and dictates your ultimate potential for muscular development. However, full-blown genetic obesity is extremely rare. Most of the factors that affect body composition are entirely under your control. No matter what your body type or genetic potential, you can always improve by taking consistent action in all the areas that you control.

The factors you control

- How much you eat
- What you eat
- When you eat
- What type of exercise you do
- How frequently you exercise
- How long you exercise
- How hard you exercise
- Your overall lifestyle
- Who you socialize with and allow to influence you
- Your mental attitude

The truth is, if you have too much body fat, it's your fault; you're responsible. If you refuse to accept this, you'll never reach your full potential. If you have excess body fat and you want to lose it permanently, the first step is to accept 100% responsibility for your circumstances.

In a brief but powerful book called *As a Man Thinketh*, author James Allen wrote, "Circumstances do not make a man, they reveal him." What he meant is that we are not products of our environment or our heredity (our circumstances), we are products of our own thinking and belief systems.

We create positive circumstances through positive thinking and positive action, and we create negative circumstances through negative thinking, lack of action and wrong actions. In other words, you are responsible for who you are, where you are, and what you have - and that includes the way your body looks.

Some people get very upset when they hear this. They say, "Hold on a minute. Are you trying to tell me that when bad things happen, it's my own fault? That I brought unemployment, financial hardships, failed relationships, weight gain or even health problems onto myself? Because if that's what you're saying, that's totally unfair!"

With very few exceptions, yes, that's exactly what I'm saying. When you're not getting the results you want, the easiest thing to do is to put the blame somewhere else and make excuses like "It's my genetics," or "I have a slow metabolism." But if you don't accept that you're in control and you're responsible for your life, for better or worse, how can you expect to change?

Make no excuses – you are in control!

Making excuses is relinquishing control. It's conceding that you're at the mercy of circumstances instead of realizing you're a creator of circumstances. You must avoid blaming and take

responsibility for your results and your life. Take action! Start training. Make better food choices. Do something - do anything - but don't just sit there on the couch and curse your chromosomes.

It's no surprise that so many people put the blame outside themselves because there are so many psychologists, dietitians and physicians who argue that your weight is determined completely by genetics and if you're fat, "It's not your fault." This is simply not true. Genetics are only one factor. Believing that you're destined to be overweight for life because you inherited the "fat gene" is the most self-defeating attitude you could ever adopt.

No one ever said life was fair. In fitness, just like in other areas of life, there will always be people above you and below you. If you weren't blessed with a mesomorph body type, you have two choices on how to view your situation; you can either sit around complaining, or you can get moving, make the best of what you have and choose to become the best that you can be.

So-called limitations that force you to learn more about exercise, to eat more nutritious foods, adopt a healthier lifestyle, develop a strong work ethic and become a more persistent person can be a blessing in disguise. You'll find that when you finally work your way to your goals, you'll have become a much stronger person than you ever thought you could be. When someone has it easy, they don't develop the qualities of persistence and determination. They often become "coasters." There are a lot of "natural born" athletes and bodybuilders that coast on their genetics. Instead of making them stronger people, being genetically blessed has made them lazier people who never fulfill 100% of their potential. Don't envy them.

Before you get mad at your mesomorph friends who eat whatever they want and never gain an ounce of fat, remember: The more difficult the challenges, the stronger you'll become when you overcome them, and as Richard Bach wrote in *Illusions*, "If you don't have problems, you will never be the person who overcame them."

I'm not impressed with someone who shoots to the top easily. I'm more impressed by someone who gets knocked down over and over and keeps getting back up. I'm impressed with the person who overcomes; the person who has a difficult time achieving a goal – and achieves it anyway. Arnold Schwarzenegger put it this way: "Strength does not come from winning. Your struggles develop your strength. When you overcome hardships, that is strength."

Understanding your body type doesn't mean throwing in the towel if you're an extreme endomorph. It doesn't mean, "I'm genetically inferior so I won't even bother trying." Be realistic about your body type and accept the role it plays in changing your body. Don't get discouraged if you feel you don't have Olympian genetics. You can overcome nearly any

obstacle if you're willing to work hard enough. No matter what your genetic endowment, you can totally transform yourself with hard work, dedication, persistence and a positive attitude.

In closing this chapter, let me share with you the words of the late, great UCLA Bruins basketball coach John Wooden. Coach Wooden said, "The good Lord in his infinite wisdom, did not create us all equal when it comes to size, strength, appearance, or various aptitudes. But success is not being better than someone else, success is the peace of mind that is a direct result of self-satisfaction in knowing that you gave your best effort to become the best of which you are capable."

Don't try to become better than someone else; become better than you used to be. Instead of focusing on comparisons, focus on progress and self-improvement. Do the absolute best you can with what you've got and you'll be able to look at the face in the mirror every day with the pride and self-esteem of a true winner.

Chapter 6: The Law of Calorie Balance and the Mathematics of Burning Body Fat

"Human energy systems are governed by the same laws of physics that rule all energy transformations. No substantial evidence is available to disprove the caloric theory. It is still the physical basis for body-weight control."

—Melvin Williams, PhD, professor of exercise science, Old Dominion University

"Any discussion about optimal calorie intake is really a total waste of time - unless you are actually counting the calories! Unless you've done this in writing, and over a significant period of time (4-12 weeks), any discussion of this nature is purely academic. Don't kid yourself - get out your diary, buy a calorie/nutrient counter book and do yourself a favor; get to really know what you are doing - and more importantly - what the result of this specific combination is."

—Ian King, Australian strength coach and author of *Get Buffed*

People talk about calories all the time, but if you asked the average guy on the street to explain exactly what a calorie is or tell you how many calories he eats and how many he burns every day, he wouldn't have a clue. What's even more shocking is if you ask the average dieter, she wouldn't know either

By the time you're finished with this chapter, you'll be an expert on calories. You'll know exactly what calories are, how they're stored in your body, how many you burn every day and how many you should eat to burn fat and gain muscle. I'll show you why calorie counting is important and why guessing or only counting portions might be the only thing preventing you from getting leaner. Best of all, I'll also show you a simple method you can use to make calorie calculating and tracking a quick, easy and painless process. So let's get started.

The definition of a calorie

A food calorie (kilocalorie) is the amount of heat required to raise 1 kilogram (1 liter) of water 1 degree Celsius. A calorie, then, is simply a measure of heat energy. Like any fuel, (gasoline, coal, wood, etc.), food releases a certain amount of energy when it's burned. The more calories that are in a food, the more energy will be released.

The word calorie is used interchangeably to describe the amount of energy in food as well as the amount of energy stored in your body as adipose tissue (body fat) and glycogen (stored carbohydrate). For example, a glazed doughnut will set you back about 210 calories and it would take about a 25-minute brisk walk on the treadmill to burn off 210 calories.

Calories, body fat and survival

Body fat is like a reserve storage tank for energy. When we speak of “burning body fat” we’re talking about releasing calories from your storage tank and burning them to fuel your activities. If you’re inactive, your body fat just sits there in storage until you need it. If you’re an average 185-pound man with about 18% body fat, or a 135-pound woman with 25% body fat, you have about 33 pounds of body fat (adipose tissue). There are 3500 calories in each pound of body fat, which adds up to a grand total of 115,550 calories in fat storage. That’s enough fuel reserves to last you a long time!

From a survival point of view, body fat is a good thing and being too lean is a liability. But as you learned in Chapter 3, only very small amounts of body fat are essential for health. In modern society where famine is no longer the concern it was for our ancestors, excess body fat is little more than an annoying cosmetic problem. If your body fat gets too high, it also becomes a health risk.

Thanks to thousands of years of adaptation, with heartier and thriftier genes being passed from one generation to the next, the human body has developed into an incredibly efficient fat-storing machine. Your body has been wired with all kinds of checks and balances to maintain a fairly stable weight and when weight does change, it’s easier to go up than down. The good news is, by understanding calories and learning how to balance your input with your output, you can easily burn fat as much fat as you want and maintain a healthy and attractive body fat ratio for life.

The calorie bank analogy

An easy way to understand the calorie concept is to think of your body as a living calorie bank and caloric energy as money. You can make energy (fat) deposits and withdrawals from your body the way you would make money deposits and withdrawals from the bank, depending on how high your energy costs are.

When your energy costs are equal to the calories you consume, no deposit or withdrawal of calories takes place – your balance stays the same. When your energy costs are greater than the number of calories you ingest, you will make an energy withdrawal from your calorie bank and your body fat balance will decrease. When your energy costs are less than the amount of calories you take in, you will make an energy deposit and your body fat balance will increase.

The exception to this rule is when you’re on a weight training program to gain lean body mass. In this case, a small calorie surplus can be directed (partitioned) into muscle growth. But even when you’re training hard, if the calorie surplus is too large, the excess beyond what’s needed for muscle growth will be deposited into fat storage.

Why calories count

Keeping track of calories is just as important as keeping track of the deposits and withdrawals from your bank account. If you failed to pay attention to your checkbook balance and you made more withdrawals than deposits, you would soon find yourself broke and in debt. It's the same with your body, although in the case of calories, the reverse is true: If you don't keep track of your calorie deposits, you'll soon find yourself with an overstuffed calorie account in the form of unsightly and unwanted body fat!

The laws of thermodynamics govern energy balance in humans just like they do in other machines. Despite this fact, many fad diet programs insist that calories don't matter. For example, in 1961, *Calories Don't Count* was published by Dr. Herman Taller. This controversial book was one of the first multi-million-copy bestsellers to promote very-low-carb diets. Others followed. The most popular was *Dr. Robert Atkin's New Diet Revolution*.

According to the "calories don't count" theory, as long as you eat certain foods, or certain combinations of foods, you can eat as much as you want and you'll still lose weight. In the case of low carb diets, some claim that if you remove most or all of the carbs, then you can eat an unlimited amount of calories from everything else (protein and fat). In our lazy and pleasure-seeking society today, this idea sounds wonderful, but unfortunately, the idea of eating unlimited anything without gaining weight is dead wrong.

The real reason you can lose weight on low carb diets even if you don't count calories is because low carb diets tend to reduce hunger or appetite. If you restrict an entire food group, it's also harder to overeat. The end result is that most people *automatically* eat fewer calories. The weight loss comes from a calorie deficit, not from some magical effect of cutting carbs. Even if you ate zero carbs, if you ate more calories from protein and fat than you burned up in a day, you would still gain body fat.

The law of energy balance

This brings us to the law of energy balance: the granddaddy of all nutritional laws, and the first nutrition fundamental you must understand and obey if you want to get super lean.

The law of energy balance says, if you burn more calories than you consume, then your body must tap into stored fuel for energy to make up for the calorie deficit and you will lose weight. The reverse is also true: If you consume more calories than you burn each day, you will store the surplus and gain weight.

The Law of Energy Balance:

*To lose weight, you must burn more calories
than you consume each day*

*To gain weight, you must consume more calories
than you burn each day*

The first corollary to the law of energy balance

There are two corollaries to the law of energy balance. The first corollary says that too much of anything – even healthy foods – will get stored as body fat.

Some foods are healthier than others because they are nutrient-dense and unrefined. But regardless of what foods you choose, if you eat more than you burn, you will gain weight, usually in the form of body fat.

Many people believe that eating exorbitant amounts of calories from protein will make them gain more muscle, but even excess protein can be turned into fat. There's no such thing as a diet where you can eat all you want and lose weight simply by eating (or avoiding) one particular food or food group.

Corollary One of the Law of Calorie Balance

Too much of ANYTHING will get stored as fat - even healthy food.

The second corollary to the law of energy balance

The second corollary to the law of energy balance says that if you eat fewer calories than you burn each day (you're in a calorie deficit), then even if you eat unhealthy ("junk") food, you won't store it as body fat.

You should not interpret corollary two as a free license to eat whatever you want. You might be able to get away with eating a low calorie junk food diet without gaining weight, but if you want to stay healthy, calorie *quality* is also important. When you understand this corollary, it simply takes some pressure off you. It lets you relax your diet and enjoy your favorite indulgences from time to time without guilt, as long as you maintain your calorie deficit. You can have your cake and eat it too – you just can't eat the whole thing!

Corollary Two of the Law of Calorie Balance

*Small amounts of ANYTHING - even junk food - will NOT get stored
as fat if you are eating fewer calories than you burn.*

The importance of portion control

The law of energy balance and its two corollaries override all other weight loss laws. Many people work out diligently, they choose healthy foods and do everything else right, but they miss the most obvious factor of all - they're simply eating too much. Sometimes, the only mistake holding you back from reaching your fat loss goals is failure to pay attention to portion sizes.

Getting leaner requires the discipline and willpower to control your calories at all times, even when you eat your occasional cheat meals – perhaps, especially then. Always pay attention to portion sizes. Notice how full your stomach feels and never stuff yourself. The idea that you have to clear off your entire plate, especially at restaurants or when you're served by others; get it out of your head.

Instead, stop eating when you're only 80% full. Even better, know your exact calorie needs and stop when you've reached your predetermined limit for each meal (You'll learn how to calculate your ideal calorie intake – for the day and for each meal - in the rest of this chapter).

How to calculate your total daily energy expenditure (TDEE)

The first step in designing your personal fat burning plan is to calculate how many calories you need every day. That number is called your total daily energy expenditure or TDEE. This is also known as your maintenance level, because this is the point where your calorie deposits are exactly equal to your calorie withdrawals. TDEE is the total number of calories your body burns in 24 hours, including basal metabolic rate and all activities.

The 6 factors that influence your personal daily calorie needs

Your daily calorie requirements (TDEE) depend on six major factors. All calorie formulas are just estimates, but the more of these factors you take into account, the more accurate and personalized your estimation will be.

1. Basal Metabolic Rate (BMR)

BMR is the total number of calories you burn every day for basic bodily functions. That includes digestion, circulation, respiration, temperature regulation, cell construction, and every other metabolic process in your body. In other words, BMR is the sum total of all the energy you use, not including physical activity. BMR usually accounts for the largest part of your total calorie expenditure - about two-thirds. BMR is at its lowest when you're sleeping and not digesting anything.

2. Activity Level

Next to BMR, your activity level is the second most important factor in how many calories you need every day. The more active you are, the more calories you burn. If you sit behind a desk all day, then relax on your couch all night, you don't burn many calories.

3. Weight

Your total body weight and total body size are also major factors in the number of calories you need. The bigger you are, the more calories you require to sustain and move your body.

4. Lean Body Mass (LBM)

Separating your total weight into its lean and fat components helps you to calculate your calorie needs even more accurately. The higher your LBM, the higher your BMR. Muscle is metabolically active tissue that requires a significant amount of energy to build and sustain. This means that the more muscle you have, the more calories you'll burn at rest.

5. Age

Metabolic rate tends to slow down with age. Therefore, the number of calories the average person requires also goes down with age. This explains why people who choose not to exercise, but continue to eat the same amount of food as they did when they were younger, will see their body fat start creeping up after age 35 or 40. Fortunately, you can prevent and even reverse metabolic slowdown, fat gain and age-related muscle loss (sarcopenia) with weight training and proper nutrition.

6. Gender

Men usually require significantly more calories than women. The difference is not entirely due to gender, but to body size. The average man is larger and carries more muscle mass than the average female. Except for genetically-inherited variations in BMR, a 150-pound man and a 150-pound woman will have approximately the same calorie requirements if their activity level and lean body mass are the same.

Average calorie requirements for men and women

According to exercise physiologists William McArdle and Frank Katch, the average maintenance level for women in the United States is 2000–2100 calories per day and the average for men is 2700–2900 per day.

Actual calorie expenditures can vary widely and are much higher for athletes or extremely active people. Some triathletes and ultra-endurance athletes may need as many as 5000–6000 calories per day or more just to *maintain* their weight. Endurance cyclists often slog down energy bars, gels and high calorie carbohydrate drinks on the saddle, just to keep from losing weight by the hour!

It's always better to crunch the numbers and customize your nutrition plan as much as possible, but if you're average in body size and activity level and you don't like math, you can use these average ranges as a logical starting point.

For maintaining weight (TDEE):

Men (average): 2700–2900

Women (average): 2000–2100

For losing weight (deficit):

Men (average): 2100–2400

Women (average): 1400–1800

For gaining weight (surplus):

Men (average): 3200–3800+

Women (average): 2300–2600+

Calorie calculators: 3 formulas to determine your calorie needs

Exercise physiologists have developed many equations to help you calculate your daily calorie needs. I've included three different formulas you can choose from that have been real-world tested and proven to provide very accurate estimates.

1. The "quick" method

A fast and easy way to see how many calories you need is to use your total current body weight in pounds times a multiplier between 11 and 20.

Fat loss = 11–13 calories per pound of bodyweight

Maintenance = 14–16 calories per pound of bodyweight

Weight gain = 18–20+ calories per pound of bodyweight

The quick method is popular, but it does have drawbacks because it doesn't take into account activity level or body composition. If you're extremely active, this may underestimate your

calorie needs. If you're an older adult or if your body weight is much higher than average, this may overestimate your calorie needs.

For example, using the quick method, a lightly active, overweight 50-year-old female who weighs 235 pounds would have a TDEE of at least 3290 calories (235 X 14). However, even a very large woman will usually gain weight on 3290 calories per day if she's mostly sedentary.

Despite these limitations, this simple formula is an excellent way for most people to get a quick ballpark estimate, as long as your activity level is average and your body fat is average or better.

A more accurate method for calculating TDEE is to first determine BMR, then multiply your BMR by an activity factor. There are two formulas you can use to calculate your BMR:

- If you don't know your lean body mass (LBM), use the Harris-Benedict equation.
- If you know your LBM, use the Katch-McArdle equation to get the most accurate calorie estimate.

2. The Harris-Benedict equation

The Harris-Benedict equation uses the variables of height, weight, age, and gender to determine basal metabolic rate (BMR). This makes it more accurate than calculating calorie needs based on total bodyweight alone. The only variable it doesn't consider is LBM. This equation is very accurate in all but the extremely muscular and extremely obese, where it may overestimate caloric needs.

Men: $BMR = 66 + (13.7 \times \text{wt in kg}) + (5 \times \text{ht in cm}) - (6.8 \times \text{age in years})$

Women: $BMR = 655 + (9.6 \times \text{wt in kg}) + (1.8 \times \text{ht in cm}) - (4.7 \times \text{age in years})$

Conversions: 1 inch = 2.54 centimeters

1 kilogram = 2.2 pounds

Example:

You are male

You are 30 yrs old

You are 5' 8 " tall (172.7 cm)

You weigh 172 pounds (78 kg)

Your BMR = $66 + 1068 + 863.6 - 204 = \mathbf{1793 \text{ calories/day}}$

Once you know your BMR, you can calculate TDEE by multiplying your BMR by an activity factor. Use the following chart to estimate your activity level. If in doubt, guess on the low side because research shows that most people over-estimate how many calories they burn each day.

Activity Level	Multiplier	Description
Sedentary	BMR X 1.2	Little or no exercise, desk job
Lightly Active	BMR X 1.375	Light exercise or sports 3–5 days/week
Moderately Active	BMR X 1.55	Moderate exercise or sports 3–5 days/week
Very Active	BMR X 1.725	Hard exercise or sports 6–7 days/week
Extremely Active	BMR X 1.9	Hard daily exercise or sports and physical labor job or twice-a-day training (football camp, etc)

Continuing with the previous example:

Your BMR is 1793 calories per day

Your activity level is moderately active (working out 3–5 times per week)

Your activity factor is 1.55

Your TDEE = $1.55 \times 1793 = 2779$ calories/day

3. The Katch-McArdle Equation

The Harris-Benedict equation has separate formulas for men and women because men usually have larger bodies and more lean body mass. Since the Katch-McArdle formula accounts for LBM, this single formula applies equally to both men and women and it's the most accurate method for calculating your daily calorie needs.

BMR (men and women) = $370 + (21.6 \times \text{lean mass in kg})$

Example:

You weigh 172 pounds (78 kg)

Your body fat percentage is 14% (24.1 pounds fat, 147.9 pounds lean)

Your lean mass is 147.9 pounds (67.2 kg)

Your BMR = $370 + (21.6 \times 67.2) = 1821$ calories

To determine TDEE from BMR, you simply multiply BMR by the activity factor, as shown in the following example:

Continuing with the previous example:

Your BMR is 1821

Your activity level is moderately active (moderate workouts 3–4 times per week)

Your activity factor is 1.55

Your TDEE = $1.55 \times 1821 = 2822$ calories

The difference in the TDEE as determined by both formulas is statistically insignificant (2779 vs. 2822 calories), because the person we used as an example is average in body size and body composition. The primary benefit of factoring LBM into the equation is increased accuracy when your body composition leans to either end of the spectrum (very muscular or very obese).

The mathematics of weight control: 3 guidelines for adjusting your calories

Once you know your TDEE (maintenance level), the next step is to adjust your calories according to your primary goal. The mathematics of weight control are simple:

1. To keep your weight the same, stay at your daily caloric maintenance level.
2. To lose weight, create a calorie deficit by reducing your calories slightly below your maintenance level (or keeping your calories the same and creating a deficit by increasing your activity above your current level).
3. To gain body weight, create a calorie surplus by increasing your calories above your maintenance level. To make sure the weight gain is mostly lean body mass, a program of progressive resistance weight training is absolutely mandatory.

How to adjust your calories for fat loss

Releasing stored energy from your fat cells is a complex neuro-endocrine process, but it starts with one simple condition: You must create a calorie deficit. There are 3500 calories in a pound of stored body fat. In theory, if you create a 3500-calorie deficit per week through diet, exercise or a combination of both, you will lose one pound (assuming you lose 100% body fat). If you create a 7000-calorie deficit in a week, you will lose two pounds.

The calorie deficit can be created by reducing food, increasing exercise or preferably a combination of both.

Example:

Your weight is 172 lbs (78.18 kg).

Your TDEE is 2822 calories

Your daily calorie deficit to lose fat is 500 calories

Your daily caloric intake for a one-pound weekly weight loss is $2822 - 500 = \mathbf{2322 \text{ calories}}$

Your daily caloric intake for a two-pound weekly fat loss is $2822 - 1000 = \mathbf{1822 \text{ calories}}$

The “minus 500 to 1000 method” will show you how much you would have to eat to lose one or two pounds per week. Depending on the individual, however, a 1000-calorie deficit could be a perfectly reasonable reduction or it could be semi-starvation.

For example, if you’re a large and active male with a 3400-calorie-per-day maintenance level, then a 1000-calorie deficit means a daily caloric intake of 2400 calories per day. That’s a 30% deficit, which is aggressive, but well within reason. If you’re a petite, inactive female with a maintenance level of 1900 calories per day, then a 1000-calorie deficit means a caloric intake of a 900 calories per day. That’s a 53% deficit, which is semi-starvation, and potentially unhealthy. As Einstein would say, that's relativity.

Burn the Fat, Feed the Muscle calorie deficit guidelines

The ideal method for choosing your calorie deficit is to use a sliding scale and to select a percentage deficit *relative* to your maintenance level. For safe, healthy, long term fat loss, choose a deficit between 15% and 30% below your maintenance level.

Conservative deficit	15–20% below maintenance
Moderate deficit	21–25% below maintenance
Aggressive deficit	26–30% below maintenance
Extremely aggressive deficit	31–40% below maintenance
Semi-starvation	50% below maintenance

Example (Conservative deficit)

Your TDEE is 2822 calories

Your calorie deficit is 20% (.20% X 2822 = 564 calories)

Your optimal caloric intake for fat loss = **2258 calories**

Projected weight loss = 1.1 pounds per week

Example (Aggressive deficit)

Your TDEE is 2822 calories

Your calorie deficit is 30% (.30% X 2822 = 847 calories)

Your optimal caloric intake for fat loss = **1975 calories**

Projected weight loss = 1.7 pounds per week

When you’re deciding whether to be aggressive or conservative with your deficit, you should consider not only your desired rate of fat loss (which may be influenced by whether you’re under deadline to achieve a goal), but also consider your starting body fat level.

Research has shown that in an aggressive deficit, lean people tend to lose more LBM and retain more fat, while fat people tend to lose more body fat and retain more lean tissue. This explains why obese people can tolerate low calorie diets better than lean people. If you have plenty of energy in storage as body fat, then you're in less danger of starvation than a very lean person.

Physique athletes or people who are already lean but want to get even leaner (aka "ripped"), have a higher risk of losing lean tissue with an aggressive calorie deficit, especially when training volume and intensity are high. That's why, if you're lean, it's wise to keep your calorie deficit conservative. If you're overweight, it's safe to make your calorie deficit more aggressive.

Calorie deficit thresholds: How low is too low?

A calorie deficit that's too large or too prolonged will eventually slow your metabolism, increase hunger, decrease energy, reduce essential nutrient intake and cause a loss of lean body mass. That leaves you with a dilemma: How low should you go to get maximum fat loss, with minimum side effects?

There definitely seems to be a threshold point where further reductions trigger metabolic, health or compliance problems at an accelerated rate. The ACSM's suggestions of reasonable calorie minimums are 1200 per day for women and 1800 per day for men. But as with all fixed recommendations, it's only a generalization. It's always ideal to customize.

The best solution is to follow the ***Burn the Fat, Feed the Muscle*** deficit guidelines and use a maximum calorie deficit of 30% below maintenance. There may be some situations where a deficit over 30% makes sense, but it may be riskier, especially for lean people. Extremely aggressive deficits should not be used except by obese patients under doctor's orders.

The ideal calorie intake for gaining muscle

Bodybuilding and weight loss product marketing has convinced many people that huge gains of muscle along with large losses of body fat are common and easy to accomplish. More often than not, these claims are complete fabrications based on phony testimonials, steroid-using models or Photo Shopped pictures, or they're "results not typical" scenarios such as out-of-shape bodybuilders simply getting back into shape.

Burn the Fat, Feed the Muscle is a fat loss program, focused on the caloric deficit, so you're not likely to gain a lot of muscle while following this program. Over an extended period of weeks or months on this program, it is common to see a *large* decrease in body fat with a *small* increase in lean body mass. On muscle gaining programs, it's also common to see a *large* increase in lean body mass with a *small* decrease in body fat. But you will rarely see a *large* increase in lean

body mass and a *large* decrease in body fat concurrently, because fat loss and muscle gain goals are actually somewhat antagonistic to each other.

If you have a daily maintenance level of 3000 calories, then your optimal intake for fat loss would be about 2400 calories a day – a 20% deficit. If your primary goal is to gain lean body mass, then your optimal intake would be at least 3400 calories per day – a 15% surplus. That’s a *1000-calorie difference* between a diet for optimal fat burning and a diet for optimal muscle growth.

People who fail to decide on their single most important goal usually flip-flop back and forth between trying to gain muscle and trying to lose fat, and often end up accomplishing neither. There are ways to purposefully achieve body recomposition – gaining muscle and losing fat concurrently. However, outside of mesomorphs and a few unique situations like muscle memory, anabolic drugs and newbie gains, it’s a slow and difficult process that requires a more sophisticated cyclical dieting system. The most efficient method to transform your body composition is to put 100% of your energy and focus into your one most important goal - either losing fat or gaining muscle.

If your body fat is significantly above average, focus on cutting the fat first. One reason is because high body fat levels can be very unhealthy. Overweight people also tend to gain fat more easily in a surplus. That’s a big downside of “bulking” to gain muscle when you’re still carrying a lot of body fat. Once the fat is off, you can set new goals and work on gaining muscle while maintaining your new, lower body fat level. When the time comes that you want to gain muscle, all the principles of this program will still apply, you’ll simply need to eat more.

A brief in introduction to cyclical dieting: How to trick your metabolism into burning more fat, breaking through plateaus and recovering from metabolic damage

Back in chapter two, you learned about the starvation response and the dangers of cutting calories too low or staying in a calorie deficit for too long. Every time you cut calories, it’s never long before your body recognizes the food shortage and adjusts your fat burning thermostat so you’re burning fewer calories. After a long time in a continuous deficit, you also reach a “depletion point” where hunger increases, your energy drops and it starts getting more and more difficult to stick with your program.

If you periodically raise your calories back up to maintenance or slightly higher, instead of staying on low calories all the time, you can literally trick your body into continuing to burn calories at a normal rate. If your body could talk, it would say, “Never mind, it was a false alarm. There’s plenty of food coming in after all. No need to hoard body fat. Turn the metabolism back up and turn the hunger back down.” By raising your calories back up, even just for one day, you

boost your metabolism and experience less of the bad stuff that happens with nonstop calorie restriction.

Raising your calories up and down is called cyclical dieting or the “zig zag” method. The higher calorie day is known as a “re-feed” day (not to be confused with a cheat day; a refeed is eating the same healthy foods, simply more of them). My experience working with thousands of clients, combined with more than 20 years of competitive bodybuilding and exhaustive scientific research, have led me to prefer a three days low, one day high cycling method for advanced dieters. One refeed day per week can be helpful for beginners and intermediates (optional).

In the beginning, most people get the best results simply by staying in a linear calorie deficit. The leaner you get and the longer you’ve been on a calorie deficit, the more beneficial it is to start taking re-feed days. It’s during the later stages of a fat loss program when your body adapts the most. The cycling method can help you avoid plateaus and keep the progress coming. This is also an effective technique for people who have been chronic yo-yo dieters because it can help re-stimulate a sluggish or damaged metabolism.

You’ll learn more about zig zagging your calories and how to take refeed days in chapter 12 when we discuss advanced fat loss strategies and carb cycling.

How to reconcile between theoretical (on paper) and actual (real world) calorie needs

The calorie equations and guidelines in this chapter can be surprisingly accurate, but they were never intended to be perfect. All calorie formulas are just estimations to give you a starting point. The only way to tell if your estimate is correct is to get started, establish a baseline and watch your results carefully.

To see how your body responds to your initial calorie calculations, measure and record your weight and body composition every week using the instructions in Chapter 3. If you don’t get the results you expect, adjust your caloric intake and exercise levels according to the instructions from Chapter 4.

Like all the advice in this book, the calorie numbers on paper take a back seat to real world results. To help you establish a baseline and fine-tune your calorie intake quickly, it’s also a smart idea to compare your calorie calculations on paper to the amount you’ve been eating recently.

Think back to a recent *typical* day of eating and write down in a notebook, spreadsheet or electronic journal, everything you ate from the time you got up in the morning to the time you went to sleep at night. Don’t forget the little things like sauces, condiments, candies or mints, the

milk in your coffee, the sports drink during your workout, that beer on the weekend, the late-night snacks and the “non-caloric” sweeteners (which actually do have some calories!) If your food intake varies and you never have a typical day, then write down three days worth of recent eating, so you can add them up and divide by three to get a daily average.

Next, look up the caloric value of each food and write it down next to each food item. I recommend purchasing a good calorie counter book, such as Corinne Netzer’s *Complete Book of Food Counts*. You can also find excellent food databases online at websites such as our own at www.BurnTheFatInnerCircle.com. Then, add everything up so you can see how many calories you’ve actually been eating.

Adjust your calorie intake gradually in necessary

After you’ve done your calculations on paper and your completed your typical day’s food recall, compare the two numbers. If your actual caloric intake has been substantially higher or lower than your new target amount according to the formulas, then you may need to adjust your calories slowly.

Cutting calories quickly and abruptly often leads to diet relapse and weight regain because the change is too dramatic for some people to sustain. On the other hand, if you crunch your numbers and see that you’ve been eating a lot less than you should, it’s equally important to increase your calories gradually because your metabolism may be sluggish. A sudden jump in calories may actually cause you to gain weight initially.

The best approach would be to gradually adjust your calories in small weekly increments of 100–200 calories at a time to allow your metabolism to acclimate.

Is calorie counting really necessary or can you just count portions?

Some people argue that counting calories is too tedious and unrealistic for most people as a long term lifestyle. Instead, they recommend counting portions. Counting portions is a start because this acknowledges the importance of energy in versus energy out. The downside of counting portions is that you’re essentially just guessing.

In his book, *Everything You Need to Know About Fat Loss*, bodybuilding nutritionist Chris Aceto writes, “I feel that number crunching is a very important part of learning about nutrition. You will never be able to build an exact diet, one that really works, and one that is built especially for you without knowing how to count calories, carbohydrates, protein and fat.”

Although a lucky few can just “wing it” and guess at everything with positive results, most top-level physique athletes meticulously track calories as well as macronutrients. So have the majority of our most impressive body transformation success stories over the years. They leave nothing to chance and neither should you. This is especially true at times when you’re working hard on achieving a major goal with a deadline, whether it’s a bodybuilding competition, a body transformation contest or losing 6% body fat for vacation.

Doing your nutrition by the numbers is also important if you ever hit a plateau. If you aren’t quantifying and tracking everything, it’s almost impossible to troubleshoot the cause of stalled fat loss.

Calorie counting made easy

There’s a happy medium between meticulous calorie counting and simply guessing: All you really need to get started on the road to a better body is one good menu on paper. Simply crunch all your numbers, including calories, protein, carbs and fats, and set up your own personalized daily meal plan. Using the exchange system guidelines you’ll learn in an upcoming chapter, making substitutions from one primary meal plan is a cinch.

A simple way to make this process quick and easy is to create your meal plan on a spreadsheet such as Microsoft Excel. There are also numerous apps or software programs for creating meal plans and tracking nutrition intake. The Burn the Fat Meal Planner software is available exclusively to Burn the Fat Inner Circle members at <http://www.BurnTheFatInnerCircle.com>.

You can use the meal plan templates in Chapter 14 and the meal plans in the appendix as samples, but there’s no substitute for the learning experience you get from creating your own meal plans. Once you have your daily meal plan finished, print it, stick it on your refrigerator (or carry it in your daily planner or mobile device) and you now have an eating goal and calorie target for the day.

If you enjoy the variety, you can create a few days or even an entire week of menus and rotate them. Eating the same thing every day makes establishing a baseline, tracking calories and complying to a meal plan infinitely easier, but to get the complete spectrum of vitamins, minerals, fiber and other nutrients necessary for optimal health, it’s a good idea to incorporate a wide variety of foods within each day’s plan instead of eating the same meal five times a day.

During the initial stages of the program, weigh and measure all your food. Get yourself a food scale which is available in the kitchen section of most houseware or department stores, and get a set of measuring cups and spoons. Make it a habit to read the nutrition facts panel on the labels of packaged foods to learn the ingredients, calories and nutritional values. For produce and

natural foods that don't come with nutrition information labels (fruits, vegetables, legumes, yams, potatoes, and so on), it helps to keep a calorie book, chart or electronic database handy.

Keep up this level of tracking until you reach your goal or at least until you start to get a “sixth sense” for portion sizes and calories. You can return to weighing and measuring food anytime in the future if you ever hit a plateau.

If you're not familiar with calories, protein, carbohydrates and fats at all, then I also strongly recommend keeping a daily nutrition journal, either electronically or on paper, at least one time for at least 4–12 weeks. It will be an amazing learning experience that you'll never get from reading a book or following a pre-made meal plan.

Crunching all the numbers and creating your own meal plans will require a little bit of work at first, but if you think about it, when you use this method, you only need to count calories once in the beginning when you create your meal plans. After that, you just follow the menu. Once you've got a knack for calories from creating meal plans on paper, then you can eyeball portions and get a pretty good (and much more educated) ballpark figure.

Why menu planning and calorie counting are disciplines that pay

Clearly, it's not necessary to write down the amount of calories in every crumb that goes in your mouth every day for the rest of your life, but it's absolutely vital to understand and obey the law of calorie balance and at least know a ballpark figure of your current daily intake. There's no better way to learn about calories than to carefully count them in the early phases when you're just getting started, otherwise you're just guessing.

Ultimately, how meticulously you decide to track calories should depend on your results. If you're shedding fat while maintaining your lean body mass without counting calories, then keep doing what you're doing. But if you're not making the progress you want, a lack of nutritional precision might be the only thing holding you back.

You might not consider nutritional number crunching fun or easy and you might not feel like doing it. However, meal planning is a discipline and becoming a disciplined person in your nutrition and training habits pays huge dividends, including: better health, higher energy, more muscle and less body fat.

The best definition of discipline I've ever heard was given by achievement expert Brian Tracy, who said, “Discipline is doing what is hard and necessary rather than what is fun and easy and doing it when it's necessary, whether you feel like doing it or not.”

If you want the best results, then do what's necessary: Get out your calorie book and spreadsheet (or nutrition software) and create out your meal plans on paper. Then get out your measuring cups and food scale, and start keeping track of what you're eating and how much you're eating.

In the upcoming chapters, get ready to learn about more disciplines you'll want to adopt as part of your new lifestyle so you can cut your body fat down to super low levels, revealing the chiseled muscle definition you've always wanted!

Chapter 7: Nutrient Timing Secrets of Bodybuilders and Fitness Models

"It's not just what you eat, but when you eat that determines the overall success of a resistance training program."

—Tim Ziegenfuss, PhD, president of the International Society of Sports Nutrition

"A good rule of thumb would be to eat smaller, more frequent meals. A dedicated bodybuilder should eat at least five times a day and space those meals no further than three hours apart. I've been eating this way for years."

—Skip Lacour, 5-time national heavyweight drug-free bodybuilding champion

Now that you've digested all the information about energy balance from Chapter 6, you understand that a calorie deficit is a required condition for weight loss to occur. However, achieving optimal *body composition*, peak performance, strength, high energy levels and even mental focus is not entirely about how much you eat, but also about what you eat and when you eat. This chapter is about the when.

If you don't provide fuel and building materials to your body when it needs them the most, your nutrition program won't work as well and even a well-designed training program becomes less effective.

Burn the Fat, Feed the Muscle is about maximizing the synergy between training and nutrition to give you the best possible improvements in body composition. By following the bodybuilding-inspired nutrient timing techniques you'll learn in this chapter and combining them with weight training and cardio, you'll improve your muscle-to-fat ratio more than you ever could by following the diet-only approach to weight loss.

Meal-timing secrets of bodybuilders and fitness models

Physique athletes believe that food quantity, quality *and* timing all work together to increase their ability to train hard, recover from training and achieve maximum muscular development with extremely low body fat. Bodybuilders typically eat four to six smaller meals per day rather than three large ones and they don't skip meals. Large bodybuilders sometimes eat even more than six times per day, especially when gaining muscle is the primary goal.

The track record of bodybuilding nutrition is so impressive, it can't be ignored. For at least three decades, this type of daily meal plan has produced some of the leanest and most muscular physiques on Earth.

After a few months of strict pre-contest training combined with eating protein-rich meals at regular intervals every day, bodybuilders often reach body fat levels as low as 3-5% for men and 8-10% for women (that's what you call "ripped!"). Remarkably, they maintain more muscle than any other athletes at such low body fat percentages. In the "off-season," bodybuilding nutrition allows men and women to build more lean muscle than any other dietary approach.

Benefits of frequent meals

Why do so many athletes and bodybuilders like to eat frequently and loyally swear by it? Many reasons have been proposed over the years, ranging from increased metabolism to better muscle growth. Not all the reasons bodybuilders claim for eating more often have been scientifically verified, and the ideal meal frequency has become a subject of great debate in the last several years. However, the five to six meals a day plan is still the most widely used method in physique sports today, both for burning fat and for gaining muscle.

In the list below, you'll see some of the many reasons that are often given in favor of the physique athlete approach to meal frequency:

1. Frequent eating makes it easy to hit your daily calorie needs and fuel your workouts.

A couch potato doesn't burn many calories each day, so they don't need to eat as much. They also don't have to worry about pre- and post-workout nutrition. Whether a couch potato eats three or six times a day probably doesn't make much difference. On this program, you'll be doing two types of workouts – cardio training and weight training. When you train like an athlete, you burn a lot more calories and you have to feed your body like an athlete. The more often and the more intensely you train, the more calories you need and the more important nutrient timing becomes. With more frequent meals, it's easy for an athlete to fuel and refuel optimally. The larger and more active you are, the greater the benefit.

2. Frequent eating makes it easy to hit your optimum protein intake.

Protein needs are higher for people doing strength training. For years, the popular rule of thumb for bodybuilders has been one gram per pound of bodyweight (2.2 g/kg) per day. Getting this much protein is easy when it's spread out into four to six feedings compared to cramming it into two or three. When a nutrition program calls for frequent meals, with a protein at each meal, most people will increase their overall daily protein intake and find it very easy to hit their protein goal. As an extra bonus, shifting to more protein in your macronutrient mix increases your metabolism due to protein's higher thermic effect.

3. Frequent eating may help reduce appetite, control cravings and prevent binges.

When you go a long time without food, hunger can be a problem. Sometimes, it gets hard to resist. Mid-afternoon crashes or night-time cravings that send you running for a sugar or junk food fix are often the result of skipping breakfast, leaving long gaps between meals or eating haphazardly without any meal schedule at all. If you eat something every three or four hours, at least a snack, hunger is rarely a problem, because mealtime always rolls around so often. You feel psychologically satisfied as well and the impact on behavior can be profound. Even if you do feel a little hungry, you can always say to yourself, “I can wait, because the next meal is just an hour or two away.”

4. Frequent eating helps provide a steady flow of fuel and help maintain high energy levels.

Almost everyone who switches to the bodybuilder-style of meal plan says they immediately have more energy. No more mid-morning crashes, no more late afternoon drowsy spells, no more brain fog, no more ups and downs; just steady, high energy all day long – and more energy for workouts.

People who have problems regulating blood sugar find it especially valuable to spread out their food intake. If they overeat at one sitting, especially refined calorie-dense carbs, they experience a spike in blood sugar, followed by a sharp drop, known as hypoglycemic rebound. This causes an energy dip, light-headedness and intense physiological hunger that can derail even the strongest willpower. Eating frequent meals with natural, slow-releasing carbs, fiber, lean proteins and small amounts of healthy fats, stabilizes your blood sugar and prevents the energy ups and downs.

5. Frequent eating may help promote muscle growth and prevent muscle breakdown.

Will you get better muscle growth from eating five to six meals a day as compared to the traditional breakfast, lunch and dinner? Most bodybuilders and fitness models adamantly believe that, and have the results to back it up. Some nutritionists and scientists argue that as long as you hit your calorie and protein goals every day, it shouldn't make a huge difference between three, four, five or six meals per day. However, there's very little long term research on meal frequency that measures body composition in physique athletes doing high intensity strength training. That's why I believe it makes the most sense to pay attention to research and real world results, not the research alone. The overwhelming evidence in the bodybuilding world – anecdotal as it may be – is very hard to ignore.

6. Frequent eating promotes healthy attitudes and behaviors toward nutrition and fat loss.

Every so often, I hear someone argue that bodybuilders are too detail oriented and even obsessive about food, in a way that could become psychologically harmful. It's certainly true that any behavior can become obsessive, and there are cases of physique athletes – especially at the contest level - who developed their own types of eating disorders (look up “muscle dysmorphia”). But in general, I believe exactly the opposite.

I believe that bodybuilding nutrition can be an enjoyable, rewarding and healthy lifestyle, not a diet. I also believe that the high level of discipline and attention to detail required (which transfers to other areas of life), is not only the very thing responsible for the spectacular physical results, it's also psychologically healthier than typical deprivation diets.

Dr. John Berardi is a respected nutritionist and author from Canada, who has researched, practiced and taught many diverse methods of eating for athletes. With regards to the bodybuilder's eating style, he came up with a very unique and empowering way of looking at the frequent meals. He recommends calling them “feeding opportunities.” In a world where many dieters are starving themselves and are literally afraid of eating, this type of outlook makes you think of food as your solution, not your problem. Personally, I eat a lot of natural, whole food, and I eat often.

Now, compare that to many of the weight loss diets being promoted today that are little more than starve and binge. It seems clear to me that the bodybuilder's way is the one that encourages the healthiest attitudes and behaviors toward food.

Should you eat like a bodybuilder?

A fundamental philosophy of the *Burn the Fat, Feed the Muscle* system is modeling strategies that have already been proven successful in the real world. Modeling means that if you want to get lean and muscular, then you should seek out the leanest and most muscular people, find out what they did to get that way, and do the same thing. Bodybuilders and physique athletes are the exemplars in this field – they are the leanest muscular athletes on Earth.

I'm not saying you should do what I did strictly because it worked for me. But when you see a track record of success, decades long, with thousands of people achieving spectacular results, it pays to take a closer look. If you isolate the common denominators of success from a large group of top performers, you create a blueprint that you can copy yourself with great confidence.

Is bodybuilding nutrition right for you? Try it, and I think you'll be amazed at the results. Most people love it because they get to eat more. However, it is important to customize your daily meal plan to fit your caloric needs, your goals, and your personal preferences. For long-term weight management success, it's also vital to think about compliance. Ask yourself, "Can I stick with this program and eat this way as a lifestyle?"

If eating the way bodybuilders do, with five or six whole food meals every day is a burden to you due to the extra food preparation and time spent eating, if it leads to eating more than you should or makes it harder to stick with your plan, not easier, then you're better off with a more traditional meal plan. If eating five or six times a day helps you control your appetite and easily hit your calorie goals, if it gives you more energy, keeps you satisfied all day long and you enjoy it – like I do – then join us!

What is the optimal number of meals?

Eating breakfast, lunch and dinner is the traditional and most widely-accepted meal schedule. This program can certainly work with three meals a day. As long as you eat the right amount of calories, and you eat foods that give you all the necessary macro- and micro-nutrients every day, you'll get by just fine. However, on ***Burn the Fat, Feed the Muscle*** – which follows the bodybuilding nutrition method, five or six meals a day is usually standard for men. For women, who have lower calorie needs, four or five meals are usually recommended.

If you sleep eight hours per night, that leaves 16 waking hours in the day. Five or six meals over 16 hours equals one meal every 2.7 to 3.2 hours. Four or five meals works out to one feeding every 3.2 to 4 hours. If you average that up for simplicity, that's where we get the common guideline of one meal every three or four hours.

So, if five to six meals a day are good, then seven or eight must be even better, right? Not necessarily. Bodybuilders are famous for constantly eating. Some have been known to set their alarms to eat in the middle of the night! But as in most areas of life, when anything is taken to an extreme, there's a point of diminishing returns and impracticality.

If you eat too often, you'll simply be piling food on top of undigested food. For some people, having to cook and eat a sit-down meal every two or three hours is inconvenient. For people with low calorie needs, such as short or petite women, splitting the day's intake into more than four or five meals could make each meal too small to be satisfying. There's also no evidence that you can force your body to utilize more protein, gain more muscle or burn more fat by trying to "IV drip feed" nutrients into your system.

The cardinal sin of fat-burning and muscle-building nutrition: missing planned meals

Missing a meal occasionally is not going to make your metabolism crash or your muscles waste away. However, establishing a meal plan and sticking to it consistently is important for improving your health and body composition. Many people think that skipping meals will reduce their calorie intake for the day and speed up their fat loss. Ironically, the opposite often happens.

A study from the University of Nottingham in the United Kingdom showed that there was a lower thermic effect of feeding with an irregular meal pattern. The irregular pattern also made it difficult for subjects to appropriately adjust their caloric intake for the day. They said that this could lead to weight gain over the long term.

A study from the University of Massachusetts showed that skipping breakfast increased obesity risk by 450%. The same study also showed that delaying breakfast just three hours after waking up increased obesity risk by 69% and that people who ate four or more meals spread throughout the day were 33% less likely to be obese compared to people who ate three meals or less per day.

These were epidemiological studies, so they didn't show cause and effect. But these statistics do accurately reveal what happens to most people who skip breakfast – hunger and cravings kick in and they're more likely to eat impulsively later in the day. Breakfast skippers also tend to make poor food choices, which lower the nutritional quality for the entire day. "I don't have time" is the usual justification, but it's an unpardonable sin when all you have to do is set your alarm to wake you 15-20 minutes earlier.

What is the perfect meal size?

The size of your meals will depend on your total daily calorie needs and how many meals you eat, but if you follow the ***Burn the Fat, Feed the Muscle*** method of eating four to six times per day, meal size is easy to figure out.

On average, the optimal calorie intake for fat loss programs is about 2100-2400 per day for men and 1400-1800 for women. If you're a serious athlete or fitness enthusiast with high activity levels, your calorie needs will be higher. To get your ideal intake per meal, simply choose how many meals you want to eat and then divide your total daily calories by the number of meals:

Men:

Average optimal caloric intake for fat loss = 2300

Desired number of meals = 5 or 6

Target calorie intake per meal = 380 to 460 calories

Women:

Average optimal caloric intake for fat loss = 1600

Desired number of meals = 4 or 5

Target calorie intake per meal = 320 to 400 calories

As you can see, these are fairly small meals. Now let's contrast this with the calories in some meals you might encounter while eating at restaurants:

Big Mac and large fries = 980 calories

Denny's Grand Slam breakfast = 1100 calories

Porterhouse, steakhouse-size serving (one pound) = 1150 calories

Spaghetti with tomato sauce, restaurant serving (3 ½ cups) = 850 calories

Medium movie theater popcorn with butter = 1100 calories

Chinese Kung Pao chicken with rice (1 order) = 1620 calories

The problem is obvious: Most people, especially in America, have no awareness of calories per portion and are massively overeating. A typical restaurant meal, whether we're talking about steak, breakfast, Italian, Chinese, or fast food, can easily top 1000 calories (and that doesn't even include appetizers, drinks or desserts.)

It's fine to enjoy restaurant meals occasionally, but if you want to get leaner, you must control your portion sizes at all times. Understanding your daily energy needs and spreading your intake throughout the day in smaller meals will dramatically expand your awareness of calories and increase your ability to control portions.

The simplest and easiest way to split up your daily calories is to divide them evenly between each meal. However, there are some small adjustments you can make to your meal sizes that may help improve your results even further. One of these tweaks is called calorie tapering. The other is calorie targeting.

The calorie tapering technique

“Eat breakfast like a king, lunch like a prince and dinner like a pauper” is an old nutrition maxim, and while it's not a law that must be obeyed at all costs, it can still be good advice when fat loss is your goal. A typical eating pattern for most dieters consists of nothing in the morning or a skimpy breakfast like a bagel or doughnut, a big lunch such as fast food or cafeteria food, concluding with a huge dinner and of course, the ubiquitous late night snack. By contrast, we see most physique athletes eating a large breakfast and usually eating less at night.

When you eat is a matter of personal preference, but on the ***Burn the Fat, Feed the Muscle*** program, ideally, you should start eating early, so you can fit in most of your meals during the morning and daytime. If you sleep late and miss your first meal or wait until late morning or early afternoon to start eating, you leave a huge gap without any food coming in. For most people, this creates ravenous hunger and triggers overeating late in the day.

Yes, this means becoming a morning person if you're not one already. In his studies of successful people over several decades, personal achievement expert Brian Tracy noticed something very interesting. He said, "I've never found many highly successful people who were late risers." To put yourself among the successful few, get up early and then you can start eating early to fuel your active day.

A study published in the *International Journal of Obesity* even suggested that sleeping late could make you fat. The researchers, from Northwestern University in Chicago, discovered the following associations: Late sleepers had a higher body mass index, consumed more calories after 8 pm, consumed an average of 248 more calories per day than normal sleepers, ate more fast food and ate fewer servings of fruits and vegetables.

They also found that late sleepers ate fewer calories in the morning but then steeply increased their intake in the afternoon at which point their caloric intake matched and started to exceed normal sleepers around dinner time.

If you work third shift, you should simply eat your first meal whenever you wake up (even if that's in the afternoon), and arrange your meals so you eat every three or four waking hours (even if that's during the wee hours of the morning). If you have an unusual work schedule that doesn't allow breaks for long stretches of time, then don't worry if your meals are unevenly spaced. Just set up a regular meal plan you can stick with consistently, make sure you hit your calorie and protein targets by the end of your day and follow the other guidelines in this program the best you can.

The truth about nighttime eating

If you stay in a 24-hour caloric deficit, then you'll lose weight regardless of what time of day you eat. It's a myth that eating at night makes you fat - it doesn't - not in a cause and effect sense. However, eating more food early in the day and less at night is a strategy that helps many people achieve a daily calorie deficit more easily and avoid inappropriate late night eating.

Most experts today say that any extra fat loss achieved from eating less at night is nothing more than "calorie control for dummies." Others think there's more to it. The late bodybuilding guru Dan Duchaine believed there were hormonal reasons that made your body "dislike carbs at

night.” Circadian and diurnal rhythms can affect your hormones. Insulin, thyroid-stimulating hormone, cortisol and leptin concentrations after a meal have all been shown to differ with respect to time of day. Cortisol is highest in the morning. So is insulin sensitivity. Glucose tolerance and sensitivity to insulin are lower at night.

The question is, do any of these hormonal factors actually affect fat loss in a significant way? If they do, it’s probably not much, and probably hard to prove. But there is evidence that dieters are most vulnerable to overeating at night and that food eaten early in the day is more satiating.

The International Journal of Eating Disorders recognizes night eating syndrome as a clinically significant problem. The research shows that night eating can predict weight gain and is associated with obesity, high calorie intake and low protein intake. In one study, night eaters ate nearly 600 calories more per day than people who ate more of their calories early in the day.

John DeCastro’s research at the University of Texas at El Paso showed that food eaten in the morning is particularly satiating, which reduces caloric intake later in the day, while food eaten late at night lacks satiating value, which increases intake late in the day. His study concluded: “A dietary regimen that encourages the ingestion of relatively large amounts of food in the morning and restricts intake during the evening might reduce overall intake and serve as a treatment or preventative measure for obesity.”

What bodybuilding experts and fitness pros say about calorie tapering

If the calories and macronutrients for the day are the same, it’s doubtful whether eating less late in the day will make a huge difference in body composition results. However, calorie tapering (where you restrict food overall at night) or carb tapering, (where you restrict carbs specifically, at night) have been recommended for decades by physique athletes and coaches. Here’s what Ian King, Australian strength coach, author of *Get Buffed* had to say about it:

“I strongly recommend moving the last intake for the day as far away from bedtime as you can. 3-4 hours is ideal, but at least 2-3. This increases the length of the "fast" which in reality nighttime is - broken by breakfast. Using this method consistently is one of the most effective ways to lower body fat - and it doesn’t take a lot of effort.”

If you decide to try the calorie tapering technique, an easy way is to increase the size of your first meal of the day and decrease the size of your last meal of the day (usually by increasing or decreasing carbs, respectively). Alternately, you can taper your calories gradually, with each meal getting smaller as the day goes on. Some people also like to leave two or three hours between their last meal and bedtime, as Ian King suggested. That creates a longer night-time fast.

Strict rules such as, “Never eat carbs after 7 p.m.” or “Never eat within 3 hours of bedtime” are well-intentioned and may be helpful, but they are not mandatory. You’ll find plenty of people on hypocaloric diets who eat at midnight and have six pack abs - which reinforces the fact that energy balance at the end of the day is what matters first. Calorie or carb tapering is simply one of the details that you can experiment with and see how it works for you. It has worked for a lot of others, especially those who train early in the day.

There is one situation where you should not use the tapering method, and that’s if you train at night.

Carb targeting and post-workout nutrient timing

Training changes things. The overall concept of nutrient timing is to provide more fuel and nutrients when you need them the most and less when you need them the least. Although good nutrition is a 24-7 discipline, you need the most fuel around your workouts. If you train late in the day, you may want to move *more* carbohydrate calories to your post-workout meal, even if it’s in the evening. Moving some of your daily carbohydrate calories around your training times is known as carb targeting.

It’s very important to have one of your meals immediately after strength training because this is a critical time for muscle growth and recovery. If you only bother with one meal timing strategy, this would be it.

Many experts have devised formulas to calculate exact calorie, protein and carbohydrate amounts for your post-workout meal. For example, .5 grams of carbs per pound of lean bodyweight (1.1g/kg) and .25 grams of protein per pound of lean bodyweight (.55g/kg) is a common recommendation. This usually works out to about 30-50 grams of protein and 60-100 grams of carbs for the post-workout meal.

However, post-workout nutrition doesn’t have to be so formulaic. In fact, it can’t be. The optimal amounts of protein and carbs can vary a lot depending on total daily energy expenditure, the intensity of your workout and whether your goal is fat loss, maintenance or muscle gain. For endurance athletes, the carb amounts can be much higher. For strict fat loss programs, the carbs may be lower. For anyone who is weight training, the National Strength and Conditioning Association’s *Guide to Sports and Exercise Nutrition* suggests at least 30-40 grams of carbs and 20-25 grams of protein.

5 post-workout nutrition strategies to boost muscle growth and improve recovery

Post-workout nutrition is important, but most people make the subject impossibly over-complicated, micromanaging macronutrients and worrying about the last fraction of a gram.

Burn the Fat, Feed the Muscle makes it simple for you. Essentially, the post-workout meal will be the same as your other meals, with just a handful of minor adjustments.

First, eat soon after intense strength training. As John Ivy, PhD and Robert Portman, PhD, explain in their book *Nutrient Timing*, "The 45 minutes immediately following exercise is the metabolic window of opportunity. At no other time during the course of your day can nutrition make such a major difference."

Second, eat both protein and carbs in the post-workout meal. At one time, carbohydrates alone were emphasized as a way to replenish glycogen after workouts, especially in the endurance sports world. Other people insisted that post-workout protein was more important to rebuild muscle, especially in the strength and bodybuilding community. Scientists are still debating the optimal amounts, but research has now shown that consuming protein and carbs together is the ideal combination.

Third, it's ideal on your weight training days to make your post-workout feeding one of your larger and higher carb meals, even if it's in the evening. If you're using a reduced carb diet, one of the best times to consume your limited carbs is after intense weight training. The carbs you eat immediately after training rarely get stored in fat tissue; they're burned or partitioned into muscle glycogen. Post-workout carbs will also help restore blood sugar and cause a beneficial insulin spike at a time when insulin sensitivity in your muscles is high. This suppresses the catabolic hormone cortisol and drives amino acids into the muscle cells, stimulating protein synthesis.

Fourth, you can use a post-workout drink if that's your preference. Liquids are often recommended for post-workout nutrition because they're absorbed more rapidly than whole foods. If you opt for a liquid "meal," you can use a commercial post-workout drink or make your own using cheaply-obtained individual ingredients such as whey protein and carbohydrate powders. Recent research has convincingly shown that milk makes an excellent post workout drink as well (add chocolate protein powder for "healthy chocolate milk"). You can count the post-workout drink as one of your daily "meals."

Fifth, the post-workout period is a time when simple and high glycemic (quickly absorbed) carbs are acceptable. A whole food example is white potatoes. Most commercial post-workout drinks use maltodextrin, dextrose, glucose or a combination of these quickly-digested carbohydrates. If you're eating frequently throughout the day, then getting fast-absorbing carbs immediately after training isn't quite as important. However, if you're going to eat sugars, high glycemic index

foods or rapidly absorbed carbs, then right after intense and exhaustive workouts is the best time to do it.

If your primary goal is fat loss and you have the endomorph body type or carb-intolerant metabolic type, you may want to be more cautious about high sugar post-workout drinks and stick with natural food. Whole food can provide micronutrients and fiber, not just calories and carbs, while satisfying your appetite better, and those are decided advantages over liquids.

What about pre- and intra-workout nutrition?

Serious athletes, bodybuilders and sophisticated dieters may want to keep their eyes on future research regarding pre- and during-workout nutrition (which often comes in liquid form and sometimes includes additional amino acids or other nutrients). For the majority of everyday fat loss seekers, however, it's best to avoid over-analyzing these types of details. Just focus on the fundamentals at first.

Most people eat their pre-workout meal anywhere between 30 minutes and two hours prior to training. If you get nauseated from working out after recently eating, then simply push back your pre-workout meal far enough to allow time for your food to comfortably digest before training.

It's a common belief that the ideal pre-workout fuel should be high in carbs or even simple sugars for quick energy. It's best however, to stick with your usual natural, slow-burning carbs plus lean protein meal combination. Simple sugars eaten alone may cause a hypoglycemia in the middle of your workout and research has shown that pre-workout protein is very important to support muscle growth and maintenance.

The bracketing technique for pre- and post-workout nutrition

Many physique athletes report fantastic results by using the bracketing technique: They handle pre- and post-workout nutrition in one fell swoop by surrounding ("bracketing") their workouts with the two largest meals of the day. Even if you prefer lower-carb nutrition, placing your limited quantity of daily carbs around your weight training sessions is one of the biggest bang-for-your-buck nutrient timing strategies you can use.

7 meal planning and food preparation tips to make fat burning nutrition easy

Eating like a bodybuilder or fitness champion does require discipline until you get used to it. But with a little planning, preparation and scheduling, it's not as difficult as you might think. Here are seven tips to help make it easier.

1. Think of where you'll be tomorrow and plan your day in advance.

One of my success mentors, the late motivational speaker Jim Rohn, said, "Never start your day until you've finished it." That is simple but profound advice about time and life management. Always be thinking ahead to the next day and schedule your entire day in advance. If you put your ideal day on paper before you start it, you'll always have a plan and you'll never be caught off guard without healthy food.

2. Schedule a time for each meal and stick to it.

When you write out your daily meal plans, always select a start time for each meal. Once you establish it, make this your permanent meal time so you put habit force to work for you. If you stay with the same schedule long enough, eating at the prescribed meal time will become a deeply-ingrained habit that requires little or no thought. Regardless of how many times per day you choose to eat, you'll find that your body thrives on the regularity and even cues you with hunger when meal time arrives.

3. Use the meal-splitting technique.

Dr. Dan Benardot of Georgia State University, is a dietician and sports nutritionist to national and Olympic champions. As a way to make an athlete's frequent eating plan easier, Dr. Benardot recommends the meal-splitting technique. This allows you to make just three meals and spread them across six feedings. "Eat half of what you normally have for breakfast, and eat the other half three hours later" says Benardot. "Do the same for lunch and dinner. This will spread out the calories and ensure that you don't eat more than you're currently eating."

4. Prepare an entire day's worth of meals every morning or the night before.

Spontaneity may be nice in some areas of your life, but nutrition is not something you leave to chance. Early every morning, or each evening (the night before), cook your food and pack it in plastic containers, bag it or wrap it in foil, ready to take with you wherever you go. If you eat at restaurants or cafeterias, decide in advance exactly where you're going and what you'll be eating when you get there.

5. Cook in bulk.

A huge time-saving strategy is to cook large quantities of food for several days or even an entire week in advance and keep it refrigerated or frozen until you need it. Some people cook a whole turkey on Sunday, and then slice off portions as needed every day. Large batches of lean meats can also be easily prepared on a George Foreman grill or a jumbo grill pan. Eggs can be hard

boiled in quantity and refrigerated. Many of your carbohydrate sources such as potatoes, sweet potatoes, beans and brown rice can also be cooked in bulk. A crock-pot and rice cooker are standard features in many *Burn the Fat* kitchens.

6. Keep your kitchen and refrigerator well-stocked with healthy foods.

If your kitchen isn't well stocked with healthy food supplies, you'll be more likely to call for fast food delivery or buy convenience foods on impulse. Plan your food shopping, preferably setting aside the same day every week. (Many people choose Sunday so they're prepared for the busy work week ahead). Better still, and especially if you're a busy executive or professional, hire a personal assistant to shop for you, order groceries online or use a home delivery service. Never stockpile junk foods in anticipation of cheat meals. When it comes time for a treat meal, make sure you have to go (out of your way) to get it. If it's not in your house every day, you won't eat it every day.

7. Plan ahead when traveling.

Being in hotels, on the road or in a plane is no excuse to let your nutrition plan fall apart. All it takes is a little planning. If you book yourself into a hotel with a full kitchen and hit the grocery store, then your food preparation is business as usual. Road trip? No problem. Cook in advance and get a small, portable cooler. It also makes life easier when you think in terms of "portable foods." You can make tuna or turkey sandwiches or wraps using 100% whole grain bread, which don't need to be refrigerated and are easy to eat on the go. Or, try this amazing recipe, one of the all-time *Burn the Fat Feed the Muscle* favorites:

Apple-cinnamon High Protein Oatmeal Pancakes

Ingredients:

¾ cup of oatmeal
1 whole egg
3 egg whites
1 scoop of vanilla protein powder
Half an apple, chopped
Dash of cinnamon
Non caloric sweetener (optional)

Mix the ingredients in a bowl until they make a thick pancake-batter-like consistency. Lightly coat a frying pan with nonstick cooking spray. Pour the mixture into the pan and cook on medium until one side is lightly browned. Flip the pancake over until the other side is done.

Presto! Eat it hot, or wrap it in foil and take it with you for a super-convenient, fully portable, 400-calorie travel meal.

How snacking fits into the *Burn the Fat, Feed the Muscle* eating plan

Most people's snacks of choice are refined carbohydrates and fatty foods such as crackers, cookies, candy, muffins, pastries, potato chips and pretzels. This is mainly because packaged convenience foods and "carb snacks" are so readily available (it's not like you can grab a chicken breast or salmon steak at the checkout counter of every convenience store). If you follow the *Burn the Fat, Feed the Muscle* meal plan, you won't need snacks because you'll be eating small meals every few hours, so severe hunger and cravings between meals will be a thing of the past.

If you choose to stay with a traditional eating schedule of breakfast, lunch and dinner, then I recommend planning healthy snacks for between meals. For example, one mid-morning, one mid-afternoon and an optional evening snack (or protein shake). This way, you're still getting four to six feedings per day, but only three of them are sit-down meals that require cooking or food preparation. Even busy people can manage that very easily.

A man with a 2400 calorie-per-day target might split that into three meals of 550-600 calories each and three snacks of about 200-250 calories each. A female with a daily calorie goal of 1600 calories might go with three meals of about 425-450 calories each and two snacks of about 125-150 calories each. Post-workout drinks or nighttime protein shakes can be counted as a snack or a "meal" depending on how many calories it has.

Some snack ideas include raw vegetables (carrots, broccoli, celery, cherry tomatoes, cauliflower, etc.), fruit (all kinds, but beware of the high calories in dried fruits), nuts and seeds (in small quantities, within your calorie limits) non-fat or low-fat cottage cheese, non-fat or low-fat cheese, non-fat or low-fat yogurt, hardboiled eggs, sardines/canned fish and protein shakes.

Should you use meal replacements and protein drinks?

Work, school or family commitments can make it challenging for some people to eat all their meals on schedule. In some business or personal situations, it's not appropriate to open up a plastic container and have a 20-minute break for sweet potato, vegetables and salmon in the middle of the afternoon just because it's time for meal four. Whole foods should be your first choice, but in a time crunch, a meal replacement product (MRP) can be the difference between following your plan or not.

MRPs are usually high in protein and come as powder in tubs, canisters or individual packets. You simply mix it in water (or in milk if you have the calories to spare). Don't go overboard with shakes, however. These products are supplements, not a replacement for good eating habits. The primary advantage of meal replacement shakes over whole food is convenience.

What to eat when all else fails

In a pinch, most people reach for carbohydrate snacks, usually high in refined sugars. By contrast, if you look at the habits of bodybuilders and fitness pros, you'll notice something very interesting: they reach for protein. Eating protein by itself (without the carbohydrates) may leave you a little short on calories, but at least you'll be taking advantage of what is arguably the most important macronutrient during a fat loss program.

This is why it's a good idea to keep some protein powder or a high-protein MRP handy in case of a "nutritional emergency." Keep some in your desk, in your car and in your backpack, briefcase or handbag. Get a shaker bottle and fill it with two or three scoops of protein powder. Bring along a bottle of water and then you're ready to mix yourself a protein shake any time, any place. Two minutes and you're done with another feeding.

What about protein bars? Many so-called "nutrition" bars are a compromise at best and candy in disguise at worst. Read the labels carefully. You're likely to find refined sugars, corn syrup, trans-fatty acids and a variety of other artificial additives in the ingredients. Some are also very calorie dense for their small size and not very filling. If you can find bars high in protein, made with mostly natural ingredients (or make your own protein bars), they can make acceptable snacks for travel and convenience, but I wouldn't recommend them as a staple in your regular daily meal plan.

If there's a health food store or a smoothie bar that makes shakes nearby, you could pop in for a quick protein drink to tide you over until you get home for your next food meal.

What if there's nothing but fast food restaurants around? No problem - grab a grilled chicken salad. A convenience store? Grab a can of tuna or salmon - they make them now in foil bags and pop-top lids. Most stores these days even carry ready-to-drink protein shakes and even hard-boiled eggs. There's always a way when you're committed. If getting caught without food happens to you a lot, then you simply need to spend more time planning your schedule and preparing food in advance.

In the event that you miss a meal completely, don't get stressed about it. As long as you're following your plan the majority of the time, you'll get great results. Don't use missing one meal

as an excuse to quit or go totally off your schedule for the rest of the day. Get back on track starting with the next meal – that’s all there is to it.

The one universal trait of all people who get lean and stay lean

Whatever meal schedule you decide on, and whatever foods you choose to eat, establish a regular daily pattern, seven days a week. Because most people work Monday through Friday, some find it easier to follow their program on weekdays. On the weekends, it’s tempting to sleep in, miss meals, eat at restaurants, stay out late for drinks, have an entire cheat day or fall off your regular schedule.

Habits are a powerful force if you harness them to your advantage. Whatever behaviors you repeat on a daily basis, week after week, will become habitual. If you eat haphazardly, apply these principles inconsistently or follow the program five days a week and let it fall apart on weekends, you’ll never establish good habit patterns and you’ll never get optimal results.

The more you study this subject, the more you’ll realize that nutrition has to be customized – there’s no one-size-fits-all program that works for everyone. But consistency is the one universal trait shared by every person who gets lean and stays lean.

Become disciplined and consistent and you will succeed!

For a lot of experienced fitness enthusiasts, the information in this chapter was not new because nutrient timing is common knowledge among the fitness savvy and frequent eating has been the traditional approach in bodybuilding for decades. However, it’s talked about more often than it’s practiced, because it takes discipline to do it!

When starting the bodybuilding style of nutrition, most people love it because they have more energy and they never go hungry. But others say that eating five or six times a day is a royal pain. Like any new lifestyle change, after doing it for a while, it starts getting easier. Eventually, “feeding the machine” on a regular timetable will become such a deeply ingrained habit, you won’t be able to imagine doing it any other way.

Of course, you might think that all this meal planning sounds like too much trouble and you’d rather just eat like the average person – coffee for breakfast, whatever lunch is available, a king-sized dinner and then late night munchies. Then again, if you look around and see what kind of shape the average person is in, you may find that thought passes – quickly!

Chapter 8: Macronutrient Ratios: How to Optimize Your Body Composition With the Right Combination of Proteins, Carbs And Fats

"Each meal should be structured to include a lean protein, a starchy carbohydrate and a fibrous carbohydrate. The protein and fiber in this combination of foods slows the digestion of the carbohydrates, consequently providing consistent energy levels, sustained endurance, and a constant supply of nutrients to your body for energy, growth and repair."

—John Parillo, nutritionist and author of *High Performance Bodybuilding*

"The idea that people should not eat certain food combinations (for example, fruit and meat) at the same meal because the digestive system cannot handle more than one task at a time is a myth. The art of 'food combining' represents faulty logic and is a gross underestimation of the body's capabilities. In fact, the contrary is often true; certain foods eaten together can enhance each other's use by the body."

—Eleanor Whitney and Sharon Rolfes, authors of *Understanding Nutrition*

Why a calorie is not just a calorie

One misconception about nutrition is the purely thermodynamic view that "a calorie is just a calorie" and the *only thing* that matters is calories in versus calories out. A calorie deficit is a required condition for weight loss, but if creating an effective nutrition program were only a matter of total caloric intake and nothing else, then three isocaloric diets, the first composed of 100% protein, the second 100% carbohydrates and the third 100% fats, would all produce the same results. Common sense alone tells you that eating 2000 calories of fish and vegetables (lean protein and fibrous carbs) will not produce the same results as 2000 calories of potato chips and soda (processed fat and carbohydrate).

How you divide your calories between the three macronutrients – proteins, carbohydrates and fats - and which foods you choose from each category, can have a profound impact on your body and your health. Severely restricting any one of the macronutrients can lead to nutrient deficiencies and a drop in your physical performance and mental clarity. Your macronutrient and individual food choices can also affect your calorie intake. Some food groups are more calorically dense than others so it's very easy to over eat them. Other foods are extremely satiating, so you feel fuller on fewer calories and tend to eat less.

You can even see small differences in fat loss between two different diets at the same calorie level as a result of changing the macronutrient ratios. This doesn't imply that "magic" food combinations can alter the laws of thermodynamics, it simply reveals that a gross calorie is not the same thing as a net (metabolizable) calorie. For example, some of the caloric energy in fiber can't be absorbed by the human digestive system. There's also the varying thermic effects of

each macronutrient, most notably, protein. Due to its high thermic effect, a significant amount of the energy in lean protein foods is used just to digest it.

Your macronutrient ratios can also affect your hormones. This includes hormones of hunger and metabolism, which influence how many calories you consume or burn each day as well as hormones that influence energy partitioning. Partitioning refers to where your body sends the calories and nutrients after they're metabolized and what kind of body mass you lose or gain as a result. A calorie deficit will always result in weight loss, and a calorie surplus will always produce weight gain. The question is, what kind of weight will you lose or gain – fat or muscle? Hormones are major players in this process and what you eat can affect your hormones.

Bottom line: There's more to nutrition than just calories. To achieve all your goals - not just weight loss but fat loss, muscular growth, great health and peak performance - it's important to get the calorie level right *and* to balance your intake of protein, carbohydrate and fats properly.

The first rule of macronutrient ratios: eat proteins and carbs together at each meal

Before we talk about specific numbers and percentages, you must first understand the most fundamental rule of macronutrient ratios: Your nutrition program should never consist primarily of only one food type or one macronutrient – there must be a proper balance between proteins, carbs and fats.

Without doing any sophisticated number crunching, you can get your macronutrient ratios in the ballpark simply by having a serving of lean protein and a serving of complex carbohydrate at every meal (a small amount of healthy fat can tag along for the ride). If you frequently eat meals of carbohydrates or proteins by themselves, your ratios are more likely to be out of balance for the day.

Many diets fail to obey this rule right from the start by overemphasizing one macronutrient, such as an all protein diet, or an all fruits and vegetables diet. Diet gurus often claim that there's magic in the special foods they emphasize. It's closer to the truth to say that restricting entire food groups is simply a clever way to get you to eat less. Any weight lost through severe restriction is likely to return and comes at the expense of a potentially unhealthy diet that's missing major nutrients. With the exception of allergies, sensitivities and intolerances, eliminating an entire food group is never a smart idea.

The myth of food separating

A common myth in the diet world says that you should never eat carbohydrates and proteins together in the same meal. This is known as food combining. Actually, it would be more

accurately described as food separating, referring to the belief that certain foods, such as meat and potatoes or meat and fruit, shouldn't be eaten together. Popularized by a number of bestselling diet books, this fad still attracts followers to this day.

Arguments in favor of separating proteins and carbohydrates usually sound like this: “Protein digests in an acidic medium of pepsin (a digestive enzyme) and hydrochloric acid, while carbohydrate digests in an alkaline medium. Therefore, when protein and carbohydrates are consumed together, they can't be fully assimilated, resulting in poor digestion, incomplete absorption of nutrients and gastrointestinal disturbances.”

It has also been suggested that poor digestion from “improper” food combinations will weaken you, sap your energy, stress your immune system and even promote disease. One food combining diet author even made the ridiculous claim that by eating large quantities of fruit alone, the fruit enzymes would prevent the calories from being stored as body fat.

I've heard testimony from people who swear that eating only certain combinations of foods helped relieve their gastrointestinal distress. However, there's no scientific evidence proving that separating carbohydrate and protein can improve weight loss.

8 reasons to eat lean proteins and complex carbohydrates together at every meal to maximize fat loss and muscle growth

To gain muscle and lose fat, it's not only unnecessary to separate carbohydrates and proteins - it's counterproductive. Here are eight reasons why.

1. To stay in a predominantly anabolic state, where you're retaining more protein than you excrete, resulting in a net gain of muscle tissue, it's ideal to consume protein at regular intervals throughout the day. Proteins can't be stored like carbohydrates. If you only ate carbohydrate meals without protein, your body would have to get the amino acids it needed somewhere, and it could break down muscle tissue to do so.
2. To get the protein (amino acids) into the muscle cells efficiently requires insulin. Insulin is secreted most readily in response to eating carbohydrates. When a portion of carbohydrate is eaten with your protein, it facilitates the uptake of the amino acids into the muscle cell. This is especially important during the post workout meal.
3. Eating carbohydrates by themselves, especially the refined and simple kind, causes a rapid surge in blood sugar. Peaks in blood sugar are followed by valleys (also known as hypoglycemia), which triggers cravings, hunger and fatigue. If you suffer from persistent

hunger or cravings, it's often a result of eating too many sugars and processed carbs by themselves, rather than natural carbs in meals that also contain fiber and lean protein.

4. Protein eaten with every meal slows the digestion of the carbohydrates, resulting in steadier blood sugar and energy levels and a more moderate output of insulin - without the ups and downs of eating carbohydrates by themselves.
5. Studies have proven that protein provides an appetite-suppressing effect and makes you feel fuller, so eating protein at every meal can help you control your calorie intake.
6. Muscle glycogen is the primary source of energy for weight training, but your muscle glycogen stores are limited and must be continuously replenished. If your glycogen levels become chronically depleted, your performance and recovery may suffer. Advocates of very low carb diets claim that your body can learn to function on fat and protein. However, if you were to ask a group of champion physique athletes how a low carb diet affects them, the majority would tell you that it reduces their energy, lowers their intensity, causes their muscles to go "flat" and makes it difficult to get a pump. Even on carb-restricted diets, it's important to get *some* carbs every day to support your training.
7. Eating fiber-containing carbohydrates at every meal slows digestion, resulting in a steadier blood sugar level and more moderate insulin output.
8. Eating protein at every meal enhances the thermic effect, which enhances thermogenesis (metabolic rate). A meal consisting of only carbohydrate is less thermic than one containing a lean protein and a complex carbohydrate. A meal or snack that's high in fat without protein is the least thermic of all.

The ultimate meal combination for burning fat and building muscle

On the *Burn the Fat, Feed the Muscle* program, it's not a full meal if it doesn't contain a lean protein and a complex carbohydrate (starchy carbs, fibrous carbs or both). Eating a piece of fruit, raw vegetables, a nonfat yogurt, a cup of cottage cheese or a protein drink by itself is fine, but we would call that a snack, not a full meal.

The ultimate meal combination for a fat burning or muscle-building program is a lean protein, a starchy carbohydrate and a fibrous carbohydrate. (Fruit and dairy products can be added to this basic framework as you see fit. Some dairy products are also good sources of protein and actually count as the lean protein.) Here are several examples:

Meal Example 1:	
Food	Macronutrient Type
Yam	Starchy carbohydrate
Asparagus	Fibrous Carbohydrate
Salmon	Lean Protein

Meal Example 2:	
Food	Macronutrient Type
Brown rice	Starchy carbohydrate
Oriental vegetables	Fibrous carbohydrate
Chicken breast	Lean protein

Meal Example 3:	
Food	Macronutrient Type
Baked potato	Starchy carbohydrate
Broccoli	Fibrous carbohydrate
Top round steak	Lean protein
Mixed green salad	Fibrous carbohydrate

Meal Example 4:	
Food	Macronutrient Type
Oatmeal	Starchy carbohydrate
Blueberries	Natural simple carbohydrates
Egg white omelet with one yolk	Lean protein
Mushrooms, onions, tomatoes, peppers	Fibrous carbohydrates

How to create meal plans using macronutrient ratios

Macronutrient ratios simply refer to the percentage of your total daily calories that come from protein, carbohydrate and fat, respectively. To create a meal plan, you first calculate your total daily energy expenditure based on your weight and activity level. Once you've figured out your calorie needs, you choose your desired percentages and divvy up the calories. Think of dividing up your calories like you'd slice up a pie. For example, if you sliced your daily nutritional "pie" into three equal portions, the ratios would be 33 1/3% – 33 1/3% – 33 1/3%.

Developing nutrition plans based on ratios of protein, carbohydrates and fats has been practiced for decades among bodybuilders. However, it wasn't until 1995 that nutrient ratios gained widespread public attention with the release of a book by Dr. Barry Sears called *The Zone*. This

book made macronutrient ratios household words because the Zone program was based on one nutrient ratio of 40% carbohydrate, 30% protein and 30% fat (40-30-30).

Two valuable lessons you can learn from the 40-30-30 diet

By following the 40-30-30 ratios, Dr. Sears claimed you would lose weight, gain muscle, improve athletic performance and cure a whole list of diseases and health problems. Despite its best-seller status and continued popularity to this day, the 40-30-30 diet has received some criticism. One possible flaw of the 40-30-30 program as Dr. Sears prescribed it in his 1995 book is the lower than optimal calorie recommendations.

Suppose you're a 175 pound (79.5 kg) man and your body fat is 10%. That means you have 157.5 pounds (71.6 kg) of lean mass. If you work out five times per week for one hour, then according to the Zone diet you should eat 1680 calories for the day. That's hundreds of calories lower than basal metabolic rate and a lot less than most guys get to eat on ***Burn the Fat, Feed the Muscle.***

The protein recommendations are on the low side as well: .8 grams per pound of lean body weight, which is 126 grams per day. That's enough to satisfy basic health needs and plenty for a couch potato, but it's not optimal for supporting a program with cardio and intense weight training. If you did the same math for females, you'd again see the calories coming up short. This demonstrates that macronutrient ratios alone are not enough. You have to pay attention to your calories as well as the grams of protein, carbohydrate and fat.

Some mainstream health and nutrition organizations including the American Dietetic Association, the Mayo Clinic, the American College of Sports Medicine, and the Center for Science in the Public Interest gave a negative rating to the Zone diet. However, when you analyze any diet program, you can almost always extract some highly useful information, even if you don't follow it 100%.

The Zone made some important contributions to modern trends in nutrition that have shifted the predominant thinking about fat loss in the bodybuilding and weight loss world since 1995.

First, the Zone brought to the public's attention the importance of having a reasonable balance between proteins, carbohydrates and fats instead of being heavily slanted toward mostly carbohydrate or mostly protein. It also pointed out the dangers of eating large amounts of processed carbohydrates such as white breads, white pastas, refined cereals, fat free snack foods and baked goods, and it did so at a time when low fat, high carb diets were all the rage.

The second important point was the idea of combining a lean protein and a complex carb food at every meal. This is probably one of the most important aspects of a nutrition program designed for improving body composition. This combination helps to regulate appetite, manage the hormones responsible for fat storage and provide a steady flow of amino acids from protein foods for muscle growth and maintenance.

No single macronutrient ratio is the best

Many dieters are tempted to believe that there's one magical macronutrient ratio that will be the answer to all their body fat problems, but one perfect ratio does not exist.

- ✓ No ratio has any magical fat-burning or muscle-building properties.
- ✓ No ratio will override the law of calorie balance. Any impact nutrient ratios have on weight loss is minimal compared to the effect of calorie levels.
- ✓ No nutrient ratio will prevent metabolic slowdown if your calories are too low, too long.
- ✓ No nutrient ratio will prevent you from gaining fat if your calories are too high.
- ✓ No nutrient ratio will allow you to gain muscle if your calories are too low.
- ✓ No nutrient ratio will work for everyone. Optimal nutrient ratios depend on goals, differences in body type and carbohydrate tolerance or metabolic type.

The first step in designing a daily meal plan for fat loss is to be certain that you've pinpointed your ideal caloric intake. Once you've done that, you can move on to step two: calculating your optimal ratios and grams of protein, carbohydrate and fat. As with calories, there's no single best prescription. Any program that suggests only one ratio for everyone is ignoring nutritional individuality. Your ratios must be customized, but as you will learn shortly, there's a sensible place – a baseline - where *everyone* can start.

Macronutrient percentages defined

How do you define a low carb or high carb diet? When is a nutrition program considered high protein? What does a high fat diet really mean? Drawing a rigid line between ratios is difficult, but for the purpose of our discussion in the *Burn the Fat, Feed the Muscle* program, let's clarify what we're talking about when we refer to high, medium and low macronutrient percentages.

Carbohydrate definitions:	
Carbohydrate Level	Percentage of total calories
Very high carb	65-70%+
High carb	55-60%
Moderate carb	40-50%
Low carb	25-35%
Very low carb (ketogenic)	About 10-15% or less

Protein definitions:	
Protein Level	Percentage of total calories
Very high protein	40-50%
High protein	30-39%
Moderate protein	21-29%
Low protein	15-20%
Very low protein	Less than 15%

Fat definitions:	
Fat Level	Percentage of total calories
Very high fat	40% or more
High fat	30-39%
Moderate fat	20-29%
Low fat	10-19%
Very low fat	Less than 10%

With such a wide range in each category, how do you know what percentage is ideal? Well, there is no best way, but one tip is to avoid the extremes. Extremely low or extremely high ratios of anything are usually not the best approach, although there may be an occasional exception.

Bodybuilders often raise their protein to as much as half their calories prior to competitions when their food intake is low and training intensity is high. Endurance athletes sometimes require carbohydrate intakes so high they're off the charts. Generally, however, the best approach for fat loss is moderate carbs, moderate to high protein and moderate fat. That's what you call balance! From this baseline, you can make modifications as your needs require.

Popular approaches to nutrient ratios

Before we talk about your starting point or baseline ratios, let's take a look at the broad spectrum of macronutrient ratios recommended by popular diet programs.

High carbohydrate, very low fat

In the 80s and 90s, most diet programs called for very low fat, low protein and extremely high carbohydrate. The Pritikin diet, which recommended 70% carbohydrate, 20% protein and 10% fat, is one example. Other programs falling into this category were Dean Ornish's Eat More Weigh Less program, Robert Haas' Eat to Win and some forms of vegetarianism.

If high quality carbohydrates are chosen (nutrient- and phytochemical-rich fruits, vegetables, whole grains and natural starches), and minimum protein needs are met, this is a healthy way to eat for most people. If the calories consumed are less than the calories burned, then this approach can help you lose weight. However, it's so lopsided in favor of carbohydrates and short on healthy fats and lean proteins, you can't really say it's balanced, and this approach definitely isn't for everyone.

Some people don't respond well to high carb diets, no matter how carefully they choose their carbs. People with metabolic syndrome and carbohydrate-intolerance may actually see increases in blood lipids (particularly triglyceride) and have difficulty managing blood sugar when their carbs are too high. Very high carbohydrate, low fat diets may also be short on essential fats, and the protein levels might be too low to support serious weight training.

Very low carbohydrate, high fat, high protein

At the other end of the spectrum you have the very high fat, high protein, very low carbohydrate diets. The Atkins Diet is the most popular. Others include Protein Power, the Carbohydrate Addicts Diet, Sugar Busters, the Ketogenic Diet, the Anabolic Diet and a long list of other programs that impose strict regulations on the amount of carbohydrate you can eat.

The basic hypothesis of most very low carb diets is that carbohydrates cause fat storage because they increase insulin production. Carbohydrates and insulin are portrayed as bad guys. One of the objectives is to control insulin by reducing carbohydrates, and this will supposedly cause body fat loss independent of caloric intake.

There is a grain of truth in these arguments, because insulin is a storage hormone. Unfortunately, this fact has been taken out of context and distorted. Contrary to what certain diet gurus tell you, carbohydrates are not fattening. What's fattening is eating more calories than your body can use at one time. Insulin can be a double-edged sword, but when you're in a calorie deficit, losing weight, eating natural foods and training diligently, insulin and blood sugar management are usually not a problem.

Another flaw in recommending a very low carb approach across the board is the assumption that *everyone* has difficulty metabolizing carbs, so everyone should be on a low carb diet. A large percentage of obese people do have symptoms of metabolic syndrome and carb intolerance. However, according to my research and experience working with thousands of clients with a wide variety of body fat levels, I estimate that only 20-30% of the overall population is carb intolerant. Only a fraction of that 20-30% is *seriously* carb intolerant.

My estimate is also supported by data from the National Institutes of Health, which says 22% of the general population has metabolic syndrome, a cluster of symptoms which includes blood sugar problems. Carbohydrate restriction usually helps speed up fat loss, for a variety of reasons you'll learn in chapter 12. But that's not the same as saying carbohydrates are fattening.

It's interesting to note that almost every bodybuilder or fitness competitor uses some variation of the low carb, high protein diet to prepare for competitions. However, bodybuilders and physique champions rarely fall into the group of zealots who demonize carbs. Instead, they restrict carbs at times and use them to their advantage at others. Very low carb diets are not a panacea. At their worst, they can become unhealthy, unpleasant, catabolic, mind-numbing and energy-draining. At their best, they're a tool you can use for short periods for ambitious goals, such as bodybuilding competitions, photo shoots, plateau-breaking or stubborn fat loss.

High carbohydrate/low fat/moderate protein: The original bodybuilder's diet

The 60-30-10 nutrient ratio is the program I originally used when I first started bodybuilding. When I began competing, it was the late 80s and early 90s, right in the middle of the fat phobia era. My nutrition plan was high in complex carbohydrates and low in fats simply because it was in vogue and widely accepted. Even prominent authors and experts recommended it: 60-30-10 (or thereabouts) was the preferred method in Keith Klein's Get Lean system, Cliff Sheat's Lean Bodies and Larry North's Living Lean program. Professional bodybuilders like Lee Labrada and popular bodybuilding nutritionists such as Chris Aceto, John Parillo and many other big names of that era also endorsed low fat, moderate protein, high carb eating.

So I conformed and did what every one else was doing – and it worked! The 60-30-10 ratios were effective for fat loss and I felt great. I later discovered that one small adjustment improved my results even further - significantly.

My amazing discovery from over 14 years of experimentation and research

It wasn't until the late 90s that I really began to reach my best physical condition, winning multiple overall bodybuilding titles and looking my absolute best ever. For years, I had experimented with every nutrient ratio imaginable from very high carb, zero fat diets to high fat, zero carb ketogenic diets, and I finally stumbled onto a formula that worked beautifully.

I gained more muscle in the off-season, lost more fat in the contest season (getting as low as 3.4%) and stayed leaner all year round, maintaining an 8-9% body fat percentage without much difficulty. I also moved up a full weight class. I was stronger. My energy was better. My mental focus was sharper.

What was this adjustment? Believe it or not, I ate more fat! I dropped the carbohydrates by 10% and added in 10% fat from healthy fat sources such as flaxseed oil, nuts (like almonds and walnuts), oily fish like salmon and extra virgin olive oil. I even allowed myself some lean red meat and one or two egg yolks a day (instead of only egg whites, the bodybuilder's staple protein). In the next chapter, you'll learn more about the reasons why small amounts of good fats are so important.

Burn the Fat Baseline Nutrition – Here's where you begin

My small adjustment to ratios of 50-30-20 might have worked well for me simply because I have an endo mesomorph body type, but it also worked for the vast majority of my clients and personal coaching protégés. The combination of my personal experience with the results from my clients convinced me that this ratio was a good place to start and it became the baseline of the ***Burn the Fat, Feed the Muscle*** program.

If fat loss is your number one goal and you want to achieve it the healthy way without losing muscle or energy, then you usually can't go wrong with 50% carbohydrates, 30% protein and 20% fat as your starting point.

These numbers are not intended as a rigid prescription; your ratios might need adjustments depending on your body type. For fast metabolism or highly active athletic types, 55% carbohydrates or even 60% carbohydrates works well. For endomorph or carb intolerant types, 40% carbohydrates might be a better place to start. But before you can make any changes for your body type and goals, you must first establish a starting point or baseline.

The starting point for an effective fat-burning and muscle-building nutrition program, often called "baseline nutrition," is 50% carbs, 30% protein, and 20% fat.

The most important lesson you will ever learn about permanent fat loss

Whenever you want to master a new subject or acquire a new skill, the first thing you have to learn is the basics. If you have a shaky foundation, then nothing else you do will matter - your castle will crumble. As Emerson wrote in his essays, "The height of the pinnacle is determined by the breadth of the base."

The most important lesson you can ever learn about nutrition and fat loss is to master the fundamentals first. Jim Rohn once said, "You should always be suspicious of someone who says they've discovered a new fundamental. That's like someone saying they're opening a factory to manufacture antiques." That's good advice in this day and age where there's a new diet fad being promoted every year.

The problem with many dieters is that they're always looking for the latest, greatest craze or focusing on little details while overlooking the fundamentals. Why? Because fundamentals are boring. Fundamentals are basic. Fundamentals aren't glamorous. Fundamentals aren't marketable. However, fundamentals are also responsible for almost all of your results!

The Pareto Principle, also known as the 80-20 rule, states that 20% of your actions – the vital few - will be responsible for the vast majority of your results. The other 80% - the trivial many – is minutia. Most people are wasting their time on minutia. They're constantly chasing after the secret ratios or the magic food combinations, all the while missing the simple and obvious factors that make the biggest impact on their physiques.

Establish a baseline first, then experiment and adjust as needed

If you want to experiment with your food choices and macronutrient ratios to satisfy your curiosity and see what combinations work best, by all means do it. But not until you've mastered the fundamentals, established a baseline and measured the results first. If the baseline nutrition produces good results for you, stay your course and don't change a thing – no matter what new trend comes along.

Most diet programs begin with some type of induction or quick-start phase that is extremely restrictive (such as dropping to zero or close to zero carbs). A quick drop in scale weight right from the beginning can be motivating, so there's a legitimate psychological rationale for this tactic. However, ***Burn the Fat, Feed the Muscle*** does the opposite of the popular quick fix diets: we master the fundamentals and establish a baseline first, then we make the nutrition program progressively stricter as we need to, based on our weekly feedback.

I like the strict high protein, reduced carb diets at certain times for certain purposes. But a common beginner's mistake is trying advanced and sophisticated fat loss techniques or obsessing over details before you've even handled your most basic nutritional needs. If you're finding it hard to be consistent with your meal schedule, get enough protein, avoid junk like sugar, alcohol and fried foods or keep track of your calorie intake, you're not ready for an advanced program. Go back and master the basics first.

The only way you'll ever discover what works best for your body is to get your baseline nutrition established first, get into a feedback loop, measure your weekly progress and make adjustments based on your results. In other words, don't jump into anything aggressive like a high protein, low carb diet until you've exhausted your other options. And remember, don't play all your cards in the first hand. It always pays to leave a few tricks up your sleeve to deal with progress plateaus when they occur later on down the road.

The only exception to this rule is if you're on a time deadline to meet a goal. Then you might need to jump into a stricter phase of the diet right from the start.

No single macronutrient ratio will work for every person and every goal

Because macronutrient percentages are relative, it doesn't make sense to prescribe only one nutrient ratio for every person across all types of programs. If you use a fixed macronutrient ratio across all three types of diets – hypocaloric (deficit), isocaloric (maintenance) and hypercaloric (surplus) – that could cause some over- or under-estimation of your macronutrient needs. This is especially true for outliers on the extreme high or low end of the bodyweight and activity ranges.

Regardless of whether you prescribe meal plans by percentage of total calories or grams per pound of body weight, you still have to choose the proper amount of protein, carbs and fat for your personal needs. There's room for error with either method. But as long as you calculate calories correctly and double-check the grams of each macronutrient, especially protein, our percentage method works wonderfully for creating fat loss menus when you know a deficit is required. The key is customization.

One place where many diet programs go wrong is by rigidly prescribing one nutrient ratio for everyone. The correct macronutrient ratios can vary greatly depending on your body type, your goals and on your training volume and style.

Bodybuilders, for example, thrive on more protein than people who are sedentary. The pre-contest bodybuilder would be better off with as little as 25-40% of his or her calories from carbohydrates with a higher ratio of protein to help control calories, stimulate thermogenesis, preserve lean body mass, mobilize more body fat and reduce water retention.

Endurance athletes, on the other hand, sometimes require calorie and carbohydrate intakes that start where the average person's end. When you calculate the percentage of calories from carbs, it often makes up the vast majority – sometimes 60-70% – of their total calories, so the standard macronutrient ratios or grams per pound of bodyweight guidelines are out the window.

Although bodybuilders and endurance athletes represent the far ends of the fitness spectrum, they help illustrate how important it is to customize.

Adjustments for nutrient ratios by body type

Mesomorph

The mesomorph could probably follow almost any nutrient ratio and still get results. I know some mesomorphs on the 50-50 diet; 50% McDonald's and 50% pizza. They still grow muscle like weeds and have ripped abs. I'm not endorsing this approach, just making a point. If our

genetically gifted mesomorph friends would go with 50% carbohydrates, 30% protein and 20% fat, from more nutritious foods, they would get even better results.

Ectomorph

An ectomorph rarely needs to restrict carbohydrates. The ectomorph usually isn't concerned with losing body fat. Usually their goal is to gain muscle, and for gaining muscle, a meal plan composed of 50% carbohydrates with 30% protein and 20% fat would be ideal.

Endomorph

It's the endomorph who needs to pay more attention to macronutrient ratios. Overweight endomorphs are usually more insulin resistant and carbohydrate intolerant than the general population, so reducing carbs a bit is almost always helpful. Some endomorphs might even want to start at about 40-45% carbohydrates, then consider further reductions based on the weekly results.

Adjustments to the baseline diet ratios for maximum fat loss

For short periods of time when maximum fat loss is desired, the baseline ratio of 50% carbohydrates, 30% protein and 20% fat can be shifted to a higher ratio of protein and a lower ratio of carbohydrates. This increases metabolism through the thermic effect of food, helps reduce hunger and helps protect lean body mass when the calorie deficit gets more aggressive.

The reduction in carbohydrates is most easily achieved by cutting your intake of concentrated starchy carbs and grains (such as pasta, bread, rice, potatoes, cereal, and so on), leaving the less calorie-dense fibrous carbohydrates (such as green vegetables and salads). You'll learn more about this higher-protein, reduced-carb, maximum fat loss "competition diet" in Chapter 12.

Avoid extremes on either end of the spectrum

Reducing carbohydrates and increasing protein can give you some measurable advantages when it comes to fat loss. The more you restrict carbs however, the more difficult it is for most people to stick with it long enough to see their goal to completion. If the carb restriction is extreme, there's an increased risk of side effects such as severe hunger, low energy, loss of lean tissue and decreased mental focus. Or, as some of my clients have eloquently stated, "It sucks."

Fortunately, a zero or very low carb diet is not necessary. Even a moderate reduction in carbs seems to help accelerate fat loss without the negative side effects of high protein, zero carb diets.

It's usually wise to steer away from anything extreme. That rules out extreme low carb or extreme high carb diets. The middle way is the best way.

Maintainability is a major benefit of the 50-30-20 ratio. A truly balanced nutrition program is one that you can comfortably maintain as your new lifestyle. Dividing up your macronutrients into these ratios creates a nutrition plan that's balanced and easy to sustain for the long-term.

Perhaps most important, this ratio is healthy. A balanced macronutrient split using a wide variety of foods ensures that you get the optimal amounts of all the essential nutrients, including protein, carbohydrates, essential fatty acids, vitamins, and minerals. A wide variety of healthy food will also guard against excesses of potentially toxic substances that might accumulate if you over-emphasized one food or one macronutrient.

The 3-2-1 method for calculating nutrient ratios

A simple way to estimate your nutrient ratios is to follow the 3-2-1 rule. Imagine your plate divided into six sections like slices of a pie. Fill up three slices (3/6 or 50%) with natural carbohydrates like potatoes, yams, oatmeal, whole grains, fruits and vegetables. Fill up two sections (2/6 or 33%) with lean proteins like egg whites, chicken or fish. Finish with one section of fat (1/6 or 17%). This easy method puts you very close to the optimal ratios for a baseline diet and you don't need to be a math whiz to figure it out.

The spreadsheet method for calculating nutrient ratios

The 3-2-1 method is a great way to estimate your nutrient ratios, but there is a more accurate technique. It also happens to be free and you probably already have it on your desktop or laptop computer – it's a plain old spreadsheet like Microsoft Excel.

These days, there's no shortage of nutrition apps, software and online tools for creating menu plans. Some of them are quite good and many of them are very convenient because they also contain food databases and they're compatible with mobile devices or smart phones. We have our own meal planning tools in our members-only community at www.BurnTheFatInnerCircle.com.

Even if you prefer the more sophisticated software programs and online tools, they're all based on the same simple idea: creating daily meal plans on a spreadsheet. If you're not computer savvy, you don't know how to use a spreadsheet or you're just old-fashioned, you can still do your macro calculations quickly and easily with a calculator, a pen, a piece of paper and a few simple formulas.

3 conversions you need to know to determine your macronutrient ratios:

To calculate your ratios, take your total caloric intake for the day and multiply it by your desired percentage of each macronutrient. Then, divide the calories from each macronutrient by the calorie content per gram. You'll need to know the following three conversions, also known as the Atwater factors, to calculate your ratios:

1 gram of carbohydrate = 4 calories

1 gram of protein = 4 calories

1 gram of fat = 9 calories

Example for a 2400-calorie-per-day meal plan:

Macronutrient Type	Percentage of Total Calories	Conversion to Grams
Carbohydrates 50%	.50% X 2400 calories = 1200 calories from carbohydrates	1200 carb calories/4 calories per gram = 300 grams of carbs
Protein 30%	.30% X 2400 calories = 720 calories from protein	720 protein calories/4 calories per gram = 180 grams of protein
Fat 20%	.2 X 2400 calories = 480 calories from fat	180 fat calories/9 calories per gram = 53 grams of fat

If you work on hitting your ratios at every meal, then your ratios for the entire day will take care of themselves. However, not every meal needs to have exactly the same amount of carbohydrates and total calories. If you're using the carb tapering or carb targeting methods, your morning and post-workout meals may be larger and contain more carbs.

Your goal is to come as close to your macronutrient target as possible when you add it all up for the day. Don't worry about being perfect – there's no need to be a macronutrient micromanager. If your daily numbers are within 5% of your target in either direction, that's close enough.

Couch potato nutrition vs. bodybuilding nutrition

Probably the most important reason to follow the 50 - 30 - 20 nutrient ratios as your baseline is because these percentages are designed for people involved in serious weight lifting and cardio training. Conservative and traditional dieticians will sometimes tell you that 30% protein is too high. They'll insist that the protein should be 15% and the fat 30%. That's couch potato advice. It has nothing to do with you if you're training hard.

Your success with ***Burn the Fat, Feed the Muscle*** will be based on how well you consistently combine all four elements of the program: nutrition, cardio training, weight training and mental training. If you're not training hard, you're not following this program. If you're training hard, your nutrition needs are different than couch potatoes. When you see nutrient recommendations for the general population, keep in mind that the average person is sedentary and that minimum and optimum nutrition needs are two completely different concepts.

Trusting your nutrition intuition

Did you ever notice how some people tend to gravitate toward a certain style of eating without anyone telling them to do it? Why do some people instinctively become vegetarians while others are heavy meat eaters? Why do some people avoid wheat and dairy? Why do some people crave certain foods? The reason is their bodies tell them so, and wisely, they listen.

I'm not an advocate of total vegetarianism, but if your body tells you not to eat much meat, then I believe you should listen and explore other protein sources. If your body tells you you're carbohydrate intolerant, listen. If you think your carbs are too low, listen. If a certain food disagrees with your stomach, listen. Pay attention to your results each week and listen to your body.

The idea of adjusting your nutrition intuitively may upset some of the left-brained scientific types, and if I say that scientists are usually not the ones with the best bodies, I'm liable to be accused of an ad hominem argument. Nevertheless, the people with the best bodies are the ones who train hard, eat properly, track their results and do what their bodies tell them to do, regardless of what the latest study says.

If you navigated *only* by intuition, that would not be intelligent. You need a program that's scientifically based and carefully planned out. On the other hand, blindly following a program without the flexibility to make adjustments along the way is also a recipe for failure. Making the right weekly adjustments requires a scientific approach, real world feedback as well a keen intuition.

Most people want to be handed a prescription. They're waiting for a guru to come along, do all the thinking for them and say "Here! Eat 33.5% protein, 47.9% carbohydrates and 18.6% fat - these are the magical ratios." Well, allow me to share the real secret: There is no magic combination of protein, carbs and fats! If you train hard, get all the nutritional essentials and monitor your calories to ensure a deficit, you'll get lean with any reasonable macronutrient combination.

No protein-carb-fat ratio needs to be followed like an iron law. Experiment to find what works best for you. Give yourself some leeway in either direction. For example, if you're on the baseline plan of 50-30-20 and you're uncomfortable with the amount of protein, then drop the protein slightly, bump up the carbs to 55% or 60% and pay attention to the results.

If you think high carbs are problematic for you, then drop the carbs to 40% or so and increase the protein and fat a little bit. If you think you're extremely carb intolerant, or you want to get ripped for a fitness competition, then gradually bump up the protein, bring down the carbs even lower and see what happens.

Macronutrient ratios aren't the ultimate key to fat loss, they're simply an easy way to set up your daily meal plans and ensure that you get optimal amounts of the major essential nutrients. Regardless of whether you eat high carb, low carb or anywhere in between, if you eat too many calories, you won't lose fat – it doesn't matter if you're "In the Zone" or not.

In the next three chapters, we'll take a closer look at each one of the macronutrients and you'll learn everything you need to know about proteins, carbohydrates and fats to get leaner, healthier and more muscular.

Chapter 9: Fats: The Good, the Bad and the Ugly

"The fact is that some fats are absolutely required for health, while others are detrimental. Some fats heal, and other fats kill. A substantial amount of our calories should come from fat."

—Udo Erasmus, Ph.D., author of *Fats That Heal, Fats That Kill*

"Unfortunately for the much maligned lipid, fats and oils have been lumped together in the minds of most bodybuilders as having the same properties, with the result of bodybuilders trying to avoid ALL fats and oils for fear of adding body fat and looking like the Pillsbury dough boy. Well, I am here to tell you that fats have gotten a bad rap. There are some good fats and there are some bad fats. The difference between the two is substantial and of great importance."

—Will Brink, author of *Priming the Anabolic Environment*

The missing link discovered: A dose of “healthy fats”

In the last chapter I revealed how after a long period of practically zero fat dieting, I took my results to a higher level with one small change – I added more fat. But not too much fat, and not just any fat. Dr. Udo Erasmus, one of the world’s leading experts on dietary fats, says there are “fats that heal” and “fats that kill.” Adding the *wrong* kind of fats can clog your arteries, increase fat storage and wreak havoc in your body. Adding the *right* kind of fats can turbo-charge your energy, burn more fat, boost muscle-building hormones, increase your strength, enhance insulin function, strengthen your joints and even improve your skin tone.

With benefits like these, good fats may sound like some kind of wonder drug, and in many respects, the effects *are* almost drug-like. Surprisingly, you can get these miraculous results simply by eating small amounts of foods or oils rich in the healthy good fats while reducing or avoiding the unhealthy bad fats.

Fats made simple

Most books about nutrition include a long discussion of the chemistry of fatty acids. They are filled with charts of fat molecules and talk of hydrogen, carbon, double bonds, methyl groups and carboxyl groups. I’ve always found that any time I start discussing the complicated scientific stuff in detail with my clients, they either doze off or just sit there, jaw agape, face expressionless with a blank stare like a deer caught in headlights.

That’s why I decided the best approach to a chapter on fats in a manual about practical fat loss techniques would be to skip all but the most basic and essential chemistry. Instead, I’ll discuss fats in layman’s terms and stick to practical suggestions and guidelines: Eat this, don’t eat that,

eat a little of this, never eat that, and so on. I'm sure you'll be glad I did, and by the time you finish reading this chapter, you'll understand exactly:

- *Why* all fats are not the same
- *What* kinds of fats you should eat
- *Which* type of fats you should never eat
- *How much* fat to eat for best results

You'll also learn about some essential fatty acids you can find in almost any health food store that are among the few nutritional supplements worth taking.

The era of fat phobia

The first time I ever picked up a barbell was in 1983 – right in the heart of the “fat phobia era.” During the 80s and early 90s, the magazines, television and nearly all the media pounded the message into our brains that fat was bad. No distinction was made between types of fats; the message was black and white: “Fat is unhealthy and fat makes you fat.”

This spawned an entire industry of fat-free foods such as frozen dinners, lunch meats, candy, ice cream, yogurt and nearly every other treat you can think of. This was the age of the fat-free cookies and non-fat cakes, and almost all of us partook of these deliciously sweet and seemingly guilt-free goodies. We ate them without fear and believed it was healthy since the label said “zero grams of fat!”

Even though dietary fat consumption decreased dramatically over the two decades that followed, a very strange thing happened: Obesity and health problems continued to increase. According to U.S. government statistics, the adult obesity rate rose from 15 percent in 1980 to 32 percent in 2004. Today there are more overweight people than ever before – more than 120 million in the United States and over one billion worldwide! Heart disease, diabetes and cancer are still three of the biggest killers, and it seems there's no end in sight to these epidemics.

If we cut down our fat intake so much in the 80s and 90s, then how could it be that we continued to get fatter and our health got worse? Part of the answer is so glaringly obvious it's almost embarrassing:

“FAT FREE” DOESN'T MEAN SUGAR FREE OR CALORIE FREE!

What's happened over the past few decades is that many people cut the fat and simply replaced it with sugar. Even foods that *always were* fat free suddenly started sporting new labels that proudly proclaimed, “No fat!” A food can say “fat free” on the label but it's 100% sugar! If you

eat too much sugar, it doesn't matter how little dietary fat you eat – you're still going to get fat - and you'll probably get sick too!

Replacing fat with sugar... Out of the frying pan, into the fire

When people dropped the fat from their diets, they created a whole new set of problems. Without fat and fiber, there's nothing to slow the absorption of carbohydrates into the bloodstream. Blood sugar rises quickly, followed by the excessive release of insulin and then a blood sugar crash. A calorie deficit is a prerequisite for weight loss, but blood sugar and insulin management are also important – not just for getting leaner, but for your health as well.

Processed fats can be very harmful to your body, but processed carbohydrates and refined sugars are every bit as responsible for the climbing disease and obesity rates today. Most people have heard that eating more fatty foods increases the fats in your blood. What few people realize is that if you have a carb intolerant body type, a high sugar diet can have an even more damaging effect on blood lipids, especially triglycerides. A high sugar intake can also send you down the path toward type 2 diabetes.

Your nutrition program needs to have the proper balance of healthy fats, healthy carbs and lean proteins, and it must be low in processed carbs *and* low in processed fats. Only then will you get your calorie intake under control, enjoy better health and see your body fat finally begin to disappear.

Why a zero fat diet is not the best way to burn body fat

In the last chapter, we defined a very low fat diet as anything under 10% of total calories from fat. On 2400 calories per day, that's 26 grams or less. On 1500 calories, that's only 16 grams of fat per day. I've consulted with clients who were so proud of eating only 10 or 15 grams of fat per day. A few even boasted with glee that they ate almost zero grams! Ironically, they came to me because they were stuck and they couldn't get any leaner. I taught them not to demonize all fats, but instead to separate the good fats from the bad. When they started eating the good fats – presto - almost like magic, the results started coming. More energy and better workouts were added bonuses.

The trouble is, fat phobia is so deeply ingrained into dieting consciousness, most people are still reluctant to add the fat back in. To break free from the fear of fat, it helps to understand the reasons why trying to cut it all out may do more harm than good.

5 reasons to avoid very low fat diets

1. A zero fat or very low fat diet exacerbates blood sugar fluctuations.

When you eat large amounts of simple and refined carbohydrates, they shoot rapidly into your bloodstream, creating a large spike in blood sugar. Dietary fat helps slow down the release of carbohydrates, making them especially important for carb-intolerant people who have problems with blood sugar regulation to begin with.

2. A zero fat or very low fat diet causes greater insulin release.

A fat free, very high carb diet has a more pronounced effect on blood sugar, which in turn, spikes your insulin levels. Insulin is not an inherently bad hormone - it plays a vital role in helping your body use glucose and it delivers amino acids to your muscles, so it actually has an anabolic effect. But insulin is also lipogenic (promotes fat storage) and anti-lipolytic (prevents fat release), so if insulin is chronically or excessively elevated, it doesn't help your fat loss endeavors. It's also a risk factor for diabetes and heart disease.

3. A zero fat or very low fat diet causes cravings and hormonal hunger.

Whenever there's an unusually large blood sugar peak, there's going to be an equal or greater valley. This blood sugar valley, known as hypoglycemia, is one of the reasons for those intense, almost irresistible cravings that send you frantically to the nearest Haagen-Dazs or Krispy Kreme store. This isn't just "empty stomach" hunger, it's hormonal hunger – the kind that's very hard to resist.

4. A zero or very low fat diet reduces testosterone.

Low dietary fat intakes are correlated with low testosterone levels. For someone trying to become leaner and more muscular, this spells disaster. You need a little bit of fat – even saturated fat – to maintain normal anabolic hormone levels.

5. A zero or very low fat diet may be deficient in essential fatty acids.

Many people are so afraid of eating fat, they inadvertently cut out the good fats along with the bad ones! Clinical fatty acid deficiencies are rare, but if you intentionally try to remove all the fat from your diet, you could fall short of optimal levels. Essential fatty acid (EFA) deficiency can impair fat burning, reduce your energy and cause a long list of other problems. You'll learn more about EFAs in upcoming sections.

Zero fat diets are definitely not the answer. Now let's talk about the opposite end of the spectrum – the high fat diet.

The truth about high fat diets

In the weight loss and bodybuilding world, a small faction of high fat advocates believe that a very high fat diet (40-70% of your calories) is the ultimate method of losing fat, building muscle and improving athletic performance. Despite how extreme and unbalanced this approach is, it still attracts followers. Any diet that sounds unique or controversial, combined with a ton of marketing, is bound to catch people's attention.

As I mentioned in a previous chapter, it's easy to overlook the fundamentals and disregard common sense in our quest for some esoteric magical formula. Frankly, there are some really dumb things being said about nutrition these days, and eating a high fat diet is one of them. The high fat diet has little scientific or practical basis. It's a marketing scheme. They've taken the idea, "You have to eat fat to lose fat," which is true, to its extreme.

High fat diet proponents will try to convert you with arguments that sound very convincing. They'll cite scientific studies. They'll say it's the reason Eastern European weightlifters achieved world dominance in Olympic lifting. They'll say the metabolic state of ketosis is the secret to fat loss. They'll even say top bodybuilders are using it to get more ripped than ever.

Supporters also claim that a high fat diet has no unhealthy consequences. They frequently cite the Greenland Eskimos as an example. Living in an arctic climate, Eskimos do not have easy access to carbohydrates like fresh fruits, vegetables and whole grains, so their diet is composed mostly of meat and fat - about 60% fat to be exact – yet they are perfectly healthy.

What the high fat advocates fail to mention is that a large portion of the fats eaten by the Eskimos are unprocessed fats from fish and whale blubber. The omega-3 fatty acids in these natural marine sources have cardio-protective effects, which could explain the Eskimos' low incidence of disease despite a high saturated fat intake. That's nothing like the high fat diets of modern Americans and other industrialized countries, which include factory-produced meats, hydrogenated oils, baked goods, fried foods, refined supermarket oils and other highly processed fats (often eaten in combination with refined sugars – a very deadly duo).

Saturated fats have always carried the stigma of being one of the bad fats. But as you can see from the Eskimo example, the relationship between saturated fat and cardiovascular disease may be a lot more complex than previously thought. Including small amounts of saturated fats in your diet, such as some lean red meat or egg yolks, is not only permissible, it can be beneficial. You don't need much though. It's not optimal to get a large percentage of your calories from any kind of fat – especially in a mixed diet that also contains a lot of carbs.

7 reasons to avoid very high fat diets

Even though there are major differences in the various types of fats, you should almost always keep fat intake relatively low. Here are eight reasons why:

1. Fat is more calorie dense than any other source of calories.

Each gram of fat contains 9 calories, while each gram of carbohydrate or protein contains only 4 calories. Since each gram of fat has more than twice the caloric density, eating high fat foods makes it easy to exceed your calorie limit. Reducing fat intake helps to keep your calories under control, and that makes it easier to lose body fat.

2. Fats have the lowest thermic effect of all foods.

The thermic effect is the amount of energy required to digest and utilize food. Protein has the highest thermic effect – nearly 30%. Fats have the lowest thermic effect – only 3%. When you eat lean protein foods, up to 30% of the calories are burned off just to digest and absorb them. When you eat fatty foods, only 3% of the calories are burned off during digestion and absorption.

3. Processed fats and trans fatty acids cause serious health problems.

Processed fats, refined oils and especially trans fats, can be very harmful to your health. According to Udo Erasmus, "Degenerative diseases that involve fats prematurely kill over two-thirds of the people living in affluent, industrialized nations." These bad varieties of fats have been linked to heart disease, cancer, diabetes and too many other problems to list.

4. A high fat diet doesn't leave enough room for protein or carbohydrates.

Eating large quantities of fat doesn't allow enough room in your daily calorie budget for an optimal amount of protein or carbohydrate. Any diet that leans excessively toward one macronutrient will displace the others. If your diet is heavily slanted to one food group, that imbalance makes it harder to stick with the program and easier to get shorted on important nutrients.

5. Dietary fat gets stored more easily as fat.

Technically speaking, dietary fat really does get stored as body fat more readily than other macronutrients. Too much of anything can get stored as fat, but converting dietary fat into body fat is biochemically very easy. Lean proteins, on the other hand, must go through metabolically costly processes to be converted to fat. Dietary fat is also the last fuel to be burned for energy in the oxidative hierarchy. When carbs are available, carbs get burned first, and when there's a calorie surplus, dietary fat gets stored first.

6. Dietary fat is not an efficient fuel source for high intensity muscular work.

Muscle glycogen is your body's preferred fuel for high intensity training. If you're eating too much fat at the expense of complex carbs, your glycogen levels will be depleted and your training will suffer. High fat diet advocates often claim that dietary fat can become the primary fuel source when carbs are not available. They're fond of saying, "There's no such thing as an essential carbohydrate, only essential fats and essential amino acids." While that may be true on a technical level, the fact is, carbs are essential on a practical level for high-powered workouts in the weight room. Ask a group of athletes or bodybuilders who have been on very low carb diets and the majority will tell you that without carbs, their energy and mental focus goes down the toilet.

7. A high fat diet is not optimal for muscle growth.

Some people claim that dietary fat is anabolic. This is true in the sense that extremely low fat diets suppress testosterone, an anabolic hormone. However, they fail to mention that large amounts of fat are not necessary for optimal hormone levels and eating more and more fat doesn't give you ever-increasing benefits. In fact, if your fat intake gets so high that it pushes out the protein and carbs, it may actually be non-anabolic.

Here's why: carbohydrates help facilitate the delivery of amino acids into your muscle cells and carbohydrates eaten with protein can enhance recovery and protein synthesis. Dietary fat has very little effect on insulin, so when fat is very high and carbs are very low, insulin is unable to play its positive, anabolic role. This is why we recommend some carbs as part of the post-workout nutrition strategy even if you prefer a reduced carb diet overall.

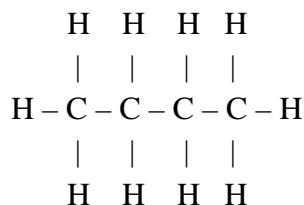
How various types of fats are different

Now you know why the two extreme approaches – very high fat or very low fat - are not effective or at least, not optimal. This means you're ready to start learning exactly which types of fats you should be eating more, which you should be eating less and which you should avoid completely. To choose your fats properly, you need to understand the differences between them. A little bit of chemistry is involved, but I'll keep it as simple as possible.

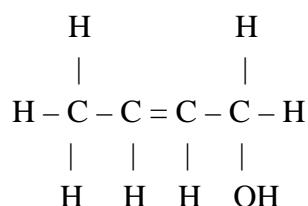
Fatty acids are made up of chains of carbon and hydrogen atoms linked together. A fatty acid molecule is made of a carbon backbone, like this:

C – C – C – C

Attached to the carbon backbone are hydrogen atoms, like this:



How saturated a fat is depends on whether there are any spaces left on the carbon chain. If all the carbons have hydrogen attached to them, the fat is saturated. If there are any carbons that aren't hitched up to hydrogen, then the fat is unsaturated:



See how those two carbons in the middle don't have a hydrogen atom attached to them? That's what makes a fat unsaturated – the carbons are not saturated with hydrogen, or as some nutritionists like to say, “There are empty seats on the bus.”

Also, saturated fatty acids have single bonds between the carbon atoms. Unsaturated fats have double bonds. Monounsaturated fatty acids have one double bond on the carbon chain. Polyunsaturated fatty acids have two or more double bonds. It's these differences in molecular structure that give each fat its unique properties, such as their melting points and the way they affect your health.

Saturated fats, for example, (with the exception of the tropical oils), are solid or semisolid at room temperature (think butter or animal fat). Saturated fats have historically been considered the least desirable because they can raise blood cholesterol. Polyunsaturated and monounsaturated fats, on the other hand, are mostly liquid at room temperature. These fats tend to lower levels of blood cholesterol and have other health benefits or cardio-protective effects.

The three categories of fats

Every fat or oil is either saturated or unsaturated. The unsaturated fats can be subdivided further into monounsaturated and polyunsaturated fats. The polyunsaturates contain the healthy essential fatty acids (EFAs).

1. Saturated fat

Butter, cheese, dairy fat, chocolate, egg yolk, meat fat, shortening, palm oil, palm kernel oil and coconut oil are all saturated fats. With the exception of the tropical oils (palm, palm kernel and coconut), saturated fats are primarily *animal* fats.

The effect of saturated fat on your health has become very controversial in recent years. Without looking at each different type of saturated fat within the context of your genetics, lifestyle and overall diet, it's overly simplistic to say that all saturated fats are unhealthy or should be completely avoided. Saturated fats do, however, lack the essential fatty acids you need, so you must balance them with poly- and monounsaturated fats. You also need to control the amounts so you can easily stay inside your daily calorie limit.

2. Unsaturated fat (polyunsaturated and monounsaturated)

Polyunsaturated and monounsaturated fats come primarily from *vegetable* and plant sources. These fats tend to lower levels of blood cholesterol and the former contain the healthy essential fatty acids.

Polyunsaturated fats include fish, walnuts, pecans, almonds, flax, some salad dressings, sunflower oil, and safflower oil. Monounsaturated fats include avocados, cashews, peanuts, pecans, natural peanut butter, olives and olive oil.

Saturated	Polyunsaturated	Monounsaturated
Beef fat	Fish Oil	Olive Oil/Olives
Poultry fat	Flaxseed Oil	High Oleic Sunflower Oil
Other Animal Fats	Sunflower Oil	High Oleic Safflower Oil
Butter fat	Safflower Oil	Avocado
Coconut Oil	Canola Oil	Canola Oil (contains both)
Cocoa Butter	Sesame Oil	Peanuts/ Peanut butter
Palm Oil	Primrose Oil	Cashews
Palm Kernel Oil	Borage Oil	Pecans
Shortening / Lard	Walnut Oil/Walnuts	Almonds/Almond Butter
Cream/Dairy Fat	Pine Nuts	Brazil Nuts
	Soybean oil	Pistachios
	Corn Oil	Macadamia Nuts
		Hazelnuts

Essential fatty acids

Like other essential nutrients such as amino acids, EFAs are those that your body cannot make on its own, so they must be supplied through your diet in adequate quantities and in the proper ratios. The two EFAs include:

Omega 3 – (alpha linolenic or LNA)

Omega 6 – (linoleic acid or LA)

According to Artemis Simopoulos, author of *The Omega Diet*, human beings evolved on a diet that was not only free of manmade trans fatty acids and lower in saturated fat than the modern diet, it also contained roughly equal amounts of omega-3 and omega-6. The modern Western diet today is very high in omega-6 fatty acids as compared to omega-3 with a ratio of 20:1 or even higher (optimal is more like 2:1).

One of the reasons for this imbalance is our increased consumption of refined grains and decreased consumption of omega-3-rich fish, as well as the industrial production of animal feeds which contain grains high in omega-6 fatty acids.

Since the animals are what they eat, their meat becomes high in omega-6, unlike the leaner and higher omega-3 wild game that our ancestors once consumed. As we consume the high omega-6 meats and refined grains, we lose the natural balance we once thrived on and we begin to suffer from inflammatory and cardiovascular diseases that were once unheard of. By fixing this imbalance and increasing your intake of omega-3 fats, you obtain a long list of health benefits, which in essence, restores you to the balance that nature intended for you.

The amazing benefits of EFAs

Most people don't get enough omega-3 fatty acids, and their omega-3 to omega-6 ratio is skewed badly in favor of the pro-inflammatory omega-6. A classic symptom of EFA deficiency is dry, flaky skin. Smooth, velvety skin is just one of many benefits of EFAs. Here are 11 of their most important functions in your body:

- ✓ EFAs improve insulin sensitivity
- ✓ EFAs are required for absorption of fat-soluble vitamins
- ✓ EFAs are essential for joint health
- ✓ EFAs are required for energy production
- ✓ EFAs are required for oxygen transfer
- ✓ EFAs maintain cell membrane integrity
- ✓ EFAs suppress cortisol production

- ✓ EFAs improve skin texture
- ✓ EFAs are growth promoting
- ✓ EFAs increase your metabolic rate
- ✓ EFAs help burn fat

The last two on this list probably got your attention, didn't they? In his book *Fats That Heal, Fats That Kill*, Udo Erasmus writes, "At levels above 12 or 15% of total calories, EFA's increase the rate of metabolic reactions in the body and the increased rate burns more fat into carbon dioxide, water and energy (heat), resulting in fat burn-off and loss of excess weight."

You might want to go back and read that quote again, because this is important! It throws the whole idea of fat free dieting for fat loss right out the window. It only takes a small amount of EFAs to prevent a deficiency, but avoiding deficiency is not the goal when you want to lose body fat. Your goal is to get the *optimal* amount to reduce fat, enhance muscle growth, and promote health.

Essential fatty acid supplements – flax oil and fish oil

Many people believe that fish is the richest source of EFAs. However, flax has about twice as much omega-3 as fish. Taking fresh flaxseed oil is another way to help ensure that you meet your EFA requirements. You can get flaxseed oil from any good health food store. One tablespoon a day is a common dose, though some people use as many as 3 tablespoons per day, depending on their body weight and caloric needs.

One possible downside of always using pure flaxseed oil is that the ratio of omega-3 fatty acids to omega-6 fatty acids is 4 to 1. Most people's diets are low in omega-3 and high in omega-6. Flaxseed is so high in omega-3 relative to omega 6 that exclusive use of flaxseed oil over the long term can actually cause the opposite problem: deficiency in omega-6. Dr. Erasmus came up with a solution by developing an essential oil *blend* which contains flax along with several other nutritionally rich oils including sunflower, sesame, rice bran, oat bran and evening primrose oils. These oil blend products are also available in most health food stores.

My clients often ask me if they can eat whole flaxseeds instead of flaxseed oil and mix them in their protein shakes, stir them into oatmeal or sprinkle them onto salads. The answer is yes, although it's best if you grind them, otherwise, you won't fully absorb the oil (the whole seeds can pass right through your digestive tract). A regular coffee grinder works just fine. It takes about 3 tablespoons of ground flaxseed to equal the amount of EFAs in one tablespoon of oil. Once ground, use them quickly. Ground flaxseeds, like flaxseed oil, can go rancid fast and like the oil, should be kept refrigerated.

Fatty fish is a fantastic source of omega-3 fatty acids. This includes salmon, sardines, herring, mackerel, rainbow (lake) trout and albacore tuna (Note: Because of possible mercury contamination, the FDA suggests that young children and pregnant or nursing women limit albacore consumption to twice a week, up to 12 ounces total. Chunk light tuna doesn't appear high on the mercury advisory lists but low fat tuna doesn't have the same EFA content). If you don't eat fatty fish on a weekly basis, an overwhelming amount of research suggests that it may be worthwhile to use a fish oil supplement, both for health and fat loss purposes.

In fact, fish oil may provide an advantage over flax as an EFA supplement, because the type of omega-3 fat in flaxseed oil (alpha linolenic acid) requires conversion in your body into the usable form eicosapentanoic acid (EPA) and docosahexaenoic acid (DHA). There's been some debate about how well your body makes this conversion. Some experts say, why not just get the EPA and DHA directly from fish and skip the whole conversion issue in the first place?

Based on the most recent research, fish oil has been getting the nod as the first choice for a healthy fat supplement. However, there are reasons you might use flax oil over fish oil or even use both. Vegetarians or anyone who doesn't eat fish products might opt for flax. Ground flaxseed is also a source of fiber (about 3 grams per tablespoon) and other nutrients. Flax seeds (or flax meal) can be used as an ingredient in baking, cooking and special healthy recipes. Many people consider flax a health "super food."

Bodybuilding and supplement expert Will Brink suggests that you could use both. One technique he recommends for physique athletes is to take fish oil most of the year, then switch to flax oil when "cutting" body fat for competition.

Minimize the saturated fats

Cutting out all saturated fats isn't necessary, but on this program, they'll only make up only a small portion of your total calories and total fat intake. You'll get small amounts of saturated fat from lean meats and poultry like chicken or turkey breast. As long as you keep your calories on target, lean cuts of beef are fine and so are whole eggs (egg yolks actually contain valuable nutrients including the carotenoids xeaxanthin and lutein which help protect you from macular degeneration). Grass-fed beef has recently become more popular because it's leaner, lower in calories, lower in saturated fat and has a better omega-3 to omega-6 ratio than grain-fed beef (fatty fish is a far richer source of omega-3, however).

Saturated fats are also found in dairy products. Many people shun dairy completely because they're worried about the saturated fat or because they have a hard time digesting it (people with lactose intolerance may experience bloating or gastrointestinal problems from drinking milk). However, if you tolerate dairy products well, you can use them on a fat-reducing program. In

fact, recent research has discovered some potential links between dairy products and better body composition. Dairy products are also an excellent source of calcium and two very high quality proteins: whey and casein. The key is to choose non-fat or reduced fat sources. Not only will you be minimizing the saturated fat, you'll get fewer calories and more protein.

Reduce your total fat intake in general

Keep in mind that every fat or oil gets 100% of its calories from fat. Extra virgin olive oil, for example, contains phenolic compounds that are powerful antioxidants, making it very healthy, but even olive oil gets 100% of its calories from fat. Regardless of whether an oil or fat is healthy, it's still calorie dense. A tablespoon of any oil will set you back about 130 calories and 14 grams of fat.

Here's another example: If you eat large amounts of walnuts, almonds, macadamia nuts, cashews or peanuts as your favorite snack every time you watch TV, you could be hundreds or even a thousand calories or more over your optimal fat burning level! Nuts contain fiber, vitamins, healthy phytonutrients and good fats (walnuts are even high in healthy omega-3), but watch those calories!

Along with other full fat dairy products, butter is best kept to a minimum. There are now many lower-calorie substitutes for conventional fats such as butter flavor sprinkles, low calorie butter flavored sprays, reduced fat butter spreads, fat-free dressings, cooking spray and so on. These can all save you calories while keeping some flavor.

Using cooking spray is more calorically economical than pouring oil in your pan because it would take a 15 second spray to equal 1 tablespoon of oil. Read labels carefully, though, because not all low calorie products or fat substitutes are good for you, as you will find out shortly in the case of products containing trans-fatty acids.

Hydrogenation, partial hydrogenation and trans fatty acids

Oils are, by nature, extremely unstable substances that go rancid very quickly upon exposure to light and air. Hydrogenation and partial hydrogenation are industrial processes that food companies use to prolong the shelf life of their products and to make cheap spreadable products such as margarine. They also make baked goods moist and flaky. Udo Erasmus calls hydrogenated oils "a manufacturer's dream: an unspoilable substance that lasts forever."

Unfortunately, hydrogenation turns a natural, healthy fat into an unnatural, unhealthy fat. You could say that hydrogenated oil is a processed fat the same way that white flour is a processed carbohydrate. Partially hydrogenated oils contain large amounts of chemically altered fats known as trans fatty acids – one of the unhealthiest foods you could eat.

What foods contain trans fatty acids?

Some trans fatty acids are found in meats and dairy products, but those are the naturally occurring variety. Industrial trans fats are found in hydrogenated oils, margarines or spreads, baked goods and fried foods. Food manufacturers used to be very sneaky when it came to trans fats, because until 2006, it wasn't mandatory by law to list them on the food labels. The labels said "no cholesterol," or "low saturated fat" yet the products were loaded with harmful trans fats. Many people switched from butter to margarine thinking they were doing good by avoiding the saturated fat. What they missed was that the margarine was full of trans fats!

When piles of convincing research proved how dangerous these fats were, the government finally changed the labeling laws. But even today there are still labeling loopholes that allow small amounts of trans fats to sneak into many foods: The label can say "no trans fats" as long as the amount doesn't exceed 0.5 grams per serving. Even though trans fats have been in the news in recent years, most notably when they were banned from restaurants in cities like New York, they're still out there.

Here is a partial list of where to find trans fatty acids:

- Fried foods (fried chicken, French fries, fried onion rings, etc.)
- Cookies
- Crackers
- Biscuits
- Pies
- Pastries
- Frostings
- Doughnuts
- Corn chips
- Taco shells
- Shortening
- Partially hydrogenated vegetable oils
- Refined vegetable oils
- Baked goods (croutons, crackers, cookies, cakes, some breads)
- Margarine

What trans fatty acids can do to your body

Trans fatty acids are very dangerous. They cause numerous health problems including heart disease and possibly even cancer. Just a 2% increase in calorie intake from trans fats is associated with a 23% increase in cardiovascular disease risk. The trans fatty acids in

hydrogenated oil also raise bad cholesterol (LDL) and triglyceride levels while reducing good cholesterol (HDL). Trans fats may also hinder the fat-burning process in more ways than one.

The American Heart Association recommends a maximum of 2 grams per day, but some experts say there is no safe amount of trans fatty acids. Referring to hydrogenated oils, Dr. Erasmus says, “If you see the ‘H’ word on the label, get the ‘H’ out of there!”

10 destructive effects of trans fats:

- Trans fat raises the bad LDL (bad) cholesterol
- Trans fat lowers the HDL (good) cholesterol
- Trans fat increases blood triglycerides
- Trans fat decreases insulin sensitivity
- Trans fat increases insulin response to glucose
- Trans fat hampers immune system function
- Trans fat interferes with your liver’s detoxification processes
- Trans fat may cause cancer
- Trans fat can increase risk of type 2 diabetes
- Trans fat causes inflammation in the body
- Trans fat interferes with EFA functions
- Trans fat makes your platelets stickier

How much fat should you eat every day? What the mainstream experts say

Most mainstream medical, health, and nutrition organizations including the National Research Council and the National Academy of the Sciences, recommend that for good health and weight control, you should keep your dietary fat intake below 30% of your total daily calories. Thirty percent is a good upper limit guideline for fat intake, but it may or may not be the ideal amount for optimizing fat loss, muscle gain, and physical performance simply because mainstream experts say so. You need to customize for your goals, your health and your body type.

What the world’s leanest fitness models and physique athletes do

Your best results for fat loss will come from following a nutrition program low in fat, but not fat free. Based on my research and real world observations, I believe (and so do almost all the top physique athletes in the world), that you should limit your total daily fat intake to about 20% of your daily calories and not less than 15% of total daily calories.

If you were to choose your fats very carefully, an intake as high as 25-30% fat wouldn’t necessarily be a bad idea. Lean proteins and complex carbohydrates are more thermic and less calorie dense than fats, which would favor a lower fat intake, but if you use a reduced

carbohydrate diet for fat loss, a slightly higher fat intake might make sense while you're in a deficit. You'll need to experiment a little within this range (15% to 30%) to see what best suits your body type. What's even more important than the percentage of calories from fat is the *type* of fat you eat.

How food manufacturers are getting away with murder by lying to you on nutrition labels and how to know how much fat is *really* in your food

Hiding or failing to mention trans fats isn't the only dirty trick food manufacturers use. Many foods marketed as "low fat" are actually very high in fat when you analyze the percentage of fat calories. Food companies try to pull the wool over your eyes and fool you into eating high fat foods by listing the percentage of fat by weight or volume. Another deceptive trick is making serving sizes extremely small, which makes a food appear as if it's low in fat and calories.

By reading nutrition labels and using the following formula, you can calculate what percentage of the calories in a food come from fat or even how much of your total daily intake comes from fat. Here's how it works:

Make it a regular habit to read the Nutrition Facts panel on food labels. Look up the number of total calories and the number of grams from fat. Multiply the number of grams of fat in a food item by 9 to find the number of fat calories. (There are 9 calories in a gram of fat). Then divide the fat calories by the total calories to find the percentage of calories from fat.

Example 1: Fat percentage listed by volume	
Food Portion	Low fat 2% Milk, 1 cup
Nutrition Information	120 calories, 8g protein, 11g carbs, 5 g fat
Calories from Fat	5g fat X 9 calories = 45 calories from fat
Percentage of calories from Fat	45 fat calories/120 total calories = 37.5% fat

Example 2: Low number of fat grams reflects a very small serving size	
Food Portion	Low fat ham, 1 slice
Nutrition Information	20 calories, 1g fat
Calories from Fat	1g fat X 9 calories = 9 calories from fat
Percentage of calories from Fat	9 fat calories/20 total calories = 45% fat

Example 3: Fat percentage listed by weight	
Food Portion	Low fat 92% lean ground beef, 3 oz
Nutrition Information	120 calories, 6 g fat
Calories from Fat	6 grams fat X 9 calories = 54 calories
Percentage of calories from Fat	54 fat calories /120 total calories = 45% fat

Practical suggestions for fat intake

Ok, now that you're an expert on fatty acids and you know which ones are healthy and which ones are unhealthy, let's wrap up with some practical, real world suggestions for managing dietary fat.

- ✓ Reduce fats in general: a low fat diet is usually optimal for most people.
- ✓ Don't cut your fat too low and avoid diets that call for zero fat or very low fat (Include a minimum of 15–20% of total calories from fat).
- ✓ If you have a carb intolerant body type or when you're dieting on reduced carbs, you could experiment with higher fat (25% to 30% “good” fats).
- ✓ Avoid raising your fats when your carbs are high, because the carbs-plus-fat combination easily leads to excess calorie consumption and may stimulate greater fat storage in a surplus.
- ✓ Don't be afraid of fatty fish like salmon, trout, mackerel, sardines, or herring. Eating salmon at least two or three times a week is highly recommended.
- ✓ If you don't get enough healthy fats from the foods you eat, you can use an essential fatty acid supplement such as flaxseed oil, an essential oil blend or fish oil.
- ✓ Eat nuts and seeds, provided you stay within your calorie limits (walnuts and flaxseeds are a good vegetarian source of EFAs).
- ✓ Eat avocados and olives, provided you stay within your calorie limits.
- ✓ Avoid trans fats like the plague – including foods with “partially hydrogenated” on the label.
- ✓ Avoid most supermarket oils. Think of them as “white oils” the way you think of white sugar and white flour - empty, processed calories (the exception is extra virgin olive oil).
- ✓ Salad dressings with healthy oils are ok within your calorie limits.
- ✓ Avoid any type of food that is deep fried in oil.
- ✓ Limit full-fat dairy products including cheeses, milk, yogurt and cottage cheese. Use the low or non-fat varieties instead.
- ✓ Use a non-stick cooking spray instead of coating your pans heavily with oil. Try a kitchen oil spritzer if you don't want to use commercial sprays.
- ✓ Limit butter (a saturated fat). Think of it as empty fat calories. It uses up a large part of your daily calorie budget without much nutritional bang for your buck (micronutrients, phytonutrients, fiber or EFAs).
- ✓ If you want butter flavor, try butter sprinkles, butter flavor spray or a “light” tub variety that does not use trans fats.
- ✓ Avoid margarine completely (trans fats).

Conclusion

Small amounts of the right fats are good for your health, they help you gain muscle and they help you lose fat more easily. Zero fat or very low fat diets are not the answer. High fat diets are not the answer either. The optimal dietary fat intake for healthy body composition improvement is probably between 15% and 30% of total calories. If your fat intake falls somewhere in this range, and you're eating the right kinds of fats, you'll be in great shape.

If you're interested in learning more about fats, I recommend *The Omega Diet* by Artemis Simopoulos and *Fats That Heal, Fats That Kill* by Dr. Udo Erasmus. Simopoulos' book is a great primer on the Mediterranean Diet – one of the few well-known mainstream diets that gets high approval ratings from most nutritionists. Dr. Erasmus' book is decidedly inclined toward flaxseed oil (and his own brand of oil blend), and there's some heavy chemistry inside, but it remains one of the best books on the subject and worth the effort to read if you want to take your knowledge to a higher level.

Chapter 10: Protein: The Muscle Builder and Metabolic Activator

“Individuals habitually performing resistance and (or) endurance exercise require more protein than their sedentary counterparts. Higher protein diets have quite consistently been shown to result in greater weight loss, greater fat loss, and preservation of lean mass as compared with lower protein diets.”

- Dr. Stuart Phillips, Exercise Metabolism Research Group, McMaster University

“Exercise causes substantial changes in protein metabolism. In fact, recent data suggests that the protein recommended dietary allowance may actually be 100% higher for individuals who exercise on a regular basis. Optimal intakes, although unknown, may be even higher, especially for individuals attempting to increase muscle mass and strength.”

- Dr. Peter Lemon, Exercise Nutrition Laboratory, University of Western Ontario

Why you are what you eat - literally

Heraclitus, the Greek philosopher, said, "You cannot step in the same river twice." What he meant was that a river may *look* the same every day, but it never *is* the same because of the never-ending flow of new water running through it. The same is true of the human body. Although your body appears quite solid, it's always in a constant state of flux as old cells die and new ones replace them.

You are continually replacing old blood cells with new ones. Every month you produce a new skin as dead cells are shed and new cells grow underneath. Certain parts of your skeleton are completely remodeled every four months. Every six weeks, all the cells have been replaced in your liver. You have a new stomach lining every five days. The proteins in your muscles are continually turned over as old tissue is broken down and new tissue is synthesized. Every cell in your body is constantly being recycled.

From a molecular point of view, you're not the same person you were a year ago. This is an extremely important concept to grasp because it makes you realize that the maxim, "you are what you eat" can and should be taken literally. Once you've accepted this, it makes you think twice about what you feed your body every day.

Protein: The raw building material for the human body

Protein plays many roles in the body. Proteins serve as enzymes, they control metabolic activities as hormones, they're involved in cell signaling processes and they even influence immunity. But proteins are best known for their structural functions: Protein is literally the raw construction material for body cells like bricks are for a building.

Body structures made from protein include skin, hair, nails, bones, connective tissue and of course, muscle. Next to water, protein is the most abundant substance in your body, making up approximately 15% of your weight. Of most interest to people who want a better physique is the fact that 65% of all the protein in your body is located in your skeletal muscles.

What is positive nitrogen balance and why is it important?

Like fats and carbohydrates, proteins are also composed of carbon, hydrogen and oxygen. It's the presence of nitrogen that separates protein from the other macronutrients. Only protein can bring nitrogen into the body. Because muscle tissue contains most of the body's protein and protein molecules contain nitrogen, scientists can study the effect of dietary protein on muscle growth by comparing the amount of nitrogen consumed with the amount excreted (in feces, urine and sweat).

Nitrogen balance testing is not without flaws, but years of research using this method did give us some important early clues about protein status in the body. If the intake of nitrogen is greater than the amount excreted, then we know that protein is being retained and new lean tissue is being synthesized. This is known as positive nitrogen balance. If more nitrogen is excreted than consumed, you are in negative nitrogen balance, indicating that protein is being broken down and lean tissue is being lost.

Amino acids: The building blocks of protein

The smallest units of a protein are called amino acids. Just as glycogen is formed from the linkage of numerous glucose molecules, proteins are formed from the joining of numerous amino acids. Individual bricks are building material that can be cemented together into a nearly unlimited number of structures such as a brick house, a brick wall, a brick chimney, a brick road, and so on. In the same fashion, your body takes the individual amino acids and "cements" them together with peptide bonds into various configurations to create muscle tissue and other body proteins.

There are 20 amino acids that are required for growth by the human body. From these 20 amino acids, there are tens of thousands of different protein molecules that can be formed. Each protein is assembled from the bonding of different amino acids into various configurations. Growth hormone, for example, is a protein chain of 156 amino acids. The muscle protein myosin is formed from the linkage of 4500 amino acid units.

Eleanor Whitney and Sharon Rolfes, authors of the textbook *Understanding Nutrition*, describe amino acids like this: "Amino acids are somewhat like letters in the alphabet. If you had only the

letter G, all you could write would be a string of Gs: G-G-G-G-G-G-G-G. But with 20 different letters available, you could create poems, songs, or novels. The 20 amino acids can be linked together in an even greater variety of sequences than are possible for letters in a word or words in a sentence. The variety of possible sequences for polypeptide chains is tremendous."

Essential versus non-essential amino acids

Out of the 20 amino acids, your body can make 11 of them. These are called the non-essential amino acids (also known as dispensable amino acids). The other 9 amino acids are called essential amino acids (or indispensable amino acids). Essential amino acids are those which can't be manufactured by your body and must be supplied from your food.

Essential (indispensable) amino acids	Non-essential (dispensable) amino acids
Leucine*	Alanine
Isoleucine*	Arginine
Valine*	Asparagine
Tryptophan	Aspartic Acid
Threonine	Cysteine
Phenylalanine	Glutamic acid
Methionine	Glutamine*
Lysine	Glycine
Histidine	Proline
	Serine
	Tyrosine

* leucine, isoleucine and valine are known as branched chain amino acids or BCAA's which are metabolized mostly in muscle and play an important role in protein synthesis. Glutamine is known as a conditionally essential amino acid because under conditions of stress or trauma, you may require more of it than your body can produce.

Why you must eat complete proteins every day

Foods that contain a combination of all the essential and nonessential amino acids in the exact ratio and amounts required by your body for growth are called complete proteins. For your body to synthesize muscle, all the essential amino acids must be available simultaneously. Any non-essential amino acids that are in short supply can be produced by your liver, but if an essential amino acid is missing, your body must break down its own proteins to obtain it. To prevent muscle breakdown, dietary protein must supply all the essential aminos.

Carbohydrates have a storage depot in the body called glycogen. Glycogen can be stored in the muscles and liver and then drawn upon hours or even days later when it's needed. Proteins can't be stored to any significant degree. There's only a very small and transient amino acid pool in the blood and tissues, making up only about one percent of all the protein in your body. To

maintain the ideal environment for muscle growth (positive nitrogen balance), complete proteins must be eaten every day, and ideally, with every meal.

An added bonus of complete proteins is a faster metabolism. High quality complete proteins such as chicken, fish, eggs or dairy products increase the metabolic rate slightly more than low biological value proteins like beans or wheat. A study published in the *American Journal of Clinical Nutrition* confirmed this. Researchers from Copenhagen discovered that the number of calories burned was slightly higher (2%) when the subjects got their protein mostly from meat as compared to mostly from soy. The same study also confirmed that protein has a higher thermogenic effect than carbohydrates, so by replacing a portion of your carb calories with complete animal protein, the increase in metabolism is significant enough to improve fat loss.

Protein quality: complete versus incomplete proteins

Protein quality refers to how well your body can digest and utilize a particular protein. There are many methods of rating protein quality, including biological value, protein efficiency ratio, chemical score, and protein digestibility corrected amino acid score. If you've ever seen advertisements for protein supplements, you've probably heard of these before. In fact, protein quality terminology is frequently used to persuade you to buy certain types of protein powders.

The highest quality proteins come from animal sources such as milk, eggs, fish and meat. These are the complete proteins that contain all the essential amino acids in the exact amounts and proportions needed by your body.

Complete lean proteins

- ✓ Eggs (whites or whole eggs)
- ✓ Dairy products (milk, cheese, cottage cheese)
- ✓ Lean red meats
- ✓ Bison/Buffalo, game meats
- ✓ Chicken breast
- ✓ Turkey breast
- ✓ Fish
- ✓ Shellfish
- ✓ Milk, egg, casein or whey protein powders

One issue with animal proteins is that many of them also contain large amounts of calories and saturated fat. If you want to control calories, you can do that by reducing the amount of most animal fats you consume. This is easy to do by eating more egg whites instead of whole eggs (eat the egg yolks in moderation), lean meats such as turkey and chicken breast, only the leanest cuts

of red meat (top round, lean sirloin, bison or game meats) and low-fat or non-fat dairy products instead of whole milk dairy products.

Many vegetables, beans, nuts, legumes, grains and other plant-based foods contain substantial amounts of protein, and it all counts toward your total daily protein goal. However, the protein in these foods is usually not considered complete because it's low in one or more of the essential amino acids (known as a limiting amino acid). Beans, for example, are very high in protein with about 15 grams per cup. However, they are low in the essential amino acid Methionine. Grains are lacking the essential amino acid Lysine.

In general, proteins from plant sources are lower in quality and digestibility. However, combining two incomplete sources of plant-based protein such as rice and beans gives you all the necessary amino acids you need to build muscle. These complementary protein combinations are how vegetarians can improve their overall daily protein quality. It's not mandatory to eat meat or large amounts of animal proteins to get lean and muscular, but it is mandatory to eat complete proteins and meet your total protein requirement every day.

Exercise physiologists Frank Katch, Victor Katch and William McArdle, the authors of *Sports and Exercise Nutrition*, suggest that vegetarians could benefit by increasing their total protein intake by 10% above standard recommendations to adjust for the less-efficient digestion and lower quality of plant proteins.

Vegans who have a hard time hitting the minimum protein targets suggested in this program could use vegetarian protein powders such as soy, pea, rice or hemp (hemp contains not only plant protein, but also fiber and valuable omega-3 fats).

Should you eat soy protein?

Among the plant-based proteins, soybeans have a surprisingly decent amino acid profile (some soy isolate supplements are even fortified with methionine), although soy is only 78% digestible as compared to milk and egg proteins which are 97% digestible. Soy is also controversial with regards to numerous health issues. It is promoted as a cholesterol-reducing health food, but at the same time criticized for potential negative effects. Soy's isoflavone phytoestrogen content (daidzen and genistein) is a common concern for men who worry about the estrogenic effects.

Despite some of the soy alarmism you might have heard, a small amount of soy protein shouldn't have any down sides, even for men. However, unless you're allergic or intolerant to milk products or you're a vegetarian, there's little reason to depend on soy as a major protein source. Recent research has shown that the milk proteins, whey and casein, are superior to soy for

stimulating protein synthesis, and the research on soyfoods and weight loss says there's no difference either way.

Is "vegetarian bodybuilder" an oxymoron?

The *Burn the Fat, Feed the Muscle* program can be very easily adapted for lacto-, ovo- or pesco-vegetarians. It's well known that these types of vegetarians, who eat dairy products, eggs, fish or all of the above, can build physiques equally as muscular as those who eat meat. Bodybuilding champion Bill Pearl is a famous example. Pearl was well known for giving up red meat, but he did use complete proteins from eggs or dairy products. With this semi-vegetarian approach, Pearl won the Mr. America and Mr. Universe titles and became a legend in the bodybuilding and fitness world.

Even vegans who eat no animal products whatsoever can achieve low body fat levels and highly fit physiques. However, a strict vegan diet requires close attention to make sure calorie and nutrient needs are met. Veganism is also not as conducive to building muscle. Without including at least some complete proteins in the form of eggs, dairy, fish or milk-based protein powders, vegetarians may find their muscular development falling short of their maximum potential.

If your goals include building maximum muscle size or being competitive in physique sports, then heed the advice of Robert Kennedy, publisher of Muscle Mag International and author of *Rock Hard, Super Nutrition for Bodybuilders*:

"The bodybuilder would be ill-advised to adopt a true vegetarian diet. You can be one of the millions who are eating less meat and more vegetables. You may even want to drop all flesh entirely. But it would be a mistake to try for pure vegetarianism. Only 3.7% of Americans consider themselves to be vegetarians, and of those only a fraction of 1% are purists. In the bodybuilding world of champions, that percentage is currently... zero!"

How much protein? The RDI versus the "protein pushers"

For years, a heated controversy has raged over whether athletes need extra protein and whether added protein will boost muscle development. On one side, you have some conservative dieticians and medical professionals who stubbornly insist that the recommended Daily Intake (RDI) is all you need even if you work out. The RDI is the official government guideline set by the National Research Council, which replaced the old recommended daily allowance (RDA). The RDI is based on total bodyweight and is set at 0.8 grams per kilogram of bodyweight (or only 0.36 grams per pound of bodyweight). For a 172 pound man, that's a paltry 62 grams per day.

On the other side of the debate, you have the "protein pushers" who claim that mega doses of protein are the key to muscular growth and fat loss. These protein fanatics often suggest intakes as high as 400-500 grams a day or more. Deeper inquiry often reveals that the protein pushers are in some way affiliated with a supplement company and have a vested interest in selling you protein supplements. In other cases, these high protein advocates are pro bodybuilders who weigh 250-300 solid pounds and may be taking anabolic steroids, which can allow their bodies to utilize more protein than normal.

So which side is right? The answer is neither. The optimal intake is most likely in between the two extremes. Optimal intakes and safe upper limit intakes of protein for fat loss and muscle growth are still unknown, but one thing is for certain: Peer reviewed scientific studies confirm that the RDI is insufficient to support the added requirements for strength training or even endurance training.

The RDI was developed for the average sedentary person to avoid deficiency, not for athletes in hard training to optimize body composition. The RDA handbook even says, "No added allowance is made here for unusual stresses encountered in daily living which can give rise to transient increases in urinary nitrogen output. It is assumed that the subjects of experiments forming the basis for the requirement estimates are usually exposed to the same stresses as the population generally."

If you're training hard, that represents stress far beyond the usual stress encountered in daily living and will increase your protein needs. If you're not training, then you probably don't need extra protein, but if that's the case, then you're not following the guidelines of the ***Burn the Fat, Feed the Muscle*** program.

Optimal protein intakes: the real world versus the laboratory

The protein debate will probably never end, even with further study and better research methods, because experts have different opinions, and because long term protein research is so difficult to do. That's why I believe it's important to look for answers not only from the laboratory, but also from athletes in the trenches who have already achieved great success. As protein researcher Dr. Kevin Tipton says, "Athletes and coaches are not interested in the scientific consensus on both sides of this issue. Success in competition is what they consider important."

Bodybuilders and fitness models are among the leanest athletes on earth. Probably the only athletes who get as lean are those in endurance sports such as marathons and triathlons. The difference is that the bodybuilders reach the same low body fat levels while holding on to much more muscle. That's why it makes sense – if your goal is more muscle and less fat - to find out

what the bodybuilders are doing and use *them* as your role models. Before we do that, let's first look at what the research says to help you find a sensible starting point.

What current research says about protein needs

On the *Burn the Fat, Feed the Muscle* program, one of your highest priorities is to hit your total daily protein goal every day. But considering that protein needs are one of the biggest controversies in the entire field of nutrition, how do you choose your daily target? After decades of research and practice, there are a few things we know for sure.

One is that protein needs are proportional to your body weight. A 240 pound weight lifter needs at least twice the protein of a 120 pound ballerina. A diet recommending the same protein intake for everyone is almost always wrong – it will over-prescribe protein almost half the time, and under-prescribe the other half.

We also know that to burn fat, your calorie intake has to go down, but your protein requirement does not. In fact, raising protein while in a calorie deficit can improve your body composition results by increasing thermogenesis, decreasing hunger and maintaining lean body mass. That's why the percentage of total daily calories from protein should be higher on a reduced-calorie fat loss program than a maintenance or weight gain program.

A third proven protein truth is that exercise – especially strength training – increases protein needs. Dr. Peter Lemon, director of the exercise nutrition research laboratory at Western Ontario University, is one of world's top protein researchers. His studies, dating back to the 1980's and 1990's, indicate that strength athletes not using anabolic agents need approximately 1.8g of protein per kg of body weight to maintain positive nitrogen balance. In a recent interview for our Burn the Fat Inner Circle members, Dr. Lemon told us that "Certainly in the range of 2 grams per kg of bodyweight is where you should start, though it might be higher than that and we just don't have the science to answer that question definitively."

That comes out to 0.8 to 0.9 grams of protein per pound of body weight or 140 to 155 grams a day for someone who weighs 172 pounds. More recent studies have shown that even higher protein intakes may be beneficial in hard training strength athletes, especially those who want more muscle size.

In the *Journal of Sports Sciences*, Dr. Kevin Tipton pointed out that protein intakes as high as 2.5 to 3.0 grams of protein per kg of bodyweight per day (1.1 to 1.4 grams per pound of bodyweight), might be the best recommendation when the goal is hypertrophy and training is demanding. At the very least, it won't hurt.

“If this amount is more than the synthetic machinery can process, the excess will simply be oxidized” said Dr. Tipton. “As long as the intake of other nutrients important to the success of the athlete are not compromised, there appears to be little harm in ingesting these high amounts.”

Given the amount of research that’s been done on protein and athletes, it's hard to believe so many mainstream doctors and dieticians still cling to the outdated notion that the RDI for protein is sufficient. The biggest irony is the fact that many of these "RDA pushers" are overweight, out of shape professors, government policy makers or white lab coat types. I don't know about you, but I have a hard time taking advice from armchair experts who don't walk the walk.

After years of being criticized by the academic and scientific communities for their "excess" protein intakes, bodybuilders today have received their vindication. It’s no longer a far-fetched *hypothesis* that a higher protein intake is more effective for building muscle and burning fat; it’s now scientific *fact*.

Protein needs by body weight: The one gram per pound of body weight guideline

For bodybuilders, one gram per pound of body weight per day has been a rule of thumb for years, and it's very close to the 0.8 to 0.9 grams per pound of body weight suggested by top protein researchers. Under some circumstances, even one gram per pound may not be enough for optimal results (we'll talk more about that in a minute.)

The one gram per pound guideline is the easiest to remember and most common method for prescribing protein, but it does have a couple of drawbacks. First, if you’re overweight and your body fat is a lot higher than normal, then using one gram per pound of total bodyweight may overestimate your protein needs. That’s because your body doesn’t need higher levels of protein to support higher levels of body fat. For example, a lightly active 250 lb woman with 39% body fat doesn't need 250 grams of protein.

For overweight individuals, one gram per pound of *lean* body weight is a better method. Using lean bodyweight, our 250 pound woman would aim for only 152 grams of protein. This is an important point, because this program is extremely popular with both physique athletes and people who are overweight. (If you don’t know your lean body weight, you can use target body weight instead).

Second, the one gram per pound guideline doesn't take into account whether your goal is to lose, maintain or gain weight, and protein needs are heavily influenced by energy balance. ***Burn the Fat, Feed the Muscle*** is a fat loss program, so we can safely assume that if you’re following the program, you’ll be in a calorie deficit most of the time.

When your goal is fat loss, and especially if your caloric deficit is aggressive, a higher protein intake can be very beneficial. However, *Burn the Fat, Feed the Muscle* is also a long term lifestyle and many people move on to muscle gain goals after they burn off all the fat. When your goals change from fat loss to maintenance or muscle gain, your protein needs may also change.

Despite these potential drawbacks, as long you're training regularly and you're within the normal ranges for body composition, the simple one gram per pound of body weight protein formula is a solid recommendation and a good place to start.

Example 1:

You are female

Your total body weight = 130 pounds.

Your protein requirement = 130 grams per day

If you eat 4-5 times a day, that's 26 - 32 grams of protein per meal

Example 2:

You are male

Your total body weight = 190 pounds

Your protein requirement = 190 grams per day

Spread over 5 - 6 feedings per day, that's 32 - 38 grams of protein per meal

Protein consumption as a percentage of total calories

Another simple method is to calculate your daily protein as a percentage of your total caloric intake. First, you determine your daily calorie needs (use the formulas from Chapter 6). Then you select your desired percentage of calories from protein. The percentage you choose must be in line with your goals, activity level and body type.

The baseline recommendation for people who participate in regular cardiovascular and resistance training is 30% of total calories, although it can be higher depending on your situation. When you're on a reduced calorie or reduced carb fat loss diet, you might increase your protein to as much as 35-40% of your calories.

Once you've selected your percentage of calories to come from protein, simply multiply that percentage by your total calories for the day the same way you did for the dietary fats. This will tell you how many calories should come from protein. Then divide the protein calories by four (there are four calories in each gram of protein) and this will tell you how many grams of protein you should eat per day.

Example 1:

You are a female, 130 pounds, very active

Your optimal calorie intake to lose fat is 1700 calories per day

To determine your protein intake, multiply your caloric intake by 30%

1700 calories per day X .30% = 510 calories from protein

There are 4 calories per gram of protein

510 protein calories divided by 4 calories per gram of protein = 127.5 grams of protein

Example 2:

You are male, 190 pounds, moderately active

Your optimal calorie intake to lose fat is 2600 calories per day

To determine your protein intake, multiply your caloric intake by 30%

2600 calories per day X .30% = 780 calories from protein

There are 4 calories per gram of protein

780 protein calories divided by 4 calories per gram of protein = 195 grams of protein

It's important to note that prescribing protein by percentage is relative to total calories, so an over- or under-estimation error is possible if you use the same percentage across multiple calorie levels (isocaloric and hypercaloric diets). Because protein is so important, it's a good idea to double check your daily protein intake to be sure you hit your grams per pound of body weight target, especially if your calorie intake is on the low side.

Four special conditions when higher protein is beneficial

There are several occasions when a higher protein intake can be especially beneficial.

1. When your goal is to gain muscular body weight
2. When you're using a low carbohydrate diet for fat loss
3. When your calorie deficit is very aggressive and you're pursuing extreme leanness
4. When you're carbohydrate intolerant

Protein intake and gaining lean body weight

To gain weight, you need to increase your calories. For example, a 190 pound male with a 3000 calorie maintenance level would need a surplus of approximately 500 calories which adds up to 3500 calories per day. Now let's do the math: 30% of 3500 calories is 1050 calories per day. 1050 calories divided by four calories per gram is 262 grams of protein a day. That's a lot of protein - nearly 1.4 grams of protein per pound of body weight. Is this too much?

Well, it's more than enough to meet basic needs and there's very little evidence that protein intakes this high will grow any more muscle than one gram per pound of bodyweight. In fact, when your calories are in a surplus, you don't need as much protein because carbohydrates are protein-sparing. Also, increasing protein alone doesn't guarantee muscle growth – a calorie surplus with progressive resistance training is actually the greater anabolic stimulus. However, many people with physique goals increase their protein to as high as 1.25 to 1.5 grams per pound of bodyweight and report outstanding increases in muscle size and body weight.

Thousands of people have successfully reached their fat loss goals using ***Burn the Fat, Feed the Muscle***, at which point they changed their goal to gaining lean muscle. When your goal changes from burning fat to gaining muscle, you're going to need a lot more calories. If you add all the extra calories in the form of fat or carbohydrate, you might not find your ratio of lean gains to fat gains acceptable.

It's difficult to gain muscle without gaining any fat, and excess carbohydrates and fats, especially in a calorie surplus, can easily lead to fat storage. So when you increase your calories for muscle gain programs, it's reasonable to allow your protein intake to go up with your caloric intake so your surplus isn't created purely from added carbs and fat. If you eat a little more protein than you need, that's ok. Those extra surplus calories have to come from somewhere. A bigger concern is to avoid underestimating your protein intake during fat loss programs when you're eating fewer calories and fewer carbs.

Protein intake and low carb dieting

Some people don't tolerate high carb diets very well. When they eat a lot of carbs, they have problems with blood sugar regulation and unfavorable blood lipid changes. Carb intolerant people also often complain that high carb diets don't seem to work as well for fat loss. Although a calorie deficit will always produce weight loss, high carb diets can increase insulin production, which may inhibit lipolysis. This may become significant when it comes to the last deposits of stubborn body fat. For these people, eating fewer carbs while increasing lean proteins and healthy fats can improve both health and body composition.

Another situation where a higher protein intake is helpful is when you're using a low carb diet, which is common when you're preparing for a bodybuilding show, a fitness competition or a photo shoot. A high protein, low carb diet may not be the best for year round maintenance, but there's little doubt that eating more protein and less carbs makes it easier for most people to reach the very low body fat ranges.

If you want to get ripped, or if you've reached the contest or photo shoot level, you might opt for the higher protein, reduced carb approach to fat loss. If you take a look at the diets of the world's

best bodybuilders, models and fitness competitors, you'll discover something interesting. Nearly all of them reduce carbs and increase protein to achieve the "finished look" necessary to win competitions, be photo-shoot ready or see clearly-defined six pack abs.

The problem is, if you drop your carbs and leave the protein and fat the same, your calories will fall. Cutting calories is the idea, up to a point, but if you drop your carbs a lot, you have to increase your protein to prevent your calories from falling too low and protect your lean body mass.

Exactly what ratio of protein to carbohydrate you select depends on your body type and metabolism and usually takes a little bit of trial and error.

A daily meal plan with 50% carbs, 30% protein and 20% fat is a sensible baseline and a balanced way to eat as a lifestyle. Getting 30% of your calories from protein in hypocaloric conditions will usually give you close to one gram per pound of bodyweight.

Most people, even endomorphs, lose fat and retain lean mass very successfully on a moderate carb, high protein diet with about 40% carbohydrates, 40% protein and 20% fat. This usually falls in the 1.1 to 1.3 grams per pound of bodyweight range.

Bodybuilders prepping for competitions have been known to take in as much as 45-50% of their total calories from protein, which is often even higher than 1.5 grams per pound of bodyweight. That's the extreme end of the recommended protein range for athletes, but it's not uncommon among people successful in the physique world. I would usually recommend this only for bodybuilders, seasoned physique athletes or other serious dieters pursuing very low body fat goals when calories are very low.

A high protein level can help speed up the fat burning process. Too much of any food type can be stored as body fat, but lean proteins are less likely to be overeaten and less likely to be converted to fat than any other macronutrient. Protein also has the highest thermic effect of any food, which means that your body has to burn more calories just to digest, process and utilize protein compared to fat or carbohydrate. On very high protein diets, this thermic effect can be significant.

Why there are no hard and fast rules for protein intake

As you can see by now, it's impossible to set carved in stone rules about protein intakes, because no single rule could apply to everyone. Protein must always be customized for each individual and must be prescribed in context.

Protein needs vary from person to person based on body size, training status, total caloric intake, protein quality, meal timing and on whether you want to gain, maintain, or lose bodyweight. It also depends on whether you decide to take the high carb, low fat approach or the high protein, low carb method. As long as you meet your basic needs every day, no single way is right or wrong.

The range for acceptable protein intake is fairly broad. The one gram per pound of bodyweight target is a good guideline for people who are strength training, but it's entirely possible that you might get optimal results with as much as 1.25 grams to 1.5 grams of protein per day – sometimes even more for serious bodybuilders or contest training.

How often should you eat protein?

On the *Burn the Fat, Feed the Muscle* program, there are two high priority protein goals. The first is to hit your total daily protein target every day. The second is to consume a source of high quality complete protein with every meal.

Thirty grams of protein per meal or drink is a common and sensible recommendation, but it's a myth that you can only digest 30 grams of protein at a time. Very large meals will eventually be digested, it simply takes longer. However, it's ideal to spread your protein intake into multiple smaller feedings throughout the day for ease of consumption and optimum utilization.

Donald Layman PhD., a protein researcher from the University of Illinois, says that the average American consumes over 65% of his daily protein in a single large dinner meal, leaving less than 35% distributed among the other meals (as little as 10 grams or less at breakfast). In the journal *Current Opinion in Clinical Nutrition and Metabolic Care*, he points out that this meal pattern is not optimal for a variety of reasons.

“In adults, the quantity and quality of protein at individual meals is important. Vitamins and minerals can fulfill nutrient needs on a once per day basis, but for protein, the body has no ability to store a daily supply. To stimulate protein synthesis, adults need to consume at least 25-30 grams of protein containing a minimum of 15 grams of essential amino acids and at least 2.5 grams of (the BCAA) leucine per meal. Dietary patterns that provide adequate protein at only one meal produce an anabolic response only after that meal. Breakfast is an important meal for dietary protein because the body is in a catabolic state after an overnight fast. Protein at breakfast is also critical for regulation of appetite and daily food intake. The improved satiety response requires >30 grams of protein at a meal and breakfast has the greatest impact on total daily energy intake.”

In bodybuilding culture, eating protein every three or four hours has become nothing short of gospel and the five to six protein-containing meals per day approach has a hugely successful track record. Eating four to six times per day is best practice on ***Burn the Fat, Feed the Muscle***, and probably ideal for bodybuilders, but for general health and weight loss, eating every few hours is not a requirement that's set in stone.

As a minimum, you should aim for at least three and ideally four to five protein feedings per day to optimize the anabolic response. Also choose a meal frequency that lets you easily hit your total daily protein goal.

Is eating too much protein bad for your health?

Mainstream nutrition experts often claim that high protein diets are unhealthy. If you haven't heard the scare stories from your parents, coaches or teachers, then you've probably heard them in the media. There are even college-level nutrition textbooks that warn about the so-called dangers of eating too much protein, usually harping on the effects of high protein diets on the bones and kidneys.

If you have any pre-existing health problems such as kidney disease, diabetes or high blood pressure, you should check with your doctor or a clinical nutritionist before making any changes to your nutrition program. However, the idea that a high protein diet is inherently harmful to a healthy athletic person is a myth that never seems to die.

Do high protein diets cause kidney disease?

There's no scientific evidence that high protein diets will cause kidney problems in healthy people with healthy kidneys. Numerous studies have measured renal response on high protein diets and found no negative effects. Some research shows changes in renal function markers of healthy people during high protein diets, but there's no indication that this is a negative type of stress on the kidneys, only a normal adaptation to a change in the diet.

We don't have much data either way on the long term effects of a high protein intake. If there were a real problem however, we should be seeing a lot of bodybuilders and strength athletes in their fifties, sixties or seventies checking into the hospital with kidney failure. That hasn't happened, even though high protein diets have been used in strength sports for more than half a century.

Why all the alarmism then? It's probably because in cases of pre-existing kidney disorders, a high protein intake can accelerate progression of the disease by increasing intraglomerular pressure and glomerular filtration rate (markers of kidney function). It was simply assumed that

if a high protein diet was bad for a kidney disease patient it must be bad for everyone, but that idea turned out to be false.

In the textbook, *Total Nutrition: the Only Guide You'll Ever Need*, from the Mt. Sinai School of Medicine, the authors, Victor Herbert and Genell Shubak-Sharpe, had this to say about protein and kidney disease:

"High-protein diets have never proven to be a serious hazard for healthy people, although processing excess protein can overburden a liver or kidneys that are damaged by disease. That's why individuals with kidney disease are often put on protein-restricted diets."

Some doctors advise caution for their older patients because kidney function may decline with age and it's possible that elderly people may have less than optimal kidney health even though they haven't been formally diagnosed with kidney disease. Getting adequate protein is very important for older men and women to avoid sarcopenia, the muscle loss that occurs with age. But elderly individuals might be wise to avoid the extremes that a competitive bodybuilder would follow.

Do high protein diets cause osteoporosis?

In inactive people, some studies have shown that increased protein led to elevated calcium excretion. It has been theorized that this is because high protein intakes increase the acidity of the blood, and the body must "leach" calcium from the bones to buffer the acidity. The researchers thought that this calcium loss could lead to accelerated osteoporosis, especially in women.

While this has been observed in sedentary people, there's no clearly established link between high protein intake and osteoporosis. Some studies even suggest that if calcium is sufficient, increasing protein actually improves bone density. Sedentary women with risk factors for osteoporosis should be more cautious, but if you're athletic, you'll have lower risk because weight training and weight bearing exercise increases bone density.

Here's what Herbert and Shubak-Sharpe had to say on the subject:

"Our typical high-protein, high-meat diets have also been implicated as a factor in the development of osteoporosis, but these claims may be the result of misinterpreting scientific research. Studies have shown that adding purified protein supplements and amino-acid mixtures that have had their phosphate removed do increase excretion of calcium by the kidney in both animals and humans. However, several long-term controlled human studies carried out by Herta Spencer, M.D., at the Hines VA Medical Center in Illinois have shown that high intakes of

protein from natural protein sources such as meat, which have their phosphate intact, do not significantly increase calcium loss."

Final thoughts and recommendations

Mainstream doctors and dieticians often condemn high protein diets. Even if they concede that it's not unhealthy, they argue that it's wasteful and expensive to eat so much protein because the excess will be simply be converted into glucose and burned for energy. That might be true, but maybe that's not a bad thing for a physique athlete. This conversion of protein to glucose, a process called gluconeogenesis, is energetically costly, so it actually gives a slight edge in helping to achieve the ripped look.

In this sense, you could say that a high protein diet is not only a muscle builder, it's also a metabolic activator. Matched calorie for calorie with an adequate but lower protein diet, this thermogenic advantage is small, but when combined with protein's hunger-reducing effect and muscle preserving effect, a higher protein intake beats lower protein every time.

This doesn't mean you should go crazy with protein and eat as much as you can. Too much of any food will get converted into fat and eating too much of any nutrient can be unhealthy, especially if it predominates so much that it displaces other important nutrients. But when you weigh all the evidence, you see that from the viewpoint of getting leaner and more muscular, it's better to err on the side of too much protein than too little.

There's one more macronutrient to talk about – the one that's even more controversial than protein – carbohydrates! Are carbs your friends or your foes? You'll find out in the next chapter.

Chapter 11: Clearing Up Carbohydrate Confusion: Are Carbs Fat Loss Friends or Fat Loss Foes?

"Of all the macronutrients, carbohydrates have gotten the worst press – especially in the lay press – for reasons that are rooted in misunderstandings of physiology. There's as much confusion about carbohydrates as there is contempt."

—Alan Aragon, publisher of *Alan Aragon Research Review*

"Carbohydrates are premium fuel."

—Dr. Michael Colgan, author of *Optimum Sports Nutrition*

Pinpointing your perfect carbohydrate intake

In a previous chapter, you learned that diets on the extremes - *very low* or *very high* in carbohydrate - are not the most effective approaches for permanent fat loss. That leaves a lot of room in the middle. The goal of this chapter is to help you narrow down this wide gap and pinpoint the perfect carbohydrate intake for you based on your goals, your training and your body type.

You'll also learn about the different types of carbohydrates including which ones are best for energy, health and fat loss. You'll learn that some are healthful and some can be harmful. You'll learn how to distinguish processed from natural carbohydrates, fibrous from starchy carbohydrates and simple from complex carbohydrates. You'll read about the dangers of refined carbohydrates and the virtues of natural carbohydrates. And finally, you'll get an answer to the all-important question: Exactly how much carbohydrate should you eat?

Carbohydrates: fuel for body and brain

Unlike proteins, which are used as building materials, carbohydrates (aka "carbs") are used for energy, particularly for high-intensity exercise. Sports nutritionist Dr. Michael Colgan, author of *Optimum Sports Nutrition*, calls carbs "premium fuel." I've never heard a better definition. Protein can be broken down into glucose and used for fuel, but that's a highly inefficient process and you certainly don't want to sacrifice muscle protein. Fats are also used for fuel, but even fats don't burn as efficiently as carbs.

It's a common misconception that fat is a more efficient fuel source, but it's not – it's simply a more concentrated fuel source (nine calories per gram for fat versus four calories per gram for carbs). Carbs are your body's preferred and most efficient energy source. Scientists tell us that under normal conditions, your brain needs 100 to 130 grams of glucose per day. If you cut carbs too much, your physical performance and even your mental acuity usually take a nose dive.

Fat is stored in your body as a backup energy source. A 185-pound man with 18% body fat has 116,500 calories stored in his “reserve fuel tank.” Your body can also store carbs, but in much more limited quantities. Carbs are stored in your muscles and liver in the form of glycogen. About 400 grams of glycogen can be stored in your muscles (1600 calories) and approximately 100 grams (400 calories) in your liver.

Your body is always burning a mixture of carbs and fat for fuel, but the fuel mix changes based on the demands. During low intensity, long duration exercise, most of your energy comes from fat. Most of your energy also comes from fat while you’re at rest (although you don’t burn many calories worth of fat when you’re lying on the couch). During short bouts of high intensity exercise such as sprinting or weight lifting, carbs are the main fuel source.

Your primary fuel source can also change depending on which fuel is more readily available. If carbs are restricted, your body can easily use fat for fuel and your brain can run on ketones. However, carbs are the limiting factor in exercise performance because carbs are the more efficient fuel source. Intense exercise burns up muscle glycogen quickly and if you fail to replace it every day by eating carbohydrate foods, you “bonk” or “hit the wall” as athletes like to say. Within about three days of a severe carb cutback, your muscle glycogen will be severely depleted.

Reducing carbs may help fat loss along for various reasons, as you’ll learn in the next chapter, but extreme or prolonged low carb diets are never ideal for supporting serious training. Since cardio and weight training are such important elements of *Burn the Fat, Feed the Muscle*, we don’t recommend an extremely low carb or ketogenic diet.

Understanding the many types of carbohydrates

Ultimately, all the carbs you eat end up in your bloodstream as glucose (blood sugar), but you can’t lump all carbs together into one category, because they’re not all the same. Some carbs are good and some are bad. The good carbs are your friends; they supply you with energy and nutrients and help you get leaner and more muscular. The bad carbs are your foes; they have a greater potential for fat storage, they contribute to health problems, they’re nutritionally void and they rob you of energy.

To burn fat, build muscle, optimize your health and increase your energy, the key is to learn the differences between the various types of carbs, choose the right ones and eat them in the right amounts at the right times.

Simple carbohydrates (monosaccharides and disaccharides)

Structurally speaking, there are two broad categories of carbohydrates: Simple and complex. Simple carbs consist of a single sugar molecule (monosaccharide) or two sugar molecules linked together (disaccharide).

The monosaccharides include fructose, glucose, and galactose. The two we'll talk about the most are fructose and glucose. Glucose is found naturally in food or it can be produced in the body through the breakdown of complex carbs. Fructose is the type of simple carb found in fruit.

Disaccharides are formed by the combination of two monosaccharide molecules. Examples include sucrose (table sugar), which is formed by the combination of fructose and glucose, and lactose (dairy sugar), which is composed of galactose and glucose.

Types of simple carbohydrates (sugars)

Monosaccharides	Disaccharides
Glucose (blood sugar)	Sucrose (table sugar) glucose and fructose
Fructose (fruit sugar)	Lactose (dairy sugar) glucose and galactose
Galactose	Maltose (malt sugar) glucose and glucose

Simple carbohydrates and blood sugar

Due to their simple molecular structure, simple carbs such as sucrose are digested very quickly and cause a rapid rise in blood sugar. Your pancreas responds by releasing insulin, the hormone responsible for getting the glucose out of the bloodstream and into the cells where it can be stored or used for energy.

When there's a large blood sugar spike, there's a large insulin spike. The insulin quickly clears the sugar from the bloodstream, leading to a sharp drop in blood sugar known as reactive hypoglycemia. You probably recognize low blood sugar by its common symptoms: low energy, shakiness, weakness, mood swings, hunger and cravings. The hunger and cravings lead you back to the cookie jar, causing the sugar consumption to perpetuate itself in a vicious cycle of ups and downs throughout the day.

The truth about insulin and fat loss

When your insulin levels are elevated, fat storage enzymes are activated and triglycerides (fat) in the bloodstream can then be partitioned into fat cells for storage (lipogenesis). High insulin levels also inhibit enzymes that promote the breakdown of stored body fat (lipolysis). A "storage" hormone that's lipogenic and anti-lipolytic doesn't sound like your friend when fat loss

is your goal. In certain low carb diet circles, their proposed solution is to control insulin by eliminating insulin-stimulating foods (namely, carbs!) But banishing an entire food group is never the path to a balanced, healthy lifestyle.

Insulin is not entirely the bad guy as it is sometimes portrayed. Insulin is also an anabolic hormone that's essential for getting amino acids into the muscles for growth and carbs into the muscles for energy. Remember, your goal is not only to burn fat, but also to feed the muscle. Insulin transports nutrients into your muscle cells too, which is why many bodybuilders intentionally eat a large high carb meal – and even simple sugars – immediately after training.

Insulin doesn't make you fat in a cause and effect sense. A calorie surplus is the causal factor, insulin is simply a hormonal mechanism of storage. When you look at all of insulin's functions, you can see that insulin is neither good nor bad. It can, however, be a double-edged sword if you don't manage it properly.

The good news is, you don't have to cut out all your carbs to effectively manage your insulin and blood sugar. Please don't become a "carbo-phobic." Carbs play an important role in helping you gain muscle, burn fat and maintain high energy levels and the more active or athletic you are, the more important they are. You simply have to be smart about your carb choices.

The crucial difference between natural and refined sugars

When you hear about *simple* carbohydrates, you often think about white sugar and white flour products. These are well known as the "bad" types of carbs. But not all simple carbs are undesirable. Natural sugars are fine when eaten in balance with the other macronutrients and inside your calorie limits. These natural sugars include fructose (found in fruit) and lactose (found in dairy products).

Fructose in particular has been targeted as a bad guy in recent years to the point of alarmism and zealotry. Many people essentially claim that "fructose is evil," without distinguishing natural fructose in fruit from high fructose corn syrup (HFCS) in refined foods and soda. Only about 9% of the average caloric intake in the United States comes from fructose. For the typical American, only one third of that fructose comes from fruit, while the other two-thirds come from added refined sugars. I propose that refined sugars are the real problem, not naturally occurring sugars.

Is fructose really fattening?

What started the whole "fruit is fattening" myth? Well, fructose is processed differently in the body than other carbs. Fructose restores liver glycogen preferentially and your liver has a limited

storage capacity. Fructose can also be converted to triglyceride and stimulate lipogenesis, but you should look at the big picture before you jump to conclusions about what that means.

In humans, the liver can handle about 50 grams of fructose daily without stimulating any fat synthesis. A typical piece of fruit has only about 5-10 grams of fructose. At that dose, it would take a huge amount of whole fruit for any conversion of fructose into fatty acids.

On the other hand, you could easily hit 50 grams of fructose in a day if you drank a lot of soda or other drinks sweetened with HFCS. HFCS and also sucrose, which is 50% fructose, can provide large amounts of fructose and excess calories. HFCS consumption has increased by 1000% since 1970 and has been strongly associated with obesity.

Evidence that whole fruit helps with fat loss

Ironically, amidst all the fears about fructose, there's plenty of evidence that fruit actually helps with fat loss! Most fruits have a low number of calories per unit of volume. This comes from the high fiber and high water content, a combination known to increase satiety - the feeling of fullness after a meal. All fruits contain fiber, and some, such as raspberries, are extremely high in fiber.

Dried fruits and fruit juice on the other hand, are calorie dense. A large glass of orange juice contains 200 calories, a medium orange contains only 60. When fat loss is your goal, drinking a large portion of your calories is not a good idea. The whole food has more fiber, lower calorie density, and makes you feel fuller than liquid calories.

Whole fruit is a healthy food because it contains vitamins, minerals, fiber and antioxidants including vitamins C and E, carotenoids, flavonoids and polyphenols which may protect against free radicals. A study at the University of Navarra in Spain examined the effect of fruit on weight loss and health markers. One group of women was fed a hypocaloric diet with 5% fructose from fruit, while a second group was fed a hypocaloric diet with 15% fructose from fruit. There were no differences in weight loss. However, in the group with the higher fruit intake, the LDL (bad) cholesterol decreased and there was less oxidative stress. In a second study, the high fruit group showed improvements in cholesterol levels. The higher fruit group also retained more lean body mass (possibly because adequate liver glycogen is a potent anabolic signal).

There has been a lot of buzz about fructose in the news lately, but the fruit and fat loss controversy has actually been going on for decades in the bodybuilding world. Years ago, Dan Duchaine was one of the first bodybuilding gurus to write about how fructose was metabolized. He believed that at the level of competitive bodybuilding, removing fruit made a difference. And

then there was John Parillo, a bodybuilding trainer from Ohio, who always advised his bodybuilding clients not to eat fruit.

Like many ambitious young bodybuilders, I followed their advice and cut out fruit from my pre-competition diets in the early days of my career. I got super lean. I later put the fruit back in moderate quantities (one or two pieces every day). I still got super lean. If there was a difference, I didn't notice it. But to this day, certain corners of the bodybuilding community still can't completely shake the stigma that fruit is fattening.

For physique athletes heading down to single digit body fat, every little bit counts, so many bodybuilding and figure competitors still choose to minimize fruit even if it's just to make room for more fibrous vegetables and lean proteins. That approach might help you get ultra-lean too, but don't misconstrue that as meaning, "fruit is fattening."

As you would imagine, the idea that fruit consumption should be limited for fat loss also comes up in the low carb community. Many low carb dieters limit the fruit simply because they've chosen a diet philosophy that restricts the number of total carbs they're allowed to eat. With extremely low carb diets, sometimes all the fruit is removed. Again, don't misinterpret that.

Consider these statistics: Between 1970 and 1997, as health and fitness professionals had been imploring people to eat more fruits and vegetables, intake increased by only 19%, providing a mere 2.5 grams per day increase in naturally occurring fructose. In the same time frame, HFCS consumption increased by 26% per capita, from 64 g/d to 81 g/day, an average daily intake of 324 calories from added fructose. Just two 12 ounce soft drinks can provide up to 50 grams and 200 calories of fructose.

The bottom line: Whole, fresh fruit is not the bad guy; it's just an innocent casualty of bodybuilding tradition, low carb dogma and misunderstanding of human physiology. If you're eating fruit while consistently staying in a calorie deficit, you're going to lose body fat and get health benefits from the nutritional value. High fructose corn syrup and added sugars, on the other hand, deserve the bad rap and should be avoided as much as possible.

Lactose and dairy products: Do they belong in a healthy fat burning program?

Dairy products contain protein and carbohydrates. Lactose is the naturally occurring simple sugar found in dairy products. In recent years, dairy consumption has become almost as controversial as fructose. Some people wonder whether dairy products are fattening. Others are concerned that milk products might be unhealthy.

Physique athletes and others who want extremely low body fat have traditionally removed the dairy from their diets, at least temporarily before competitions or photo shoots. Some bodybuilders believe that dairy products are more easily converted to body fat due to the simple sugars they contain. Many swear that dropping dairy from their diets gets rid of bloating and puffiness, revealing more muscle definition. It might make a difference at the level of competition dieting, but calorie for calorie, there's no reason to believe that lactose or dairy products are more fattening than other types of carbs.

Actually what's most likely to undermine a fat loss program is the high calorie density of the full-fat dairy products. Full-fat cheeses for example, can add an enormous amount of calories to your meals. There's an easy solution for that: These days, you can find low fat and non-fat versions of just about anything, including cheese, milk, cottage cheese, cream cheese, sour cream and yogurt.

Some people consider pasteurized, homogenized store-bought milk to be a processed food or they worry about hormones and antibiotics. If that's a concern for you, there's a solution for that as well: choose organic. As long as your digestive system can handle it, dairy products can be a part of any healthy fat burning program. They add variety and flavor to your meal plans while giving you another superb source of high biological value protein in addition to your lean meat, fish and eggs. Vitamin D and calcium are an added bonus.

Not everyone can stomach dairy products. People with lactose intolerance don't have the enzyme necessary to digest lactose, so they get gas, bloating, water retention, abdominal cramps and diarrhea when they eat certain dairy products. In those with severe intolerance, they pay the price if they so much as touch the stuff. In those with a minor intolerance, the symptoms can be as subtle as a bloated feeling. Products such as Lactaid may help, but if you're one of the many who can't drink milk or eat dairy products, don't worry – this program works with or without dairy. It's your choice.

Complex carbohydrates (polysaccharides)

The second major carbohydrate category is complex carbs, also known as polysaccharides. Complex carbs are formed when thousands of sugar molecules are linked together in long chains. These chains usually take longer to break down and digest than simple carbs.

They provide sustained energy levels without the highs and lows in blood sugar and energy levels produced by eating simple carbs. Most complex carbs contain fiber, which slows down their absorption and helps stabilize blood sugar and insulin. They're usually more filling as well, allowing you to feel more satisfied on less food. Complex carbs from natural sources like vegetables are also more nutrient dense, whereas refined (white) sugar is nutritionally void.

Complex carbs: fibrous versus starchy

Starch is the storage form of energy in plants, much like glycogen is an energy storage form in human muscle. Starchy carbs are found in potatoes, cereals, grains, bread, pasta, rice, oats, wheat, legumes and beans. Your body is able to completely absorb and digest all the caloric energy in starches, so the calorie density of starch is higher than fibrous carbs.

Fiber is the indigestible portion of the plant and therefore passes straight through your digestive tract without all the caloric energy being absorbed. Fiber gives bulk to the intestinal contents, promotes healthy digestion and elimination, speeds the transit time of food through your digestive tract and protects you from gastrointestinal diseases and colon cancer. You could say that fiber is "nature's internal cleanser."

Fiber can help with fat loss by increasing fullness and automatically reducing calorie intake. Fiber appears to have a role in satiety and satiation through energy dilution, increased mastication, gastric distension, delayed gastric emptying and decreases in appetite stimulating hormones.

Some people think that a diet high in protein must be low in fiber, but that's not the case with *Burn the Fat, Feed the Muscle*, because this is not an extreme low carb diet. You eat plenty of lean protein on this plan but you also eat lots of greens and fibrous carbs. The combination of fibrous carbs with lean protein is what makes this program so healthy in addition to being incredibly effective for reducing appetite and burning fat.

A study from Tufts University said that in the United States, the average fiber intake is only 15 grams per day. The majority of dieticians and health organizations (such as the American Heart Association) recommend about 25 to 35 grams per day. That usually covers you pretty well.

A customized fiber formula was published by researchers at the University of Kentucky in the journal *Nutrition Reviews*. They recommended 14 grams of fiber per 1000 calories per day of energy expenditure. For a female at 2000 calories of TDEE per day that would be 28 grams of fiber. For a male at 2700 calories of TDEE that would be 38 grams of fiber per day.

How fibrous carbs help you burn more fat

Fibrous carbs such as leafy greens and other non-starchy vegetables don't contain many calories per serving. These low calorie density foods are your secret weapon in the war against fat. It's nearly impossible to over-eat green vegetables and fibrous carbs. You would literally get tired of chewing before you ate too much. For example, two cups of rice (a starchy carb) contains more

than 400 calories while two cups of cucumbers (a fibrous carb) contains only 48 calories. The volume is the same, but there is almost a ten fold difference in caloric density!

Common types of complex carbohydrates (starches and fibers)

Starches such as oats, beans, rice, potatoes and whole grains do contain fiber. In this program, however, we use the phrase “fibrous carbohydrates” to describe leafy greens and other non-starchy vegetables such as broccoli, asparagus and cauliflower. These fibrous carbs are much lower in calorie density than the starchy carbs. That’s why a fat burning nutrition program should be very high in fibrous vegetables and why it’s important you learn to recognize the difference between these two categories:

Starchy Carbohydrates

Potatoes
Yams
Beans
Oatmeal
Barley
Brown Rice
Lentils
Black eyed peas
Quinoa
Whole grain bread
Whole grain cereal
Whole grain pasta
Other whole grains

Fibrous carbohydrates (vegetables)

Broccoli
Lettuce
Cauliflower
Zucchini
Tomatoes
Asparagus
Brussels Sprouts
Onions
Bell peppers (red or green)
Green beans
Mushrooms
Cucumber
Spinach

High glycemic vs. low glycemic carbs

Complex and simple is an easy to understand way to differentiate the two major categories of carbs, but it’s important to know that this is an admittedly over-simplified concept. In general, complex carbs are released more slowly than simple carbs, but that’s not always true. Individual foods within each category may be metabolized at very different rates.

The glycemic index (GI) is a numerical scale that was developed to measure how quickly each carbohydrate food is broken down into glucose. The scale runs from 0 to 100 with glucose scored at 100 as the reference food. Surprisingly, some natural complex carbs such as potatoes are broken down into blood glucose very quickly. These are high GI foods. Some simple carbs such as apples are converted into blood glucose more slowly. These are low or medium GI foods.

The GI was initially created as a tool to help diabetics manage their blood sugar. However, the GI has attracted a lot of attention in the fitness and weight loss world.

Many diet programs base their carbohydrate recommendations entirely on the GI, claiming that high GI foods are fattening and low GI foods are not. One well-known health and nutrition guru even wrote, "High-glycemic foods like rice cakes, bread, and potatoes stress the body's insulin system and probably are chief culprits in obesity." Unfortunately, this is a misunderstanding of physiology that has only created more confusion and food demonization.

The truth about the glycemic index and fat loss

Although the GI may have some useful applications, such as managing blood sugar, numerous studies have shown that if all else is equal, eating low GI foods has little or no relevance to fat loss.

The GI has many limitations. First, it was developed based on the effects of eating pure carbohydrate alone. The ***Burn the Fat, Feed the Muscle*** program calls for combining carbs and protein together to make a complete meal. When carbs are eaten in mixed meals that contain protein and some fat, the GI loses much of its significance because the protein and fat slows the absorption of the carbs.

For example, mashed potatoes have a GI near that of pure glucose, but if you combine the potatoes with a chicken breast and broccoli, the GI of the entire meal is much lower than the potatoes alone. Rice cakes also have a high GI. But if you put a dab of peanut butter on them, the fat slows the absorption of the carbohydrates, lowering the GI of the combination.

The GI is also affected by meal frequency. The GI was developed based on eating a food while fasted. On this program, most people eat every three or four hours – that's about as far from fasted as you can get. Because undigested food from each previous meal can slow the absorption rate of the current meal and because frequent eating stabilizes blood sugar levels, this also makes the index lose some of its relevance.

Many bodybuilders and other experienced dieters have been known to drop out the potatoes, opting instead for lower GI starches such as yams and oatmeal. They believe that the "slower burning carbs" would lead to better fat loss. However, many others, including myself, have eaten white potatoes even on competition diets and had no difficulty reaching "ripped" single digit body fat.

White potatoes – a high GI food – may even satisfy your hunger better. In a study published in the *European Journal of Clinical Nutrition*, researchers discovered that potatoes had by far the

highest satiety index score of all the foods tested, revealing that potatoes make you feel fuller than other foods. To suggest that foods like potatoes are fattening and avoid them simply because they're high on the GI is a mistake. Both research and real world results confirm it and that's why we don't use the GI scale in this program.

If blood sugar management is an issue for you, then GI is a factor you might consider when deciding which carbs to eat. You also may want to look into the glycemic load and the insulin index, which complement the GI data. Consult a doctor or a registered dietician for any clinical nutrition issues you have. For healthy people simply wanting to get leaner, there are far more important factors than the GI, including whether your carbs are low or high in caloric density and whether they're natural or refined.

Natural vs. refined carbs

The most important distinction you can make about carbs is the difference between natural and refined. The ultimate test for whether a carbohydrate is natural and unrefined is to ask, "Did this food come out of the ground or off the tree or plant this way?" If the answer is yes, then it's a natural, unrefined food.

The more a whole grain is refined and processed, the finer the particle size becomes, the more it loses its complexity and takes on the properties of a simple carbohydrate. That's why anything made out of white flour is not recommended as a daily staple food (that includes white or enriched pastas, breads, pretzels, crackers and bagels).

The low fat diet era of the 1980's spawned a huge variety of fat-free foods and a focus on fat grams. Although low fat eating is a good way to help control your calorie intake, counting fat grams alone is not enough. A more complete strategy is to focus on the calorie deficit and reduce all calorie dense foods including refined sugars as well as the fats.

Of all the nutritional bad guys, refined carbohydrates (white sugar, sweets, soft drinks and white flour products) are arguably the worst. In fact, an overdose of refined sugars and other highly processed carbs is probably more responsible for poor health and excess body fat than any other single factor.

If you did only one thing to your nutrition program starting today – reduce your intake of refined sugars – the difference in your health, energy and body fat levels would astonish you!

You might be wondering, "Could refined sugar really be that bad?" After all, if your calories are under maintenance, what harm could a little cookie or candy bar do? Well, if you kept your intake to "a little" consumed occasionally, you'd be right - it probably wouldn't impact your

health or your physique at all. But a “little” consumed habitually adds up over time. The average American consumes an unbelievable 156 pounds of refined sugar every year.

Nutritionist Nancy Appleton, PhD, author of *Lick the Sugar Habit*, warns that heavy sugar consumption can do more harm than most people suspect. In fact, Dr. Appleton tallied up a total of 146 reasons why a high intake of refined sugar can be harmful to your health. Listed below are some of the big ones.

Ten of the most important reasons to avoid sugar:

1. Refined sugar can contribute increased body fat
2. Refined sugar can increase triglycerides
3. Refined sugar can decrease the good HDL cholesterol
4. Refined sugar can suppress your immune system
5. Refined sugar can deplete your body of important minerals
6. Refined sugar can increase serum insulin
7. Refined sugar can cause reactive hypoglycemia
8. Refined sugar can cause tooth decay
9. Refined sugar can contribute to diabetes
10. Refined sugar can increase incidence of depression

How to reduce your intake of “bad” (refined) carbs

Just because a label says fat-free or low-fat doesn't mean it helps you get leaner or it's good for you. For example, many nonfat frozen yogurts are loaded with refined sugar. Some fat-free cakes and cookies are nearly 100% sugar. Because we are still bombarded with the "fat is bad" and “low fat is good” message to this day, many people switch to non-fat diet foods, but they forget about the refined sugars.

They're easily missed, too, because small amounts of sugar are hidden in foods you might never think of such as nonfat salad dressings, steak sauce, tomato sauce, cranberry sauce, sliced lunch meats, ketchup, mayonnaise, soup, canned fruits, whole wheat bread, whole grain cereals and too many others to mention. If you eat these items every day, it can add up.

It would be difficult for you to eliminate 100% of the sugar. Fortunately, you don't have to. The American Heart Association published a scientific statement suggesting that men set a “prudent” daily upper limit of 150 calories of added sugars and women an upper limit of 100 calories. I would strongly urge you not to let sugar become a daily habit. The most successful people on this program usually keep their sweet treats and other “cheat meals” down to once or twice a week.

How strict to be with your sugar cutbacks is up to you. If you get your calories, protein and other nutritional priorities in order, then you don't have to give up your favorite sweet stuff completely. But what you *should* do is make a concerted effort to cut down your sugar intake as much as possible, especially from the obvious calorie dense culprits such as candy, cookies, doughnuts, desserts, sugary cereals, table sugar and so on.

If you're a habitual drinker of soda or other types of "liquid sugar," that's one of the best places to start improving your nutrition. I've heard countless success stories from my readers about how kicking a daily soda habit jump started their fat loss even with no other changes!

How to spot refined sugars by reading food labels

Don't judge a food entirely by the grams of carbs or even the grams of sugar on the nutrition facts panel because that doesn't tell you what kind of sugar it is. Dig a little deeper and inspect the ingredients list to see if *refined* sugars have been added, then make your decisions based on the calories, total carbs and the type of carbs, not one or the other.

For example, on the nutrition facts panel of one popular brand of sugar-free, fat-free yogurt, it says that out of 15 grams of carbohydrates, 9 grams are sugar. But if you look at the ingredients list, you'll see that there are no added sugars. The 9 grams of sugar come from lactose, the *naturally occurring* simple sugar in dairy products.

Added refined sugars can be identified in the list of ingredients under different names including high fructose corn syrup, corn syrup, rice syrup, glucose syrup, sucrose, dextrose, brown sugar, turbinado sugar and invert sugar. Labeling laws require that ingredients are listed in the order of their precedence, so if any kind of refined sugar is listed as one of the top two or three ingredients, then that's not something you should eat in large amounts or on a daily basis.

Here's an example: Most protein bars, which are marketed as bodybuilding or health foods, are loaded with sugar. Although the total carbohydrate grams may not be high, if you read the ingredients list, don't be surprised if you see protein powder as the first ingredient, with high fructose corn syrup second.

Sugars, refined carbohydrates and the calorie density principle

Calorie density is an excellent criterion to use for choosing your carbs. Calorie density is simply the number of calories per unit of volume. Eating a lot of high fat foods can push you into a calorie surplus quickly because dietary fats have the highest calorie density of all the macronutrients, at nine calories per gram. But many refined carbs and sugars can also be surprisingly calorie dense and very easy to overeat.

Pasta is a prime example. With 270 calories per cup, pasta is extremely calorie dense. Most people are more likely to have three cups of pasta than one. That's 810 calories, not including what you put on it or what you drink with it.

Carbohydrate foods such as bread, pasta, bagels and cereal are considered complex carbs, but if you think about it, you'll realize that all of them are processed. You've never seen a bagel tree, have you? The milling of grains into white flour decreases the particle size while increasing the number of calories per unit of volume. In general, the smaller the particle size and the lower the fiber and water content, the higher the calorie density. The whole grain varieties are better, because they retain some of the nutrients and fiber, but even they are somewhat processed and high in calories.

When it comes to calorie density, you even have to be cautious of "natural" sugars. Many people swear off white sugar and seek out natural or less refined alternatives. While sweeteners like honey, agave nectar, maple syrup and molasses are less refined forms of sugar and may even have significant nutritional value, they're still very calorie dense sugars.

In "natural" cereals or baked goods, you often see sweeteners like evaporated cane juice which has been called, "a healthy alternative to refined sugar." It's easy to feel good about yourself shopping in a health food store and choosing the "natural" version of a product instead of the one with white sugar. Just remember, "natural," "healthier" or "more nutritious" does not always mean "low calorie" and as you learned in chapter six, it's entirely possible to get fat on high calorie natural foods. If you want to keep high calorie natural sugars to a minimum and you want to avoid artificial sweeteners, consider the herb stevia as a natural, low calorie sweetener.

Refined carbohydrates and the nutrient density principle

The milling, bleaching and enriching of grains not only increases their calorie density, it also strips away much of the nutritional content. You have the option of using lightly processed carbs on this program, preferably the whole grain varieties, but always be keenly aware of the nutritional value of everything you eat, given how many calories it's costing you. Think of every food – and especially sugar - the way you think of money when you're on a tight budget. Ask yourself, "Is it worth spending my calories on this?"

Sucrose (white table sugar), for example, is 99% pure calories; no vitamins, no minerals, no amino acids, just empty calories. Some experts consider white sugar worse than zero nutrition. They see it as negative nutrition because it depletes minerals from your body.

Carefully controlled research has proven that you can still lose weight while eating sugar if you're certain you're in a calorie deficit, but that doesn't mean a low calorie Twinkie diet is good

for you. If you want to get leaner and healthier, you should care about calorie *quantity* and calorie *quality*.

A food that contains a large amount of vitamins, minerals, phytochemicals and other nutrients per unit of volume is known as having a high “nutrient density.” Fibrous vegetables and whole fruits top the list. When you’re on a calorie budget, these nutrient-dense carbs are the best way to spend your calories.

Carbohydrate recommendations: What the conventional wisdom says

The American Heart Association, the American Dietetic Association, The National Research Council, The National Academy of Sciences and virtually every other health, nutrition and medical organization in the world recommends a diet containing about 55% of total calories from carbohydrates.

This is a fine guideline for healthy, active people, provided the carbohydrates are chosen with care and the calories are appropriate. The problem anytime you’re given one single prescription is that it doesn’t account for metabolic individuality, carbohydrate tolerance, activity levels, the type of exercise you’re doing, the size of your calorie budget or the type of goal you’re seeking.

Carbohydrate requirements can vary greatly from person to person. Endurance athletes may do best with as many as 60%-65% or more of their calories from carbs, while competitive bodybuilders in a pre-contest mode might reduce their carbs to half of that or less.

Carbohydrate gram recommendations for baseline nutrition

Burn the Fat Feed the Muscle is better than rigid low carb diets or high carb diets because it’s carb-customized. The protein and healthy fats should be held fairly steady, but you have a lot of room to adjust your carb intake on this program.

You do need somewhere to start though. The baseline for carbohydrate consumption on *Burn the Fat, Feed the Muscle* is 50% of total daily calories (just slightly lower than the conventional recommendations to allow for a slightly higher protein intake). For most people on fat loss programs including weight training and cardio, this is a sensible place to begin because it’s maintainable, non-restrictive and supports hard training.

After establishing your baseline and seeing how you respond, you can then experiment and make adjustments to your carbs based on your results.

Baseline carbohydrate recommendations for women

1500 calories per day:

1500 calories X 50% = 750 calories from carbohydrates

There are 4 calories in each gram of carbohydrates

750 carbohydrate calories divided by 4 = 187 grams of carbohydrates per day

Baseline Carbohydrate recommendations for men

2400 calories per day

2400 calories X 50% = 1200 calories from carbohydrate

There are 4 calories in each gram of carbohydrates

1200 carbohydrate calories divided by 4 = 300 grams of carbohydrates per day

These are just examples; your personal carbohydrate intake needs to be customized. Highly active or athletic people will need more calories and more carbs. For example, a very active female who trains five to six days per week would probably have a calorie target closer to 1700 per day, with baseline carb requirements of 212 grams per day. A very active male might require closer to 2700 calories per day with baseline carbohydrate requirements of 337 grams per day.

Also keep in mind that these gram amounts are based on deficit eating, not maintenance, weight gain or athletic performance. It's not uncommon for endurance athletes to require upwards of 500-600 grams of carbohydrate per day for optimal performance.

Burn the Fat, Feed the Muscle is primarily intended for improving body composition. Physique sports and endurance sports can call for very different nutritional approaches and athletes need to adjust their nutrition appropriately for their sport. Regardless of whether you're an athlete or you just want to get leaner and healthier, one size does not fit all and without a doubt, carbs are the biggest variable in any nutrition plan.

Conclusion

So now you're an expert on carbohydrates. You know the difference between simple and complex; natural and refined, starchy and fibrous and high GI vs. low GI varieties. You know how many grams of carbs you should eat and why quality carbs are important for maximizing your health, energy and body composition. You now understand that carbs aren't evil, and you don't have to be afraid of them. But you must choose them wisely, because the wrong carb choices can become harmful to your health and contribute to a huge surplus of excess calories.

In the next chapter, you'll discover at last, the truth about the low carb diet. I'm going to teach you why – at certain times, for certain reasons – reducing carbs can help you break any fat loss plateau and get as lean as you want to be. I'll even reveal a new twist on the old low carb diet that until now, was known by only a small handful of the world's best bodybuilders and fitness models!

Chapter 12: How To Get As Lean as a Bodybuilder or Fitness Model With a New Twist on the Old Low Carb Diet

"For those of you who have failed to attain a low level of body fat using a high carbohydrate diet, and for those who have exercised religiously, hour upon hour, week after week, and failed to attain a "six pack rack" of abdominals and low body fat, the low carb approach may be suited for you"

—Chris Aceto, author of *Everything You Need to Know About Fat Loss*

"Basically, I manipulate my carbohydrate intake to turn my body into a fat burning machine!"

—Chris Faildo, Team Universe bodybuilding champion and one of the world's best natural bodybuilders

The low carb vs high carb debate in fat loss

Low carb weight loss diets have with us for ages. The first one on record goes all the way back to 1863 when William Banting penned his *Letter on Corpulence*. Since then, the low carb diet has come in and out of vogue countless times, most notably when Dr. Robert Atkins wrote the original version of his famous self-titled diet book in 1972. After the low fat diet craze of the late 80's and 90's started to fade out, there was another huge resurgence of interest in the low carb diet.

The food and supplement industries took it to the bank. Everywhere you looked, you saw low carb drinks, low carb meal replacements, even low carb pasta! In the bookstores, low carb diet books such as *Dr. Atkin's New Diet Revolution*, *Protein Power*, *The Carbohydrate Addicts Diet* and *Sugar-Busters* were all bestsellers and new titles kept hitting the shelves year after year.

Although the most recent wave of low carb popularity hit its peak and declined somewhat, low carb has gone mainstream. Unfortunately, debates about low carb diets have created a huge amount of confusion and controversy. For every guru who says low carb is the best fat burning diet, there's another guru who says it's the worst. For every doctor who says low carb is dangerous and unhealthy, there's one who says it's a health miracle. For every low carb success story, you see a high carb success story. How are you supposed to make sense of it all? Who is right?

In this chapter, you'll learn how it's possible that both sides may be right. Depending on your body type, activity level and goals, cutting carbs may or may not be a good idea. For certain

goals at certain times, a reduced carb diet – done with a new twist you’re about to learn - can accelerate fat loss beyond anything you’ve ever experienced before.

Once you’ve got the basics covered, you can use these advanced strategies to help you to break fat loss plateaus, burn off the final ten pounds of stubborn fat or get in peak condition for a body transformation contest or photo shoot. These are the same techniques for “getting ripped” that physique athletes and fitness models use. They’re also the same techniques I’ve used to hit low single digit body fat for more than two dozen bodybuilding competitions.

The Burn the Fat, Feed the Muscle approach to ultimate leanness

Most popular weight loss programs start you with the strictest version of their diet right from day one. Typically that means severe restrictions on carbs. A 30-70 gram per day limit is common. After you’ve lost the weight, you’re allowed to gradually “loosen it up,” putting some carbs back in. Some of these programs call the initial phase “induction” while others call it a “quick start.”

The quick loss of scale weight can be motivating and makes the program appear more effective, but essentially they’ve simply put you on a crash diet. ***Burn the Fat, Feed the Muscle*** does it the other way around. We use the bodybuilder’s method, where you start with a normal (higher) carb intake (similar to a bodybuilder’s off season eating plan) and gradually “tighten it up” by reducing calories and carbs as your weekly results dictate and you get closer to peak condition (similar to a bodybuilder’s pre-contest diet).

Why do I recommend a gradual reduction of carbs and calories? One reason is because ***Burn the Fat, Feed the Muscle*** is an athlete's style of eating, so it's a foregone conclusion that you're going to be training hard. That alone calls for a somewhat higher carb intake than a sedentary person. The sudden removal of carbs can wreak havoc on your training intensity.

The second reason is because if you play all your cards from day one, when you hit a plateau later, what then? There's nowhere to go – your carbs and calories are already slashed to a bare minimum. The smarter approach is to always keep an ace in the hole. Why not start out eating the most carbs you can, while still losing body fat?

The third reason is, why suffer unnecessarily? The last few pounds are always the hardest to get rid of because of the way your body adapts as you lose weight. The initial weight loss should always be the easiest. It doesn't require any crazy strict diets to get the ball rolling, so depriving yourself from day one doesn't make sense.

I know people who made one or two changes - little things like cutting out soda and reducing their visits to fast food restaurants – and when combined with a simple training program, that alone got them 80% of the way to their goal. No carb cutting, no forbidden foods, nothing crazy at all – just a calorie deficit and healthier choices. Only later, for the final push toward six pack abs, did they need to tighten up and get stricter.

If you're having a hard time losing even the first few pounds, there's something seriously wrong with your nutrition strategy. Crash diets are the last thing you need – you need to get back to basics. It's the final phases of fat loss – achieving goals like single digit body fat or ripped abs - that takes the most serious tightening of the diet belt. Cutting back on carbs is one of the best ways to tighten up.

The truth about low carb diets

There are significant weight loss benefits and even some health benefits to be gained from cutting back on carbs – especially sugar and refined carbs. You have to cut calories somewhere to achieve a calorie deficit, right, so why not carbs? The trouble with many of the popular low carb programs is that they're based on some faulty assumptions which are responsible for much of the confusion on this subject.

One is that *everyone* will respond poorly to a high carb intake. Genetic tendencies toward carb intolerance do exist – it's a part of the body type you were born with. But genes don't express themselves until they mix with behavior and environment. Exercise is a lifestyle choice, but most people choose to spend more time in front of a TV than under a barbell. People who burn more can eat more and carb tolerance can actually improve when you live the active fitness lifestyle.

Another is the belief that carbs are more fattening than other foods, which was thoroughly debunked in the last chapter. There's no reason that you have to avoid carbs to lose weight. The only condition that's absolutely mandatory for weight loss is a calorie deficit. The truth is that outside their ability to be easily over-consumed, carbs are not inherently fattening. It's more accurate to say that *a reduction in carbs with an increase in protein gives you an extra advantage in fat loss*, especially the last few stubborn pounds.

When I talk about the low carb approach, I intentionally use the word “diet” because I don't see it as a lifestyle, I see it as a temporary tool to help you break plateaus or reach peak condition. A more balanced macronutrient split that doesn't eliminate food groups, combined with plenty of exercise, is the real ideal lifestyle plan.

When to use a low carb diet

Under some circumstances, reducing carbs can be an effective way to help speed up fat loss. Here are the three situations where low carb dieting is most appropriate:

1. For carb-intolerant endomorph types

After years of working with hundreds of clients in person and thousands over the internet, I've found that most people have no trouble getting results on a good baseline nutrition program without resorting to any major carb restriction. But there's always a group of people who struggle with body fat more than others and are often frustrated with their lack of results despite their honest efforts. We call them endomorphs. Many of them have metabolic syndrome, are insulin resistant, and don't respond as well to the high carb approach. A reduced carb diet with more lean protein and healthy fat can be an important part of their solution.

2. Breaking a plateau

It's extremely common to get great results for weeks or even months, then all of a sudden your fat loss slows down or stops completely. That's actually part of your body's natural response to cutting calories and losing bodyweight. The longer and more severely you cut calories and the more weight you lose, the more your metabolism slows down and the harder it is to keep losing more fat. That is, unless you have some plateau-breaking strategies in your fat burning toolkit. Pulling back on the carbs while keeping the protein high is as close to a sure thing as you'll find. Using a cyclical low carb diet (which you'll learn about later in this chapter) can give a sluggish metabolism a kickstart or even help prevent plateaus before they happen.

3. Bodybuilding, physique, fitness or figure competition

Reduced carb diets are still considered controversial in some corners of the health and fitness world, but almost all bodybuilders and fitness models use them. Some restrict carbs quite severely, others only moderately, but I don't know any successful physique athletes who don't follow a high protein diet and use at least *some* degree of carb restriction when it's time to get ripped for a competition or photo shoot. I find that commonality striking, and since bodybuilders are the leanest muscular athletes in the world, you might want to sit up and take notice too.

Four advantages of the reduced carb diet

Low carb diets have advantages and disadvantages. Although the pros number fewer than the cons, the advantages of reducing carbs and increasing protein can be significant.

1. Low carb, high protein diets are highly thermic

Protein has the highest thermic effect of any food (nearly 30%). For example, if you eat 100 calories of chicken breast, 30 of those calories are burned off just to digest and utilize it. The net caloric value is only 70 calories.

Ironically, it's the high protein that gives you the metabolic advantage, not the low carbs, so it may be more accurate to say that "high protein, low carb diets help accelerate fat loss" rather than give the credit to low carbs alone. Too much of any food can be stored as fat, but due to the high thermic effect, protein is less likely to be converted to fat than any other macronutrient.

2. Low carb diets help control calories, reduce hunger and increase satiety.

One of the most well-known benefits of eating more protein is that protein is the most satiating of all the macronutrients. Many people believe that dietary fat is the most satiating, but that's incorrect. Dietary fat makes food taste richer so it has a psychologically satisfying effect, but it doesn't physiologically quell hunger the way protein does.

When you eat more lean protein relative to carbs and fat, that alone tends to reduce caloric intake automatically, but protein actually decreases hunger and makes you feel fuller through hormonal mechanisms. Eating a high protein diet can increase glucagon like peptide (GLP-1), a hormone that makes you feel fuller. A high protein meal also stimulates release of the satiety hormone PYY.

3. Low carb diets help control insulin

When you reduce carbs, you reduce insulin output. Since insulin is a storage hormone and it prevents stored fat from being released, controlling insulin with carb restriction may help increase fat loss. This is especially true when it comes to the last few pounds of stubborn fat. Certain types of stubborn fat deposits are highly sensitive to the effects of insulin and more resistant to releasing the stored fatty acids. When insulin is low, the stubborn fat can more easily be released into circulation and then burned for energy.

4. Low carb, high protein diets help reduce water retention.

A high protein, low carb diet tends to decrease water retention. That gives a more defined look to your muscles. Bloating and puffiness from water retention is only temporary and shouldn't be confused with real changes in body composition. However, the improved muscle definition is just one more reason so many bodybuilders and fitness competitors prefer this type of diet.

Eight disadvantages of the low carb diet

Before you consider cutting carbs or trying a bodybuilder's competition diet, it's important to know about the downsides as well. This section lists eight of them, which can help you can make an informed decision about whether carb restriction is right for you.

1. Low carb diets are difficult to stay on.

By their very nature, low carb diets are more restrictive and difficult to follow. On the most extreme type of low carb diet, you're only allowed to eat protein and fat with limited amounts of leafy greens and non-starchy vegetables. I'm sure almost anyone could grin and bear that for a little while, but extremely restrictive diets require tremendous willpower and almost always set you up for cravings and binges. Many people fail simply because they can't stay on the wagon.

2. Low carb diets have a high relapse rate.

If you lose weight quickly on a low carb diet, the odds of relapse and weight re-gain are usually higher. This problem isn't just the plight of weight loss dieters. I've seen seasoned bodybuilders gain 20 lbs in a matter of *days* after a contest because they went on a sugar binge after a four-month diet of protein, salad and fibrous veggies. Transitioning off a low carb diet has to be planned carefully and executed gradually, preferably re-introducing the carbs a little at a time with each passing week. It takes self-control and discipline to pull it off.

3. Low carb diets can be unbalanced and lacking in essential nutrients.

Any diet that requires you to eat mostly one food or food group or to remove or severely restrict an entire food group is not balanced. That means it's more likely to be missing important nutrients as well as harder to follow. Some low carb diets are so strict with their carb limits that even fruit is off limits and vegetables must be kept to a minimum. That can leave you short on fiber and important vitamins and minerals. A balanced nutrition program, by definition, has a nice mix between protein, carbs and fats and includes a wide variety of foods, not an overemphasis on one food or food group.

4. Low carb diets may be unhealthy.

Low carb diets that are low in fat and low in carbs (leaving mostly protein), will almost guarantee rapid weight loss, but without adequate fiber and micronutrient intake, this type of diet can be unhealthy, especially if sustained for more than a short period of time. Some low carb

(ketogenic) programs are actually high in fat, not high in protein. Your diet is not healthy if most of your fats are saturated at the expense of healthy mono and poly-unsaturated fats and healthy vegetables. It's also not smart to eat large amounts of processed low carb foods. Just because it's low carb, doesn't mean it's good for you.

5. Low carb diets can kill your energy levels.

One of the biggest complaints from low carb dieters is the drop in energy and training performance. That's why most athletes follow moderate carb or high carb diets. Many low carb dieters notice that there's an adaptation phase where the initial weeks of the diet are rather miserable, but they say it gets easier as the body gets used to it. However, most people who are serious about their training agree that maintaining energy and workout intensity on low carbs is an ongoing challenge.

6. Low carb diets can produce deceiving weight loss results

Much of the weight loss in the initial phase of a low carb diet comes from water and glycogen depletion. It's not uncommon to see four to eight pounds a week drop off in the first two weeks. But when you judge your results by body composition instead of body weight, you can see how the results are deceiving. For example, if one pound is fat, one pound is muscle and three pounds is water, a five-pound weight loss doesn't look so impressive after all.

7. Low carb diets affect your mood and mental state.

Low carb diets are infamous for producing "brain fog." When you deprive yourself of carbs, it's not uncommon to become moody, irritable and an all-around grouchy S.O.B.! Ask anyone who has ever done a strict low carb diet (or anyone who has lived with a low carb dieter), and they'll tell you. The stories (and jokes) about grumpy low carb dieters and the "Jeckyl and Hyde" personality change are numerous - even legendary!

8. Low carb diets may increase risk of muscle loss

Carbs have a protein-sparing effect. When carbs are restricted, your body can easily use protein for energy through a process called gluconeogenesis. Advocates of low carb dieting often claim that ketosis prevents you from losing muscle. That's highly debatable. Preventing muscle loss is a challenge on any calorie-restricted diet and depends on many variables. But more often than not, I've seen all kinds of low carb diets increase the risk of losing muscle, especially if protein isn't high, if calories are always low and if the dieter isn't serious about weight training.

Why do low carb dieters talk so much about “ketosis?”

Before we go into detail about the unique ways we manipulate carbs in *Burn the Fat, Feed the Muscle*, let me take a quick tangent to briefly explain why you hear about ketosis so often in discussions about low carb dieting.

In the absence of carbs, fats break down incompletely in the liver, producing by products called ketone bodies, which are used as an alternate fuel source for the brain. This is known as ketosis and it indicates that metabolism has shifted from glucose burning to fat burning. Ketosis can occur when your carbs fall below 100 grams a day, although most ketogenic diets call for as little as 40-70 grams a day or less.

As you can see, ketogenic diets are extremely strict with their carb limits, but they don't limit the fat and protein. It sounds great at first, being allowed to eat rich, fatty foods (sans the carbs), but most people start to quickly miss their favorite carbs. In my own experiments with keto dieting, I found that eating nothing but protein and a lot of fat became distasteful very quickly.

High carb diet advocates have argued that ketogenic diets are dangerous and unhealthy. That could be possible in some cases, but the real reason I'm not a fan is because ketosis and extreme carb restriction is simply not necessary for fat loss. Many low carb advocates promote ketosis as if it were some kind of magic, but the truth is, tightly controlled randomized trials have never proven ketogenic diets to be more effective than less severe low carb diets over the long run.

Ketogenic diets have probably been used more in the mainstream weight loss world, but bodybuilders have been known to use them as well. Over the years though, the keto diet lost favor to the carb cycling approach, and that's now the preferred method in the physique world.

3 secrets to make low carb diets more effective and easier to follow

Reading the list of potential down sides might be enough to make some people steer clear of low carb diets. But there are a few ways to get the benefits of low carb without all the side effects. The first is using moderate carb reductions with increased protein, not total carb removal. The second is carb targeting. The third is carb cycling.

For people in hard training, these bodybuilding nutrition methods are vastly superior to the old style of low carb diets found in most of the popular diet books. When you put them together, the result is incredible muscle definition and rock bottom body fat levels – while maintaining all your hard-earned muscle mass!

The moderate carb, high protein diet (BFFM Phase II)

Some studies have shown that replacing just one serving of carbs with one serving of lean protein per day is enough to make a difference. A 10% – 15% reduction in carbs with a corresponding increase in protein and good fats can sometimes work wonders.

When you drop your carbs down slightly, and bump up your protein slightly, this is the second phase of ***Burn the Fat, Feed the Muscle***. The adjusted macronutrient ratios might look something like this:

The Maximum Fat Burning Diet (“Phase II”): Moderate carbs, high protein

40% carbohydrates

40% protein

20% fat.

Forty percent carbs is not a low carb diet by most people’s standards – it would be considered a moderate carb program. This usually works out to about 140 to 180 grams of carbs per day for women and 210 to 240 grams per day for men. However, even this modest reduction is often enough to make a difference, especially for endomorphs. The extra protein is also helpful for dieters to build and retain lean body mass.

The low carb, very high protein “competition diet” (BFFM Phase III)

When you have serious fat loss goals, you might consider decreasing carbs to as low as 25-30% of total calories. This is phase III in the ***Burn the Fat, Feed the Muscle*** program, where the diet has been tightened up to the strictest level. This is the final phase, because we never cut carbs completely on this program.

This type of program would usually only be used by someone with a really stubborn last few pounds or by a competitive physique athlete. That’s why it’s often called a “competition diet.”

The Competition Diet (Phase III): Low carbs, very high protein

25-30% carbohydrates

45-50% protein

20-25% fat.

For the average male, the phase III competition diet is usually about 150 to 200 grams of carbs per day. For the average female, the carb intake is usually around 100 to 130 grams per day. The grams of carbs typically come close to 0.8 to 1.0 grams per pound of lean bodyweight. The

protein at this phase is very high. It usually works out to about 1.5 to 1.75 grams per pound of bodyweight or even slightly more.

If you're uncomfortable with very high protein diets for any reason, it's not mandatory to progress to this final phase. You also have the option of making up the difference in calories by eating more healthy fats instead of more protein (for example, 30% carbs, 30% fat, 40% protein).

This is a temporary high protein, low carb peaking diet and shouldn't be maintained for more than 12-16 weeks prior to the contest or photo shoot. Afterwards, most people would gradually shift back to a baseline nutrition plan with more carbs and less protein for maintenance or muscle building goals.

Your daily carb intake: How low is too low?

Low carb diet advocates often argue that we don't need carbs at all. Technically speaking, they're correct. The textbook definition of "essential" refers to whether your body can manufacture a nutrient on its own or has to obtain it from food. There are essential amino acids, essential fatty acids, essential vitamins and essential minerals but there are no essential carbs.

If you have all the essentials, plus adequate energy, you could survive and even stay healthy on protein and fat with near zero carbs. The question is, do you just want to "survive?" You can survive for weeks without food, but that doesn't mean it's a good idea to eat nothing for weeks on end. You can lose weight on a 100% Twinkie diet, provided your calories are in a deficit every day. That doesn't mean it's a good idea to eat nothing but Twinkies.

Just because you can survive on protein and fat doesn't mean that's the best way to do it either, especially if you're athletic. If you want peak performance, a muscular body and a lifestyle you can enjoy, without long lists of forbidden foods, then you need carbs. It's simply a matter of finding the right amount for you.

When it comes to cutting carbs, there's a definite point of diminishing returns. The point is not the same for everyone, and it takes some experimenting. When you're playing around with your carb intake, pay close attention to how you feel in and out of the gym – your observations can help you fine tune your intake. You'll know it when you reach your "critical level," because when you've dropped your carbs too much, all the side effects I mentioned earlier begin to rear their ugly heads.

Beyond the disadvantages we already discussed, there's some evidence to suggest downsides of extreme carb cuts that don't occur with more moderate carb cuts. For example, research

published in the *Journal of Endocrinological Investigation* found that T3 (active thyroid) levels were readily affected by dietary intake and that T3 levels fell when the carbohydrate content of the diet was below 120 grams per day, regardless of the calorie intake.

We also know that the anti-starvation hormone leptin falls with both reduced calories and reduced body fat levels. It's an increase in carbs - above all the other macronutrients and above calorie level alone, that restores leptin to normal levels and helps reduce the symptoms of the starvation response.

Coincidentally, the government recommendation for minimum carb intake - the dietary reference intake (DRI) – is 130 grams per day. Taken together with the need for fueling high intensity workouts, I think all this data gives us some pretty good reasons to suggest somewhere around 120-130 grams per day as a good low end for carb intake for anyone active and in training. That corresponds fairly closely to our recommendation of no less than 25 to 30% of total calories from carbs.

Your personal response may vary. Some people tolerate low carbs better than others. Females, who have lower energy needs, can often go a little lower (100 grams or so) on the stricter competition diets. But most athletes will tell you that very low carb diets are a real drag on their energy, workout performance and mood.

The carb targeting technique for better body composition and peak performance

In the past, a big deal has always been made out of the time of day you eat, especially carbs. For example, I've known thousands of people over the years who said they got leaner by eating fewer starchy carbs at night. I would include myself in that group. Known as carb tapering, where you front load your carb calories earlier in the day and eat less at night, this can be a good calorie control strategy and may help prevent late day hunger and nighttime binge eating.

However, as research on nutrient timing has advanced over the last decade, more and more attention has been paid to when you eat relative to your training than relative to the time of day. I've almost always trained in the morning or early afternoon which is probably why I thrived on more food early in the day and less food later.

There has never been a shortage of theories or opinions about the best time of day to work out or eat your meals. But the primary objective of nutrient timing that most experts agree on is to provide more fuel and nutrients when you need them the most. Earmarking some of your daily carb calories for around your workouts when you need them for energy, recovery and growth is known as carb targeting.

One of the best places for a high carb plus protein meal is right after intense weight training. If you have enough carbs to work with, you can use the bracketing method and put carbs in your pre workout meal as well. This helps provide fuel and nutrients to improve your performance during and your response after the workout. It can help improve body composition as well, as nutrients are partitioned into muscle for growth and glycogen repletion, instead of into fat stores.

How to outsmart your metabolism with cyclical dieting

Here's the great catch-22 of dieting: If you want to burn fat, you have to reduce your calories. But dropping your calories, especially your carb calories, can decrease your metabolism, increase your appetite and trigger all kinds of adaptations that make it harder to keep getting leaner. And as I've mentioned repeatedly, it's simply tough to follow restrictive diets. The good news is, there's a solution. By adding this one simple new twist to the old low carb diet, you can get all the low carb benefits, while minimizing the side effects.

Typical diets have you cut calories and keep them at the same low level. But what if you didn't stay on low calories all the time? What if you dropped your calories for a short while, then increased them again at regular intervals? Every time you take a higher calorie day, you boost your metabolism, satisfy your hunger and help avoid the starvation response. This is cyclical dieting, also known as non-linear dieting or the zig zag method, and it's an incredibly effective way to improve your body composition, increase compliance, avoid diet monotony and break plateaus.

Many dieters have been advised to use a "cheat day" strategy. Once a week they eat anything and everything for a full day, cheesecake, pizza, doughnuts – anything goes - hoping to get that metabolic boost I spoke of earlier. Although the full cheat day works for some people after an entire week of depletion, I've seen it fail more often than not. The reason it backfires is because "free for all" cheat days too often turn into uncontrolled binge days that erase the hard work that was done the week before. There's a better way.

Carb cycling – secret weapon of bodybuilders and fitness models

The most effective way to do a cyclical diet is with a special variation on the low carb diet known as carb cycling. Carb cycling involves rotating lower carb days and higher carb days instead of keeping carbs low all the time. On the low days, you follow a standard high protein, low carb macro split with a moderate or aggressive calorie deficit. Think of these as the maximum fat burning days. On the high days, you add calories, mostly from starchy carbs, until

you hit maintenance level or slightly higher. High days are also known as “re-feeds.” Think of these as the anabolic rebuilding and replenishing days.

The benefits are numerous. Your metabolic rate gets a boost like you squirted lighter fluid on a dwindling fire. Carbs, more than any other macronutrient, re-stimulate your metabolism regulating hormones like leptin and thyroid. Your depleted glycogen levels are restored, your muscles fill out, your skin gets tighter, you feel a surge of energy and you start getting good pumps in the gym again. The influx of carbs even has an anabolic effect that helps you retain lean body mass far better than a linear low carb diet. On top of all that, you don’t need to fear the carbs being stored as fat because glycogen-depleted muscles soak up carbs like a dry sponge.

The re-feed day also makes your diet easier to stick with. On the lower calorie, lower carb days, you might be hungry and craving carbs, but if you’re carb cycling, you can say to yourself, “I can wait. There’s another high carb day coming soon.”

When to use carb cycling

Carb cycling is usually considered an advanced technique. For beginners, it’s usually best to get established on the basic habits first. If you use re-feeds in the early stages of a fat loss program, the high carb days should be taken less frequently.

Your starting body fat level is also a factor. The higher your body fat, the less necessary it is to re-feed. When your body fat is high, you have less risk of muscle loss or metabolic slowdown. When you’re leaner and have less energy in body fat storage (as toward the end of a diet phase), you’re at greater risk of muscle loss and metabolic adaptation. Re-feed days help prevent those problems.

There are no hard and fast rules on re-feeding frequency except that for fat loss there must be more deficit days than re-feed days or you’ll cut too far into your weekly deficit. A full re-feed day is also considered essential because while a single high carb meal may be psychologically satisfying, it’s not enough to trigger the physiological benefits.

My suggestions: If you’re a beginner or your body fat is on the high side (men 20% and up, women 25% and up), a re-feed is optional, or take one re-feed day every 7 to 14 days as you see fit to help your compliance and restore some mental and physical energy.

For anyone in the lean or better category (men under 12% and women under 18%), re-feed at least once per week. Twice a week is probably ideal for the lean physique athlete or contest prep.

Among followers of ***Burn the Fat, Feed the Muscle***, the most popular carb cycling method for fat loss has been three days low followed by one day high (3:1 carb cycling).

How to set calories for carb cycling

Your low days will be set in a deficit of your choosing, usually somewhere between 15% and 30% below maintenance, as you would normally set it for fat loss. Your high calorie day will initially be set at maintenance calories.

If you think your fat loss is coming too slow, you can create a larger deficit on the low days by taking your carbs even lower. For example, if you started with a 20-25% deficit, you can drop more carb calories until your deficit reaches 30%.

If you lose weight too quickly or if you lose lean body mass, you can decrease your calorie deficit by eating more carbs on the low days. Alternately, you can increase your calories by eating more carbs on your high days.

You could go as high as 15-20% above maintenance on a re-feed day. This can even help you to gain small amounts of muscle as you lose body fat. Gaining muscle and losing fat concurrently is known as body recomposition and it's the best outcome you could ask for. It's difficult to accomplish, but cyclical dieting with surplus days and proper carb targeting around intense progressive resistance workouts is the best way to make it happen.

What kind of carbs to eat when carb cycling

You will eat the same kinds of carbs on your re-feed days as you normally would on this program, you will simply need to eat a lot more of them. Low carb days will emphasize fibrous carbs with lean protein. Because the amount of calories you have to add can be significant, the high carb days will emphasize lean protein plus starchy carbs like oatmeal, potatoes, yams and brown rice.

You can also add starchy carbs like pastas, cereals and breads, ideally the whole grain varieties. These types of carbs are slightly processed so they may have more calorie density and less nutrient density than the completely natural carbs, but a re-feed day is an ideal day to include them, if you choose. You can add fruit as well, although fructose is not known to restore leptin like other carb sources, (which is one of the goals of the re-feed), so that would suggest not carb loading with fruit exclusively.

Dietary fat also has little effect on leptin, so do not add extra fat on the high carb days. Some people even lower the fat intake on high days to allow them more carbs if they're needed.

For some dieters, knowing they can have a carb-rich meal like a plate of pasta once or twice a week makes compliance to the program infinitely easier. Just remember that this is a “controlled re-feed” not an all-you-can-eat cheat day. Cheat meals, aka free meals, can be worked into your program very easily, but the idea with a re-feed is to give your body more of the usual clean fuel. Some programs claim to use a carb cycling or zig zag method, but the truth is, they have fallen right back into the extreme diet trap. In the end, they do little more than alternate between phases of starving and bingeing. I recommend avoiding that approach and keeping more control over your intake.

How many carbs to eat when carb cycling

It's not possible to give one example and have the calorie and carb amounts apply to everyone. What I can do is show you a typical example for an average man with a 2800 calorie per day maintenance level and an average woman with a 2100 calorie per day maintenance level.

On low days, most people follow the phase III diet ratios of 45-50% protein, 25 to 30% carbs and 20-25% fat. On the high days, the macros are usually set around 30-35% protein, 50% carbs and 20-25% fat. Some people eat less protein and fat on the high carb days, but by far the easiest way to set up a carb cycling diet is simply add more carbs on the high day and change nothing else.

For women, it usually works out to about 100-130 grams of carbs on low days and about 200 to 275 grams of carbs on high days. For men it's typically 150-200 grams of carbs on low days and 300-400 grams of carbohydrates on high days.

Carb cycling schedule for an average male			
Low carb day (2000 calories)		High carb day (2800 calories)	
Protein	250 g	Protein	245 g
Carbs	150 g	Carbs	350 g
Fat	44 g	Fat	46 g

Carb cycling schedule for an average female			
Low carb day (1500 calories)		High carb day (2100 calories)	
Protein	168 g	Protein	157 g
Carbs	112 g	Carbs	262 g
Fat	42 g	Fat	46 g

What's the most effective way to carb cycle?

The carb cycling theory is based on sound physiology. However, there are no studies directly confirming what kind of carb cycling diet is best. Almost all the information we have on carb cycling is based on anecdotal reports from the bodybuilding and physique athlete community.

I've seen all kinds of complicated carb cycling schemes including diets with low, medium and high days, with carb amounts based on training volume and with lists of specific carbs that must be eaten at specific times on specific days. A method that has become increasingly popular is to sync your high carb day with your days of heaviest, most intense weight training. There's probably merit to all these variations, especially the last one, but I've always found that the more complex you make it, the more confused you get. I believe that simpler is better.

Here's the big idea to let sink in: On your low carb days, follow a strict calorie deficit, high protein and low carbs (mostly fibrous carbs like salad greens and fibrous vegetables). On the high carb days, eat more by adding in carbs (mostly starchy like rice, oats and potatoes) until you hit maintenance calories. Do this once or twice per week.

You don't have to make it more complicated than that. In fact, enjoy the process! Everyone loves high carb day. It's a welcome relief from the traditional "low carbs all the time" diets, so it's not only more effective, it's easier too.

Conclusion

You've just learned some of the most powerful fat loss techniques in existence. But remember; any diet taken to an extreme can do more harm than good and that includes the low carb diet. In ***Burn the Fat, Feed the Muscle***, there are progressive phases with increasing reductions in carbs and corresponding increases in protein, but nowhere do I recommend the complete removal of carbs. Nowhere do I say carbs are evil or completely off limits. There are advantages to carb restriction. What I don't recommend is carb elimination or carb demonization. Sensible and strategic carb manipulation with increased protein to help along the fat loss process? Absolutely! Zero or close to zero carb diets? No thank you!

Chapter 13: Drink to Burn! Why Water Is the Drink of Champions, How Much You Need, and What Else You Should and Shouldn't Drink

"If you dehydrate your body, it's like dehydrating your plants. Who wants to have a wilted body?"

—Dr. Lawrence Lamb, author of *The Weighting Game*

"Perhaps nothing has contributed more to our weight gain than the clash between our drinking habits and our biology."

—Barry Popkin, professor of global nutrition, University of North Carolina

The most essential nutrient of all: Do you take it for granted?

Fitness enthusiasts looking for an edge tend to focus so much on what's new and sexy in nutrition and training science, it's no wonder that something as simple and ubiquitous as water could be so easily overlooked. But ignoring proper hydration is a costly mistake. If you want a leaner and more muscular body, you need to eat like an athlete and train like an athlete. And if you're going to train like an athlete, you need to hydrate like an athlete.

Dr. Bob Murray, founder of Sports Science Insights, says, "From an athlete's standpoint, or anybody who is physically active, hydration is the number one nutritional intervention for protecting performance and making us feel good during exercise and recovering afterwards. There is no cheaper, easier and more effective way at getting the most out of our bodies and improving performance."

Water is the most abundant compound in your body, making up 60–70% of your weight. Your blood is about 90% water. Your muscles are 70% water. Even your bones are 20% water. Without adequate water, nothing in your body would work properly.

Water is necessary to regulate your body temperature, to transport nutrients, to build tissues, and to remove wastes from cells. Water is required for joint lubrication, brain function, digestion, circulation, respiration, absorption, and excretion. Without water, you would die in days. Sports nutritionist Dr. Michael Colgan says that water is quite simply, "The most important nutrient in the body."

How dehydration affects your energy, strength and physical performance

Did you ever wake up in the morning and feel so groggy it almost felt like a hangover? Maybe you didn't even want to get out of bed. Guess what? You may have been dehydrated. In fact, a hangover - headache, dry mouth, tiredness, and fatigue — is partially caused by the diuretic

effects of alcohol. Do you usually enjoy excellent workouts, but some days, your butt is dragging and you “bonk” at the end — or worse, you can't even get started? Guess what? You were probably dehydrated.

The effects of dehydration creep up on you. By the time you feel the full impact, it's too late, you're already dehydrated. If it's not particularly hot, you might not even link the symptoms to lack of water. You might think you're just over worked, you didn't get enough sleep or you're coming down with something. That's another reason why so many people overlook this important aspect of proper nutrition.

As you become dehydrated, your body's core temperature increases. This adversely affects your cardiovascular function and reduces your capacity for physical work. As it becomes more severe, your risk of heat cramps, heat exhaustion or heat stroke increases.

Even mild dehydration equal to 1% of your body weight can impair exercise thermoregulation. For a 200-pound person, that's only two pounds, which could occur in as little as 30-60 minutes of sweaty training. A study from the *Journal of Strength and Conditioning Research* found that a 1.5% loss of body weight reduced bench press strength by 5.6%. With a 3% loss, muscle strength can decrease by 10%. When you lose 4–5% or more of your bodyweight in water, muscular and aerobic endurance can decrease by 20–30%. If you lose more than 10% of your body's weight as water, you could die.

How much should you drink?

Making general recommendations for water intake has always been challenging because individual needs vary dramatically, especially with exercise and heat stress. Water can be lost in sweat at rates over 3 liters per hour, and total daily fluid requirements have been known to range from as low as 2 liters to 10 liters per day or more.

Among the general public, the most common guideline has always been “drink eight 8-oz glasses of water per day” (8 x 8 or 64 ounces or approximately 2 liters per day). In the bodybuilding world, “drink a gallon a day” (3.8 liters or 128 ounces) is not uncommon advice.

In recent years, there has been a re-evaluation and major debate over water guidelines. Several prominent nephrologists searched through all the research and claimed they could find no evidence to back up the 8 x 8 rule. Before you knew it, fitness writers and bloggers were telling people the opposite: “8 x 8 is a myth! Stop drinking so much water!” (I know, so confusing, right?)

No doubt, the extremely profitable bottled water industry has a vested interest, but this doesn't mean promoting the "drink more water" message is a myth or a conspiracy. Most tap water — at least in the USA — is fine, and you can get it tested and can use a filter if you're worried about the quality. If I were you, I wouldn't be so quick to drop your water intake without closely evaluating your individual needs and considering adequate versus optimal water intake.

First of all, the origin of 8 x 8 seems clear: It corresponds with the original recommendations made by the National Research Council (NRC) to consume at least 1 ml for every calorie expended. That puts 8 x 8 right at the *minimum* recommended level. (What data the NRC drew their conclusions from may have been the pertinent question).

Second, it seemed to me that these experts were mainly reminding us that the water guidelines included *total water*, not just *drinking water*, and to debunk 8 x 8 as a rigid rule. The truth is, 64 ounces of total water each day might be inadequate for many people, especially those who work out. You must customize your own water intake.

How to find your personal customized water intake

A basic principle of *Burn the Fat, Feed the Muscle* is to customize everything and avoid one-size-fits-all mindsets, programs and recommendations. This goes for water intake, just as it does for calories, protein, carbs and other nutrients.

Large people need more water than smaller people, and active individuals need more than those who are inactive. Climate is a huge factor. If you work or train in the heat, your water needs are much higher. If you follow a high protein diet, it's also smart to slide to the higher side of the recommended water intake ranges.

In 2004 the Institute of Medicine in Washington DC convened to set new Dietary Reference Intakes (DRIs) for water. The recommendations were based on experimental and observational human research. Although they made it clear that water needs can vary dramatically and this number was only a median, *they concluded that a daily total water intake of 3.7 liters for adult men and 2.7 liters for adult women covers the majority of individuals.*

Institute of Medicine Guidelines for Water (Dietary Reference Intake/DRI)

Men	Women
3.7 liters (125 ounces) per day	2.7 liters (91 ounces) per day

For years, the NRC's guideline for water was 1.0 — 1.5 ml per kilocalorie expended per day. The new DRI is easier to remember because it's only one number. However, you could argue that recommending water intake within a range adds a nice customization factor for activity levels

and body size. It's also helpful because if your circumstances call for more water, such as increased training volume, high protein diet or heat, you can increase your intake toward the higher end of the range.

National Research Council Guidelines For Water Intake

Calories Expended	Water Required (oz)	Water Required (L)
2000	67 - 101 ounces	2.0 to 3.0 liters
2500	84 - 126 ounces	2.5 to 3.75 liters
3000	101 - 152 ounces	3.0 to 4.5 liters
3500	118 - 177 ounces	3.5 to 5.25 liters
4000	135 - 202 ounces	4.0 to 6.0 liters

Note: One gallon = 128 ounces or 3.8 liters.

Should you count the liquids from foods and beverages toward your water intake?

The recommendations from both the NRC and the Institute of Medicine are based on total water, so all fluids do count. You get water from three sources: drinking water, other beverages and moisture in food. The sum of all three makes up your total daily water intake.

Almost all the foods you eat contain water. Fruits and vegetables are 75–90% water. Even meat is at least 50% water. Milk, coffee, tea and sports drinks are mostly water. Caffeine has a mild diuretic effect, but not enough to cancel out the hydration provided from caffeinated liquids. (Don't use them for re-hydration, however.)

It's fairly difficult to quantify the exact amount of water you're getting from food, so I wouldn't bother trying to figure that part out. In general, the average person gets about 20% of their water intake from food, provided they eat fruits and vegetables every day.

It's not uncommon for bodybuilders to use the *total water* guidelines above as their daily target for *drinking water*. That's what I do. My calorie expenditure is about 3200 per day, so that's at least 3.2 liters or usually closer to a gallon (3.8 liters) —well over 8 x 8. I drink that amount in pure water every day.

Keep in mind that doing it this way puts you on the high side when you add water from all sources, *but it doesn't hurt*. It offers an extra margin of assurance that your water intake is more than adequate and perhaps, is closer to optimum. Personally, I consistently feel better, train harder and have more energy when my water intake errs a little on the high side rather than the low side. I've heard this sentiment echoed throughout the entire fitness industry for decades.

Can drinking more water increase fat loss?

It's clear that dehydration decreases your performance and becomes dangerous as it progresses. It's also clear that with all nutrients, there's a difference between deficiency and adequacy. Could there also be an optimal level for water, above adequate, that improves your fat loss? We don't know for sure because there's a lack of strong evidence from long-term randomized controlled trials. However, drinking water can help your fat loss efforts in many ways, and some of them can make a huge difference.

The most controversial theory is water-induced thermogenesis. The German Institute of Nutrition conducted two experiments with adult subjects. In both cases, drinking cold water increased metabolic rate by 24–30% for 30–60 minutes. A more recent Israeli study published in the *International Journal of Obesity* reported similar results in children—a 25% increase in resting energy expenditure lasting for over 40 minutes. Some people speculate that when the water is cold (3–4 degrees Celsius), your body must heat it up, and that burns calories. Other scientists say the mechanism has to do with sympathetic nervous system stimulation or improved cellular metabolism from increased cell hydration.

The big question is whether this short-term boost in metabolism continues and adds up to significant body fat loss over time. At this point, it's purely speculation. If it does help, it's a small effect. The Israeli scientists said that simply following the standard water drinking guidelines could theoretically add an additional weight loss of about 1.2 kilograms (2.6 pounds) per year. The most optimistic projection is about 5 pounds in a year. Not much either way, but considering how easy it is to do, my guess is that you'll take every extra bit of fat loss you can get.

Drinking water before or during a meal may also help. Water may not be a true appetite suppressant (in the hormonal sense), but water can increase stomach fullness and reduce calorie intake at a meal. In a 2008 study from Virginia Tech, subjects were given 500 ml of water about 30 minutes before breakfast. Calorie intake decreased by 13%. In a 2010 follow-up study, 500 ml was consumed before every main meal, and weight loss was 2 kilograms (4.4 pounds) greater over a 12-week period.

What about the long-term effects of water drinking on fat loss? There's not much research, but one year-long study was conducted at the Oakland Hospital Research Institute. Increases in drinking water were strongly associated with significant fat loss and loss of body weight in overweight subjects. An obvious reason was because they swapped out calorie-containing drinks for water. Even after the researchers accounted for this, the water drinkers still showed additional increases in weight loss—about 5 pounds in 12 months.

A lot less controversial (this one's a sure thing), is the replacement strategy. Cutting something out cold turkey sometimes creates a void that begs to be filled. So think in terms of replacement, rather than removal. Every time you get the urge to reach for a soda or another caloric drink, tell yourself, "I'll just have water instead." Within a few weeks, you'll have a positive new habit installed. Researchers estimate that the average person will save at least 200 calories per day with this one simple swap. On paper, that's 20.8 pounds of fat gone in one year. If you've been drinking sugar-sweetened beverages every day, this could easily be the best bang-for-your-buck fat loss tactic in the entire book.

As you can see, there's plenty of evidence showing a variety of ways that water is your friend for fat loss as well as for health, energy and performance. Many researchers also believe that drinking water is tied strongly to other healthy habits. It's as if healthy habits come in clusters: drink more water, and you automatically start doing other healthy stuff.

Many people defiantly thumb their noses at increasing their water intake, complaining that it's too much trouble or that drinking only when you're thirsty is supposed to be good enough. But if you're serious about sports or fitness, is it really?

Thirst: Is it a good signal for hydration or not?

Your body has an exquisite homeostatic thirst mechanism that has proven perfectly adequate for guiding most people to *re-hydrate and restore* water balance on a day to day basis. The problem is that thirst may not a good indicator for *maintaining* hydration, especially for athletes. By the time your body registers the sensation of thirst, you may already be under-hydrated. This becomes even truer as you get older and the thirst mechanism doesn't work as well as it used to.

Also keep in mind that most people don't drink purely based on thirst, they drink in response to other stimuli such as meal times, walking past a fountain or during social events when drinks are offered. Instead of waiting until you're parched or otherwise prompted, the more proactive strategy for optimal hydration is to drink water throughout the day, before training and during training, even when you're not thirsty.

In addition to thirst, urine color and body weight are two other practical ways to monitor your hydration level. When you check your urine, it should be clear to straw-colored and odorless. If it's a deep or dark color with a strong odor, you're dehydrated. (Note: some vitamin supplements and medications can darken urine color.) If you sweat heavily during exercise, check your weight before and after each workout. Any weight lost during an exercise bout should be replaced with water.

Water intake: Need vs. optimal

Many experts outside of the athletic and physique communities operate from the paradigm of deficiency prevention. They're mostly concerned with finding the minimum or adequate amounts needed for maintaining health or avoiding illness in average or sedentary people.

It's true that our bodies are very resilient and can survive for extended periods on intakes of food and water that are far below optimal levels, and for short periods, even on dangerously low levels, from which we can then fully recover.

It's reassuring to know that missing a day of food or water is not going to kill us, but serious physique athletes and fitness enthusiasts should not be looking to simply survive, but to excel. Instead of finding how little you can drink before your performance and results start to suffer, why not experiment, search for what's optimal and see if your performance and results go even higher?

A report recently published by the World Health Organization said, "While current knowledge allows us to determine insufficient and adequate fluid intake, our scientific knowledge base is inadequate to determine if there is an optimal fluid intake. However, there's a growing body of science indicating that an optimal intake level may indeed exist, and that such an amount is greater than the current recommendations."

Can you drink too much water?

Science and health organizations have not set a tolerable upper intake level (UL), probably because water intoxication is so rare. You see it mostly in athletes after long endurance events (especially females), who replace heavy sweat losses with copious amounts of plain water without the needed electrolytes. This leads to hyponatremia, a low concentration of sodium in the blood, which can lead to swelling of the brain, possibly fatal. Hyponatremia is very rare outside the endurance sports world, but one interesting case was reported after a water drinking contest sponsored by a radio station in California ("Hold your wee to win a Wii").

Bodybuilders and other competitive athletes have been known to take their training and nutrition not only seriously, but to extremes. They also tend to be perfectionists, not satisfied until they squeeze every last percentage toward 100% on their nutritional scorecard. That's admirable, but sometimes leads to a "more is better" mentality. More of a good thing is not always better. "Drink as much as you can tolerate" is not good advice, even though that advice has been given by sports nutrition organizations in the past.

Don't forget the practical considerations as well. If you buy bottled water, there's extra expense, plus an impact on the environment (from production, transportation and disposal), and if you drink so much that you need to be a few steps from a bathroom 24-7, you're probably overdoing it.

A simple water drinking schedule for people who want the optimal “burn”

You can drink water any time you want, but there are a several times when drinking can be especially helpful. Following a regular schedule also helps turns the behavior over to subconscious control (habit), making it a no brainer, something you don't have to think about.

First, drink immediately when you wake up in the morning because you haven't had fluids all night. Suggestion: Keep a glass of water by your bedside so it's waiting for you when you wake up. As I mentioned earlier, pre-breakfast water intake may help with your daily calorie control efforts and it will also set a good, healthy tone for the day.

Second, drink before your workouts. Shoot for about 500 ml (16 ounces) anywhere from two hours to 20 minutes prior to training (with or apart from a meal).

Third, drink during your workouts. Most sports nutritionists recommend about 200–250 ml every 15 minutes. Water is the best drink for strength and general fitness workouts of about an hour or less. Sophisticated strength and physique athletes sometimes experiment with amino acid mixtures during the workout, but that's not mandatory and the benefits are not conclusive. If you're an athlete with endurance training bouts longer than one hour, be absolutely certain to consult your coach or a sports nutritionist for advice not only for water, but for carbohydrate and electrolyte replacement.

Fourth, drink after your workout. The goal is to begin re-hydrating immediately after the workout and replace any water weight losses before the next session. A half a liter (500 ml) of water represents about one pound of body weight lost.

Fifth, drink when it's hot and you're sweating, even if it's not during a formal workout.

On your non-training days, you don't need as much water, but remember to drink up in the morning and keep drinking throughout the day, as you won't be prompted by your training session. Mealtime is a great cue: two of the easiest fat loss strategies are drinking water before meals and drinking water during meals (in place of caloric drinks).

The dark side of liquid calories

Caloric drinks are keeping a lot of people fat. In the United States, the primary source is sugar-sweetened beverages, with cola and other soft drinks leading the way. Now running a close second are specialty and dessert coffees. A 16 ounce Dunkin Donuts Mocha Almond Latte has 460 calories. A Starbucks Frappuccino can cost you 500 calories or more! That's one-third of a typical female's daily calorie intake on a fat loss program.

Energy drinks high in sugar and caffeine round out the top three, and I'm sure you know someone who practically lives on those things. Whereas a 12 ounce can of soda usually runs you 140–160 calories, many of the popular energy drinks come in 16-, 20- or 23-ounce sizes and clock in at 220–345 calories.

Many people think that fruit juice is an improvement over soda, but whole fruit is better. Whole fruit gives you fiber, contains fewer calories and satisfies your appetite more. Unless you're an athlete with very long workouts or events, skip the sports drinks too—they're sugar water with electrolytes, not fat loss food. Regardless of whether it's "natural" or not, liquid sugar of all kinds makes calorie control a lot more difficult.

Sugar-sweetened beverages have a high caloric density, and since they require no chewing, they can be consumed more quickly than solid food. They also have a low satiety value. Scientists recently confirmed that compared to whole foods, liquid calories produce a smaller increase in GLP-1, a hormone that makes you feel fuller, and a smaller decrease in ghrelin, a hormone that makes you feel hungry.

At no time in our history have we had access to large amounts of liquid calories. Alcohol may have been around as far back as five thousand years BC, but even that is a blip on the evolutionary calendar of humanity. What did our ancestors drink? As infants, breast milk. As adults, water. As a result, our genetic code has never developed the physiological mechanisms to properly register the calories in liquids the way it does when you eat whole foods.

If you counted the calories meticulously and made sure you hit your calorie target for the day, there would be little or no difference in weight loss regardless of whether you ate your calories or drank them. The trouble is, there's convincing evidence that most people are terrible at tracking their calorie intake. Hunger gets the best of them and they drink calories in addition to their usual food intake, not instead of it.

Bottom line: If you're trying to beat body fat, your best strategy is to cut out all sugar-sweetened beverages.

What about diet soda and other non-caloric drinks?

Diet soda, diet tea, Crystal Light, flavored waters and other diet drinks are artificially sweetened, so they contain little or no calories. Artificial sweeteners, however, have been burned at the stake in the court of public opinion, especially Aspartame (brand name Equal). Sucralose (brand name Splenda) doesn't generate nearly as many complaints, but artificial sweeteners have become controversial and unpopular in general.

Let me first point out the obvious: Diet soft drinks contain absolutely nothing healthy. But does that mean they're toxic? A basic premise of toxicology is that it's the dose that makes the poison. There's little reason to believe that light or infrequent use of diet drinks is harmful. If you drink them by the six-pack every day, well, who knows, but I'm not recommending that.

Second question: Can diet drinks cause weight gain? As paradoxical as it sounds, some people believe they do. Here's a little brainteaser for them: If you survey overweight people about their beverages of choice, you'll discover that as a group they drink a lot of diet soda. Is it more likely that the calorie-free soda *caused* them to gain weight or that they started drinking the diet soda because they were trying to lose the weight they'd already gained? It doesn't take a Field's medal winner to solve that puzzle, yet the idea of "diet soda makes you fat" takes the prize for confusing correlation with causation.

Rest assured that diet drinks by themselves do not cause weight gain. If a drink doesn't have calories and it doesn't stimulate appetite or trigger excess food intake, it can't make you fat. It is possible however, that diet drinks might sharpen your sweet tooth just like sugary foods and drinks. They also could create a false sense of security and entitlement to eat something else because of the calories you saved from the drink. You need to remember that using drinks with no calories isn't a free pass to eat extra calories elsewhere or pay no attention to your deficit.

All things considered, I recommend drinking mostly water and keeping artificial anything to a minimum. If you want an occasional diet drink, go ahead and have it, just like you might have an occasional glass of wine or an occasional cheat meal. You'll never find diet soda stockpiled in my refrigerator, but a diet cherry cola once in a while sure takes the edge off a strict diet and I've never seen a shred of hard evidence that diet drinks slow down fat loss *if all else remains equal*.

Coffee and tea

If you read the health headlines, it seems like one year they say coffee is bad for you, the next it's good, and the year after that it's bad again. Drives you crazy doesn't it? Many nutritionists

and trainers suggest avoiding caffeinated beverages, and there seems to be a negative vibe about caffeine in the health and fitness world in general. Ironically, caffeine increases thermogenesis and lipolysis, plus many people find it helps as a pre-workout stimulant or ergogenic aid. Coffee also provides antioxidants and some research shows it may even lower risk of type II diabetes.

However, caffeine is not entirely benign. It can elevate heart rate and blood pressure. Large doses may acutely affect blood sugar and insulin, and it may disrupt sleep if used late in the day. Some people are more sensitive to its effects than others, but condemning coffee without discussing dose and context is silly. The problem is not coffee, it's the abuse of caffeine or other stimulants. Truth be told, I love my Starbucks. The difference between me and the folks who don't have abs is I drink coffee black, with only a splash of skim milk and maybe a no-calorie sweetener. They drink mochas and Frappuccinos.

That's the other problem: The calories you put in your coffee that contribute to an energy surplus or chip away at your deficit. Even a little cream and sugar in your coffee adds up if you drink a lot, and these are the kind of calories that most people forget to count. If you don't chug your Joe by the pot or with a lot of added calories, there's no reason to believe it will harm your health or your fat loss efforts. It might even help.

Unsweetened tea is another great beverage for fat loss programs. But take heed: the sugar-sweetened tea drinks are not. One popular brand of bottled green tea made the Men's Health list of the 20 worst drinks in America, with 240 calories and 61 grams of sugar in one 20 ounce serving.

Arguments about which tea is best for weight loss are common, but those discussions are mostly moot because even teas that really are thermogenic have a very small effect. Natural green tea contains epigallocatechin gallate (EGCG) which is a proven thermogenic. Studies from Switzerland showed that 300 mg of EGCG increases metabolism by about 80 calories or so per day. Researchers still aren't sure how much that adds to actual fat loss over time, but it does increase energy expenditure in the short term.

Arguments about which tea is healthiest also abound, as many varieties contain bioactive compounds such as polyphenols, carotenoids and flavonoids. If there are no calories, I suggest you simply drink whatever type of tea you enjoy. My favorites are the antioxidant-rich green tea and Captain Picard's choice: Earl Grey. Hot.

Will alcohol make you fat?

An occasional glass of wine or a couple of beers will probably do no harm to your health or waistline, provided you budget for the calories. Red wine has even been associated with some health benefits such as increasing HDL, the good type of cholesterol. Excessive alcohol, on the other hand, can very easily derail your performance and halt your fat loss for a variety of reasons.

Your body has no storage capacity for alcohol like it does for carbs and fats. Alcohol must be detoxified as quickly as possible (which is why some people consider it a poison). As a result, the oxidation of the alcohol takes priority over other macronutrients. In other words, while your liver is busy metabolizing those beers you drank, the use of fat for fuel is almost entirely suppressed.

Alcohol: The high calorie density and low nutrient density problem

Because alcohol is metabolized by your liver, it's not converted directly into body fat. But that doesn't mean that alcohol can't make you fatter. At 7 calories per gram, alcohol is the second densest source of calories behind dietary fats, which contain 9 calories per gram. Therefore, alcohol gives you a lot of calories above and beyond the food you normally consume.

Alcoholic drinks deliver calories but little or no nutritional value. They may contain trace amounts of vitamins and minerals, and certain alcoholic beverages like red wine do contain some healthy compounds like polyphenols. But considering that you can get a huge variety of antioxidants and micronutrients from fruits and vegetables, it's foolish to recommend beer or wine purely as a source of nutrition. If you don't drink, there's no nutritional reason to start.

If the empty calories aren't bad enough, alcohol depletes your body of vitamins and minerals. Alcohol irritates the lining of your stomach and intestinal tract and interferes with proper digestion and absorption of vital nutrients. When the liver metabolizes alcohol, it uses up the B vitamins niacin and thiamin. Alcohol can also impair your body's ability to metabolize zinc.

What alcohol does to your health

Excessive alcohol use is linked to numerous health problems including heart disease, high blood pressure, stroke, cardiomyopathy, abnormal heart rhythms, liver disease, cancer, decreased resistance to infections, gout, and hypoglycemia. And don't forget alcoholism and all the troubles that come along with that addiction.

Although alcohol is a liquid, it's also a potent diuretic. It draws water out of the cells and increases the loss of water through the kidneys. The increased fluid output can cause the loss of water-soluble minerals and all of the other negative effects of dehydration.

Heavy drinking suppresses testosterone, one of the main anabolic (muscle-building) hormones, and alcohol is like other liquid calories—you don't compensate properly for the extra calories. Goodbye abs, hello "beer belly." Basically, booze can ruin your health, make you fat and rob you of muscle if the drinking gets out of control.

5 tips for drinking sensibly without compromising your results

There are plenty of "food cops" who will tell you to never let a drop of alcohol cross your lips, but I believe that if you're a wine or beer lover, it's better to go ahead and enjoy your drink if you can do it moderately and sensibly. I also believe that for long term success, it's important that you're happy and that your nutrition program is socially acceptable. Here's the best way to approach it:

1. Redefine moderation.

Moderation is a fuzzy word in nutrition circles, but in the case of alcohol, it's usually defined as one drink for women and two drinks for men. If you did that daily, that could be up to 14 drinks per week. That's not moderation in my book. I strongly urge you to avoid daily drinking (or daily junk food eating for that matter), because behaviors repeated daily become habits. Habits are hard to break and habitual drinking can escalate. Save the drinks for weekends, or even less frequently—only for holidays and special occasions (you might even enjoy it more that way).

Binge drinking has absolutely no place in a fitness lifestyle (not to mention hangovers aren't very conducive to good workouts). If you drink frequently or in large quantities, don't complain about your fat loss plateau, and at least look in the mirror and admit the truth to yourself: "I'm not that serious about getting in shape. It's not a high priority right now. I don't want it that bad." At least then you're being honest with yourself.

2. Always count the calories and stay within your deficit.

In the final analysis, weight loss always comes down to calories in versus calories out. If you count your alcohol calories and stay within your daily limits, you'll still lose weight. The problem is, most people forget to add up the calories in all their drinks, and alcohol can increase your appetite. Men in particular are not good at compensating—they tend to eat in addition to drinking while women usually drink instead of eating. Alcohol can also lower your inhibitions

and the more you drink, the easier it is to say, “To heck with this diet!” The next thing you know, your two drinks turned into six and you topped it off with midnight pizza.

I’m often asked, “What’s the best alcoholic drink when you’re dieting? Best answer? None. Second best answer: the drink with the least calories. That would be light beer, red wine, dry white wine or low calorie spirits. Mixed drinks with high calorie additives such as milk, juice, sugar, or tropical drink mixes can completely undermine your fat loss goals. A light beer contains about 95 calories. An 8-ounce margarita packs about 500 calories. And if you like pina colada, you’d better like hours of cardio, because a big one can cost you up to 640 calories. Two of those isn’t moderation, it’s diet sabotage.

3. Get to bed early and don’t compromise your sleep.

Drinking and late nights often go together. Partying until the wee hours of the morning can mean abnormal sleeping patterns, less sleep and a lower sleep quality. Your body needs its rest and thrives on structure and schedule. Disrupted sleeping patterns often mean missed meals, poor workouts and poor recovery.

Scientists have discovered that inadequate sleep can mess up the hormones that regulate appetite, metabolism and the anabolic/catabolic balance in your body. Sleep deprivation can increase the hunger hormone ghrelin, decrease leptin, increase cortisol and decrease insulin sensitivity.

If that’s not enough, how about losing your hard-earned muscle while dieting? A Dutch study found that sleep curtailment (5.5 hours versus 8.5 hours) decreased the proportion of weight lost as fat by 55%. This was accompanied by increases in hunger, neuro-endocrine adaptations to calorie restriction and reduced fat oxidation.

4. Be strong in the face of peer pressure and choose friends wisely

If peer pressure is a problem, get tough and re-affirm your commitment to your goal. Decide in advance that you won’t give in. If social temptation is a major problem, reconsider who you’ve chosen as friends. Ninety-five percent of the world doesn’t care that you’re working on self-improvement. In fact, some people may resent it if you improve and they don’t. It’s easier for a mediocre person to reach up and try to pull you down, rather than climb up and improve themselves.

I wouldn’t bother trying to explain to all your friends the reason you’re cutting back on booze. People who aren’t on the same path usually won’t support you if you tell them you’re “on a diet” or “in training.” It might make you a bigger target. Say, “No thanks” and nothing else, or you can

make a game out of it and invent a good excuse. “I have an ulcer” (or insert favorite stomach problem) works nicely. Or, “I have a genetic liver disorder. I really wish I could drink with you guys but I just can’t take any chances.” Instead of being in a tense peer pressure situation, you could actually have fun with it. “I’m the designated driver” is always a good way out that your friends may actually appreciate.

5. When fat loss is your goal, consider not drinking at all

If your goal is fat loss, you must stay in a calorie deficit, so you don’t have many calories to work with (females especially). This means that to include alcoholic drinks, which are calorie dense and nutrient sparse, you have to displace other foods that are packed with nutrients and more filling. Even if you know you can fit in a drink or two and stay within your deficit, you may want to ask yourself if those calories are worth it. If you’re stuck on a progress plateau, the answer should be obvious.

Conclusion

The next time you happen to be in a bar (hopefully it’s not very often), take a good look around. You won’t find many successful fitness or bodybuilding champions hanging out there at 1:00 or 2:00 a.m. And the next time you go to the gym, check out the bodybuilders and fitness models. You’ll notice that they all lug around a bottle of water or even a gallon jug—all the time. Then take a look at how lean and muscular they are. Coincidence? Or do they know something that you don’t? Drink up! Your H2O, that is!

Chapter 14: The BFFM Eating Plan: How to Create Your Own Customized and Effective Fat-Burning Meals and Meal Plans

“Have a plan. Follow the plan, and you’ll be surprised how successful you can be. Most people don’t have a plan. That’s why it’s easy to beat most folks.”

—Paul “Bear” Bryant, University of Alabama football coach

“Lack of planning is the cause of all failure.”

—Brian Tracy, author of *Maximum Achievement*

Putting it all together: From foods to meals to meal plans

This is where we put all the nutrition theory together into a practical, actionable plan that you can follow on a daily basis. In this chapter, you’ll learn exactly which foods are best for burning fat and which ones are the worst. You’ll discover a simple formula for combining individual foods into fat-burning meals and you’ll see how to turn individual meals into a daily meal plan. You’ll find out why generic meal plans don’t work and customized meal plans do. Most important of all, you’ll understand why you must plan your day in advance and why “winging it” is the worst mistake you could ever make.

The simple cure for every diet failure

Having been in the health club and fitness industries my entire life, I must have heard every reason in the book for why people eat poorly or fall off the wagon. This is just a small sample:

“I was traveling.”

“I didn’t have anything else with me.”

“I had to eat airline food.”

“The only place to eat was McDonald’s.”

“It would have been rude to turn down the food because I was a dinner guest.”

“It was the only thing on the menu.”

“I couldn’t help myself—I had a major craving.”

“I was starving—I had to eat something.”

The fact is, there are no good reasons for poor eating, only excuses, because proper planning and prior preparation solve almost every diet problem. A meal plan is like your eating goal for the day. Without goals, you wander aimlessly or float wherever the current of life takes you, which for most people, is right to the nearest burger joint.

Without planning, you're leaving yourself at the mercy of impulse and circumstance. Even worse, eating haphazardly makes it almost impossible to establish a baseline so you can't troubleshoot your progress every week. As simple as it may seem, a written meal plan is one of the most powerful fat burning strategies you can use.

What to do when the best-laid plans go astray

Life isn't always predictable and sometimes things happen that interfere with even the best of plans. But don't let unexpected events become another excuse. Even this problem has a solution—plan B—the plan for when you can't follow your plan. What's plan B?

First, remind yourself that there's no reason to get upset or frustrated just because you miss a meal or can't have an ideal meal. Most people beat themselves up mentally and emotionally after a single slip-up (perfectionist thinking). Even worse, some people equate a single mistake with absolute failure, as if one bad meal ruins an entire day or one bad day ruins an entire month (all or nothing thinking). One meal doesn't make or break you. Your habits make or break you. It's what you do every day, over and over, week after week that matters the most.

Second, remind yourself that you *always* have choices. Then, make the best choice possible in every situation. Even at a fast food restaurant, you have choices. You can have a grilled chicken and water instead of the double bacon cheeseburger and soda. Even when only one type of food is being served, you *still* have a choice! You can choose *how much* food you eat. The calorie *quality* might be poor, but if you choose a smaller serving and get the calorie *quantity* right, at least you're obeying the law of energy balance.

A simple system for choosing your foods and knowing you made the right choice

Meal plans start on the individual food level. But it gets confusing sometimes to know what to eat every day. It doesn't help that the diet gurus and news media are constantly blessing or condemning various foods for all kinds of incomprehensible reasons. In reality, food quality doesn't fall neatly into two categories, good or bad. Although some foods may deserve their bad reputations, whether a food is good or bad really depends on dose and context. Food quality also runs in degrees—like temperature or color. At what temperature does hot become cold? These are simply two ends of a spectrum.

An easy way to make better decisions is to give your food a grade. Food quality can range from calorie dense, highly processed food with poor nutritional value on the low end (an F grade) to all-natural, nutrient dense food on the high end (an A grade). The more a food is processed and the more calorie dense a processed food is, the lower the grade.

You don't have to get straight A's to pass. As long as you choose mostly A and B foods, you'll have a very healthy and effective meal plan. There are, however, some danger foods that you're best to avoid most of the time.

Are certain foods more fattening than others?

You could argue that foods aren't fattening, excess calories are. But aside from the fact that eating a lot of junk food is unhealthy, you're far more likely to overeat some foods than others. That's because some foods have more calories per unit of volume than others.

Certain foods are also more palatable. Did you ever notice how some snack foods make it almost impossible to eat just one? How easily does ice cream go down? (If it weren't for the "brain freeze," most people would probably scarf it down even faster.)

So if we're talking about calorie density or ease of consumption, then fattening foods definitely exist. As you'll see later in this chapter, occasional cheat meals are not only allowed, they are recommended; but ideally, the most fattening foods should stay off your regular daily meal plan.

Avoid meals with fat-storing food combinations

Certain food *combinations* are doubly disastrous when you're trying to get leaner. Fat and sugar is one of the worst combos. Common examples include peanut butter cups, milkshakes and cheesecake. Starchy carbs plus fat is another dangerous combo. A prime example is white pasta with a cheesy, creamy or buttery sauce (think fettucine alfredo). A typical restaurant serving is about 1200 calories. Cheese fries are notorious in this category: potatoes (starchy carb) fried in oil (fat), topped with cheese (more fat) rocket the calories to a stratospheric level.

Even healthy foods can become calorie bombs, depending on what you put on them. Salads can be a great starter or even a complete meal, but when they're topped with full fat cheeses, croutons, bacon bits and high fat dressings, they can pack a caloric wallop. Dry baked potatoes are a good natural starchy carb choice, but when loaded with bacon bits, cheese or sour cream, the calories can easily double.

Unrestrained eating of fat-storing foods, especially if combined with caloric drinks, can stuff you with thousands of calories in an evening. Have you ever heard about the math equation for a weekend binge? It's $5 - 2 = 0$. That's five days of perfect eating minus two nights at the bars and restaurants on Friday and Saturday equals zero results for the entire week. Back to square one on Monday.

The 12 worst fat-storing foods you should never eat as part of your daily meal plans

One of the best ways I can help you create your daily meal plans is to first show you which foods not to include. If you know what to avoid, then through a process of elimination, your odds of choosing the most nutritious foods are automatically higher.

No foods or food groups are completely forbidden in this program. However, some foods should not be a part of your regular daily meal plan if you want the maximum possible results.

The dirty dozen: 12 fat-storing foods to avoid

- X French fries and deep fried foods
- X Ice cream and milkshakes
- X Doughnuts, pastries and cookies
- X Candy and confections
- X Soda and sugar-sweetened soft drinks
- X Energy drinks, sweetened teas and dessert coffees
- X White bread, white flour and refined grain products
- X Potato chips, corn chips or fried tortilla chips
- X Bacon, sausage and other high fat processed meats
- X Fast food meats: Hot dogs, wings, ribs and burgers
- X Pizza with thick crusts, heavy cheese and meat toppings
- X Sugar-sweetened breakfast cereals

Ok, so that was more than 12 foods, but it is 12 *categories* of fat-storing foods. Stay away from them unless it's a planned cheat meal and your eyes are open to the calorie amounts and how eating them will affect your results for the day and week.

If you're in tears right now because I just took away all of your favorite foods, and you're wondering, "What the heck does that leave me?" Don't worry. You're about to learn exactly what "premium fuel" to put in place of your old "low grade" fuel.

Simple swaps for a lighter, leaner meal plan

Once again, we're using the replacement strategy. Instead of taking things away from you and leaving a void, it's out with the old and in with the new. Some of the better choices listed below are not A grade foods, but they're all *improvements* over the old choices. These swaps save you calories, give you more nutrition, or both.

<u>Old Choice</u>	<u>Better Choice</u>
Whole milk	Non-fat, 1% low-fat or 2% low-fat milk
White bread	100% whole wheat or 100% whole grain bread
Ice cream	Low-fat or non-fat sugar free frozen yogurt, fruit sorbet
Tuna in oil	Tuna packed in water
Buttered popcorn	Light microwave or air-popped popcorn
Regular crackers	100% whole grain crackers, rice cakes
Corn chips, potato chips	Baked tortilla chips
Dip	Salsa or fat-free ranch dressing
Doughnuts	Sugar-free whole grain muffins, bagels, English muffins
Cheese	Low-fat or non-fat cheese
Canned fruit in syrup	Canned fruit in its own juice
Sugar and sweets	Fresh whole fruit
Fried chicken	Broiled, grilled or baked skinless chicken breast
Jelly or jam	All fruit (sugar-free) jelly
Fruit drinks	Real fruit smoothie or protein shake with fruit
Regular soda	Diet soda, diet drinks (even better: water)
Prime rib	Round steak (top, eye of, bottom) lean sirloin (top or tip)
Butter	Low calorie butter spreads (trans-fat free)
Supermarket oils	Cooking spray, extra virgin olive oil
Cream cheese	Low or non-fat cream cheese
Mayonnaise	Low or non-fat mayonnaise
French fries	Baked potato, oven-baked potato or sweet potato fries
Sugary cereals	Shredded Wheat, or 100% whole grain, low sugar cereal
Flavored, sweetened oatmeal	Old-fashioned rolled or steel-cut oats
Ham, cold cuts	Turkey breast or chicken breast
Bacon, sausage, hot dogs	Very lean ham, turkey bacon
Fried chicken	Broiled, baked, or grilled skinless chicken breast
Popsicles	Frozen juice bars, frozen yogurt bars, sugar-free popsicles

The best metabolism-boosting, appetite-suppressing, naturally satisfying foods

Now that you know what you *shouldn't* eat, let's talk about what you *should* eat. Like "fattening foods," the term, "fat burning foods" is a bit of a misnomer because all foods add calories. Some foods like hot peppers have thermogenic properties, but the effect is very small. Some foods have a very low energy density, but there's no such thing as negative-calorie foods that require more calories to digest than they contain. Clearly, however, certain foods are better for fat loss than others for a variety of reasons.

Lean protein foods have the highest thermic effect and suppress your appetite better than any other macronutrient. This is one of the many reasons to include a lean protein with every meal. Fibrous vegetables are great choices because they're high in fiber, high in water content and low in calories. The most fat-loss-friendly meal of all is lean protein plus fibrous carbs.

Whole fruits and natural, high-fiber starchy carbs are also good choices if you keep the quantities small enough to maintain your calorie deficit. Starchy carbs include yams, potatoes, legumes, beans, brown rice, oatmeal and 100% whole grains.

The terrific 12: A dozen fat burning foods to eat every day

This recommended food list might be the most valuable resource in the book. Thousands of readers have told me that simply by picking more foods from the top 12 list and avoiding foods from the dirty dozen list, they got off to a roaring good start. They fine-tuned the details along the way.

The amount of starchy carbs and natural grains you need can vary quite a bit from person to person, and variety is important to satisfy personal tastes, but overall, these staple foods make up the foundation of the program for most people most of the time.

- ✓ Oatmeal (and other sugar-free, whole grain hot cereals)
- ✓ Yams (or sweet potatoes)
- ✓ Potatoes (white or red)
- ✓ Brown rice
- ✓ 100% whole wheat or other unrefined whole grains (quinoa, spelt, millet, etc.)
- ✓ Vegetables
- ✓ Fresh whole fruit
- ✓ Low-fat or non-fat dairy products
- ✓ Chicken breast or turkey breast
- ✓ Eggs or egg whites
- ✓ Lean cuts of red meat
- ✓ Fish and shellfish

The six exchange groups and Burn the Fat foods list

Burn the Fat, Feed the Muscle (BFFM) is more precise with the food groups than most conventional diet programs. We subdivide carbs into starchy, fibrous and simple. Proteins are narrowed down into lean proteins, because we usually don't want the extra fat calories (with an

occasional exception like salmon or a whole egg). Dairy products are narrowed down to non-fat or low-fat (to save calories), and fats have a category by themselves.

Group 1: Fibrous Complex Carbs: (Vegetables & Greens)			
Asparagus	Broccoli	Brussels sprouts	Cauliflower
Collard greens	Cucumber	Green beans	Celery
Lettuce / salad greens	Mushrooms	Spinach	Pepper (green or red)
Tomatoes	Onions	Squash	Zucchini

Group 2: Natural Simple Carbs (Fruit)			
Apples	Applesauce (natural)	Blueberries	Raspberries
Strawberries	Oranges	Bananas	Plums
Peaches	Grapes	Grapefruits	Melon/cantaloupe
Pears	Pineapple	Watermelon	Mango

Group 3: Starchy Complex Carbs			
Oatmeal, rolled	Oatmeal, steel cut	Sweet potatoes (yams)	Potatoes (red or white)
Lentils	Legumes	Brown rice	Quinoa
Beans (all kinds)	Barley	Spelt	Chickpeas
Whole grain cereal	Whole grain bread	Whole grain pasta	Whole grain tortilla

Group 4: Lean Proteins			
Chicken breast	Lean red meat	Lean game meats	Fish
Shellfish	Eggs	Lean pork	Protein powder

Group 5: Non-fat or Low-Fat Dairy Products			
Milk	Cheese	Yogurt	Cottage cheese

Group 6: Fats			
Olive oil	Flax oil (supplement)	Fish oil (supplement)	Coconut
Nuts (any)	Seeds (any)	Nut butters	Avocado

A simple formula for creating fat-burning meals and daily meal plans

Once you're familiar with the highest quality foods and you understand the different food groups, the next step is to pick the foods you like and put them together into your own customized meals.

The classic bodybuilder's meal is a lean protein plus a starchy carb plus a fibrous carb. Here's the complete formula:

Step 1: Choose a lean protein for every meal.

Step 2: Choose a starchy carb for every meal.

Step 3: Choose your fibrous carbs (usually for your lunches or dinners).

Step 4: Choose your simple carbs (usually for your breakfasts or snacks).

Step 5: Add healthy fats (if there wasn't enough in the whole foods you chose).

Step 6: Assign a time a time for each meal so you establish a daily eating schedule.

To make sure your calorie and macro numbers are on target, there are two final steps. Step 7: Add up your meal subtotals and your daily totals. Usually you don't hit your numbers quite on the button your first try, so Step 8 is to increase or decrease the serving sizes so you are close to your calorie and macro targets.

If you want the most precision, use a spreadsheet (like Microsoft Excel) or nutrition software (like our Burn the Fat meal planner at www.burnthefatinnercircle.com).

Nothing could be simpler than a basic BFFM meal. As long as you understand which foods are lean proteins, starchy carbs and fibrous carbs, this is as easy as one, two, three. If you find making meals difficult, you're probably trying too hard to micromanage your macronutrients. The macros don't have to be perfect, just in the ballpark.

BFFM breakfasts

Because most people eat four to six times per day on this program and the first two meals will probably be in the morning, we'll call meals one and two breakfasts for simplicity.

The first step in creating a breakfast is to select a lean protein such as egg whites. The second step is to choose a starchy carb such as oatmeal. The third step, which is optional, is to pick a natural simple carb such as a banana or a dairy product like low-fat cheese.

Here are several examples:

<u>Example 1</u>	<u>Example 2</u>	<u>Example 3</u>	<u>Example 4</u>
Egg white omelet	Oatmeal	Egg scramble	Skim milk
Low-fat cheese	Whey protein	Potato	Shredded Wheat
Oatmeal	Banana	Salsa	Protein and fruit smoothie

Of course, there's no reason you can't have vegetables and chicken breast for breakfast (I know some bodybuilders who do). But a more traditional breakfast usually includes either hot cereal, cold cereal or whole grain bread for complex carbs; a piece of fruit for simple carbs; and eggs, protein powder or a dairy product for protein.

If you're looking for easy ways to eat more vegetables, put them into your omelets and scrambles. Spinach and mushroom omelets are a low carb favorite. Bell peppers, onions and tomatoes are also great for egg recipes. Potatoes go well with eggs when you have room for more starchy carbs. For Mexican eggs, add salsa. For a Greek omelet, try spinach, feta cheese and olives.

Yogurt, cottage cheese and fruit or a protein and fruit smoothie is also a popular light, quick breakfast or mid-morning snack. In bodybuilding diets, it's ideal to get protein at least four or five times per day, but not every eating occasion needs to be a full meal. Fruit or nuts by themselves also make good snacks – as long as they're part of the plan and you get enough protein the rest of the day.

BFFM lunches and dinners

The rest of your meals will usually fall in the afternoon and evening, so we'll group these together and call them "lunches and dinners." As with all meals, you begin by selecting a lean protein such as chicken breast. Second, you choose a starchy carb such as brown rice. Third, you choose a fibrous carb such as broccoli. Here are four examples:

<u>Example 1</u>	<u>Example 2</u>	<u>Example 3</u>	<u>Example 4</u>
Chicken breast	Top round steak	Salmon	Tilapia fish
Brown rice	Baked potato	Yam	Lentils
Broccoli	Garden salad	Asparagus	Mixed vegetables

The template method for creating daily meal plans

Protein plus starchy carb plus fibrous carb is a three-part meal template. You can use the template method for meal plans as well. A meal plan is simply several individual meals put together on a daily schedule. Using a template makes it "plug and play" easy and allows for almost unlimited variety. All you have to do is choose the foods you want to eat and plug them into the appropriate slots. The baseline nutrition template is where most people start. The maximum fat loss and contest diet templates (which have fewer carbs and more protein) are the next level after that.

The baseline nutrition meal plan template

Meal 1:

Lean protein, starchy carb, simple carb (dairy or fruit)

Meal 2:

Lean protein, starchy carb, simple carb (dairy or fruit)

Meal 3:

Lean protein, starchy carb, fibrous carb (vegetable/salad)

Meal 4:

Lean protein, starchy carb, fibrous carb (vegetable/salad)

Meal 5

Lean protein, starchy carb, fibrous carb (vegetable/salad), healthy fat

Notes on the baseline nutrition meal plan template

1. Use the baseline nutrition template for fat loss (with calories in a deficit), for year-round maintenance (with calories at TDEE), or even for muscle gain (with calories at a 10–20% surplus). This template is balanced and suitable for almost anyone with no health conditions or special restrictions. Adjust it as needed for your personal requirements (lactose intolerance, etc.)
2. Include a wide variety of natural foods including lean proteins, fibrous carbs, and starchy carbs. Fruits and low-fat dairy products are usually included and may be placed anywhere during the day (they're listed in meals one and two simply because fruit is a popular breakfast food).
3. This is a low-fat, but not a zero-fat meal plan. Include at least one serving per day of healthy fats and essential fats (healthy oil blend supplements, flaxseed oil, fish oil, fatty fish, extra virgin olive oil, nuts, nut butters, seeds, coconut or olives).
4. Macronutrient ratios on this plan should be approximately 50% carbohydrate, 30% protein, and 20% fat, give or take about 5% either way.
5. The default meal plan is set at five meals per day, but you could choose between four and six (more if you're a "nibbler"), and still fall within the bodybuilding nutrition style of eating. Most people follow the template, but you should customize your meal frequency to suit your goals and preferences. An alternate method that suits many busy people is

three meals (breakfast, lunch and dinner) with two or three snacks (five to six feedings total).

6. The simplest plan is to make every meal about the same size. However, using the nutrient timing strategy, you can move around some of your carbs to support your weight training schedule. For example, if you train early in the day, you could front load more of your carbs and have a large, high carb post-workout meal, then eat fewer carbs later in the day.
7. Choose whole food as much as possible, but you can use meal replacement shakes or protein drinks for convenience and count that as a “meal.”

The maximum fat loss plan and contest diet meal plan template

Meal 1:

Lean protein, starchy carb, natural simple carb (fruit)

Meal 2:

Lean protein, starchy carb (large serving for post workout), fibrous carb (vegetable/salad)

Meal 3:

Lean protein, starchy carb (small serving or none), fibrous carb (vegetable/salad)

Meal 4:

Lean protein, fibrous carb (vegetable/salad)

Meal 5

Lean protein, fibrous carb (vegetable/salad), healthy fat

Notes on the reduced carb maximum fat loss meal plan template

1. Use this template if you are a physique athlete, a competitive bodybuilder, or if you simply want to get extremely lean or break a sticking point. This plan is also popular with endomorphs and people who are carbohydrate intolerant. This maximum fat loss plan is higher in protein, lower in carbs and more restrictive than the baseline plan.
2. Eliminate refined carbs. Reduce starchy carbs and grains. Eat more fibrous carbs and green vegetables (green beans, asparagus, broccoli, leafy greens, tomato, cucumber, celery, cauliflower, spinach, squash, zucchini, etc.)

3. Use non-fat and low-fat dairy products in small amounts, but emphasize lean meats, fish, eggs and fibrous carbs first (many bodybuilders prefer to remove dairy products on the maximum fat loss diet).
4. Set macronutrient ratios at approximately 40% carbs, 40% protein, and 20% fat, give or take 5% either way. If you reach a fat loss plateau or want to accelerate fat loss, you can reduce your starchy carb calories more.
5. Cut back the starchy carbs even further (to about 25–30% of total calories) to turn this into a “contest diet” meal plan. That leaves mostly fibrous carbs and lean proteins with small amounts of healthy fats. The carbs should be low but don’t cut them out completely.
6. Use the nutrient timing method on weight training days, saving most of your carbs for around your workouts. If you train early in the day, front load your carbs early in the day, especially in the post-workout meal. If you train later in the day, save most of your starchy and simple carbs for your evening post-workout meal.
7. Keep fat intake low to help control calories, but always include at least one or two servings per day of healthy fats. When carbs are lower, fat may sometimes go a little higher (up to about 30% of total calories).
8. Cycle (zig-zag) your caloric intake. Take higher carb refeed days at least once every 7 days up to as often as once every fourth day (3 days low, 1 day high). The more you reduce your carbs, and the longer you diet, the more you’ll benefit from carb cycling.
9. Use this plan for maximum fat loss or contest dieting, not long-term maintenance. After you reach your goal, *gradually* re-introduce more calories from starchy carbs and shift back to a more balanced baseline nutrition program. Introduce 100–200 more carb calories per week and measure results before increasing again.

How to exchange foods, eat the meals you enjoy and get all the variety you want

Many diets tell you exactly what you’re supposed to eat every day in every meal, for days or even weeks on end. Some people want that kind of hand-holding and most people do enjoy variety. But if I wrote one set of meal plans and said you had to follow them to a T without deviating, that would create some problems. What if I gave you a meal plan and you were allergic or intolerant to half the foods? What if you’re a picky eater and you don’t like the foods? The fact is, I don’t even know what you like to eat. No other diet expert knows either, without consulting you personally.

There are nutrition principles that everyone must follow, but if you want the best results and the most enjoyable experience, it's much smarter to customize your meal plans. Meal templates and food lists are incredibly helpful, but you should be able to fill in the blanks and easily make swaps. The best news is that all it takes to get started is one good meal plan that you really enjoy and feel confident you can follow every day.

You were probably taught in school, by your parents or by professional nutritionists, that the more variety in your meal plans, the better. Since there are more than 40 essential nutrients you must consume to maintain good health and since no food contains all of them, it makes sense to get a certain amount of variety. Some fascinating research however, has revealed that when you're given too many choices, you not only get easily confused about what to eat, you also tend to eat more ("the buffet effect").

Food researchers have discovered that "stimulus narrowing" —eating the same thing every day or restricting the variety —can help you automatically eat less and maintain long term weight loss. Eating more or less the same every day also turns new behaviors into habits quickly, makes it easy to track calories, and helps you establish a baseline sooner, making it a snap to troubleshoot plateaus.

The majority of people on BFFM follow the same meal plan every day, especially in the early phases. They swap out foods and try new meals when they get bored. Many have two or three favorite meal plans —a total of 12 – 18 different favorite meals —and they simply rotate those over and over again. If you're like me and you like to follow the same meal plan almost every day, it's a good idea to get as much within-day variety as possible (make each meal different).

If you're the "get bored easily" type of eater, exchanging foods is simple. From your original meal plan, take the old food you want to change, and swap it for a new food *from the same category*. Carbs should be exchanged for carbs and proteins for proteins. This will keep your macronutrient numbers approximately the same.

For example, if you want to exchange rice for something else, look on the food list for other types of natural starchy carbs. You'll find yams, baked potatoes, beans, legumes, whole grains and many other options. The possible meal combinations are almost endless. You're not limited to the foods listed in this book, but our Burn the Fat food lists will give you a lot of good ideas.

Some other helpful resources include calorie counter books (Netzer's *Complete Book of Food Counts* is my favorite), smartphone apps, and online food data bases. The entire USDA food data base as well as our own custom Burn the Fat foods data base are available at our private members-only website: www.BurnTheFatInnerCircle.com.

The most accurate way to measure and track your calories and macronutrients

Weighing food is the most accurate way to track calories and macros, and that's why a food scale is a prominent appliance in every Burn the Fat kitchen. A scale is helpful for weighing meat, fish, vegetables, potatoes and many other foods. If the weight is listed on a package, you can eyeball the serving size from that alone. For example, a typical bag of frozen vegetables is 16 ounces, so if you want an 8-ounce serving, then use half of the bag. If a package of chicken is 18 ounces and you need a 6-ounce serving, simply divide the package into thirds. Typically, meats are weighed uncooked, as the fluids leak out during cooking, resulting in a lighter weight.

You can also use measuring cups for tracking calories and nutrient values by volume. Oatmeal and cereals are typically measured dry and uncooked. Rice and pastas are generally measured after cooking. Keep in mind however, that some calorie counter guides include both cooked and uncooked food values. The important thing is to be sure you don't confuse the two.

Also keep in mind that nutritional values can vary based on the source —the USDA data base, an online data base, a mobile app, a calorie counter book or the food label itself. Even label information can vary from one product to the next. This could get confusing if you were always comparing different brands or data sources and wondering which one was right. So don't. Measuring nutrition data is not an exact science and there are many places where errors can be introduced. The solution is to use the same data sources throughout the course of your program so you can establish a baseline and then simply plug them into the BFFM feedback loop method.

You won't need to count, weigh and measure everything for the rest of your life, unless you want to, because with enough repetition, eating healthy and getting your numbers in the right ballpark eventually becomes second nature. After a few months of weighing and measuring your food, you'll get a knack for portion sizes, and you'll have a better idea, just by looking, approximately how many ounces or grams are in any food item. But in the early stages, counting and tracking are a vital part of the nutrition education process. If you don't count, weigh and measure, you're running blind, and most people will badly underestimate their caloric intake.

How to make healthy food delicious using recipes, spices, seasonings and flavorings

Because the sample meals in this book are so simple (such as chicken, brown rice and broccoli), you might be wondering, "Am I supposed to eat everything plain?" The answer is, of course not.

There's a persistent and disturbing myth about bodybuilding nutrition that if something tastes good, you shouldn't eat it. This probably got started because many physique athletes choose to eat very plain and simple diets, which makes it very easy to prepare, follow and track the

numbers. The truth is, as long as you hit your calorie and macronutrient goals, you can do as much cooking as you're willing to spend time in the kitchen and as much spicing as your taste buds desire. Starting with very basic meals is simply another part of the learning process.

Unless you're already a food-savvy master chef, the learning curve usually goes like this: First, familiarize yourself with the best foods and work off a food list. Second, learn how to combine individual foods into meals. Only then do most people move on to fancier multi-ingredient, multi-step recipes. (Note: a complete collection of fat burning recipes and healthy cooking tips is the subject of another book. For more details, visit:

<http://www.burnthefat.com/products/recipes.html>).

You can freely use herbs, spices and seasonings such as black pepper, garlic powder, chili powder, oregano, parsley, sage, tarragon, thyme, dill, ginger, cinnamon, nutmeg, chopped onion, cumin, or paprika. You can also add any low- or non-caloric condiments, sauces, lemon juice, light dressings, low-calorie marinades, rubs, salsa, or non-caloric sweeteners (if you wish to avoid artificial sweeteners, stevia has become more and more popular and widely available). If you use any condiments that have calories, be sure to add those into your meal plan totals because the little things can add up over time.

Sample meal plans

In the appendix, you'll find several sample meal plans shown just as they would appear if you created them on a spreadsheet or using our Burn the Fat meal planner software (available to members at www.BurnTheFatInnerCircle.com). Keep in mind that these meal plans are simply suggestions and examples. By all means, customize and inject variety as long as you stay within the general framework of the program.

There's an old proverb that goes, "If you give a man a fish, you feed him for a day, but if you teach him how to fish, you feed him for life." Most diet programs are "giving you a fish." BFFM is "teaching you how to fish." With BFFM, you learn how to develop your own meal plans, which is what you really need to achieve long term success.

What to eat in restaurants

Restaurants are a danger zone where just a few indiscretions can sabotage all the other hard work you do all week long. Surveys from the National Weight Control Registry have shown that people successful at long term weight loss maintenance don't eat at restaurants very often: the average is only two times per week. If you surveyed champion bodybuilders and fitness models you'd find similar statistics —physique athletes prepare their own meals most of the time.

Fortunately for people who have to dine out more often, it's possible to eat well in restaurants; it simply takes more diligence. First, decide in advance that you're going to stick with your plan, before you even set foot in the restaurant. Read menus carefully, watch for danger items, know how your food is prepared, and don't hesitate to tell your server exactly what you want and how you want it served. Pay close attention to calories because restaurant portions are often oversized and extra calories from butter, oils and sauces are often added, but not noticed.

You can certainly relax and indulge occasionally, but there's no excuse for completely blowing off your plan just because you're dining out. Nowadays almost all restaurants are accommodating healthy eaters and more healthy food restaurants are opening than ever before. Even the ubiquitous fast food restaurants have salads and grilled chicken breasts. Use the following do's and don'ts to help you eat healthier when dining out:

- DON'T order restaurant or fast food burgers. Instead, choose a grilled chicken or turkey breast sandwich.
- DON'T order cheese, cream, egg, or onion soups. Instead choose clear, broth-based soups or soups with vegetables.
- DON'T order foods described as buttered, buttery, in butter sauce, prime, stuffed, fried, pan fried, batter-dipped, creamed, in cream sauce, in cheese sauce, in its own gravy, hollandaise, béarnaise, beurre blanc, parmigiana, parmesan, alfredo, au gratin, au lait, a la mode, au fromage, basted, or escaloped.
- DON'T put croutons, bacon bits, ham, creamy dressing and other high fat toppings on salads.
- DON'T order croissants, pastries, biscuits, butter rolls, or regular muffins.
- DON'T order traditional desserts. If you must, split one with a friend or have fruit.
- DON'T feel that you must eat everything on your plate.
- DO order food described as broiled, grilled, poached, roasted, baked or steamed
- DO order whole grain breads or pitas without butter (not worth the calories), but keep starchy carbs and breads low on maximum fat loss plans.
- DO order your vegetables steamed.
- DO order fresh fruit (no whipped cream or sugary toppings).
- DO order grilled (not fried) chicken breasts and make sure skin is removed.
- DO order red pasta sauces instead of buttery, cheesy or creamy sauces (like alfredo).
- DO order entrees containing chicken, fish, seafood, rice, potatoes, and vegetables.
- DO order your baked potatoes plain (no butter, no sour cream, no bacon bits).
- DO order green and tossed salads without the high-fat toppings (bacon bits, cheese, croutons).
- DO order low calorie salad dressings or small amounts of olive oil and vinegar dressings.
- DO order your eggs with whites or limited amounts of yolks.
- DO order water or low calorie beverages such as skim milk, diet drinks, tea, coffee.
- DO use freely spices, pepper, herbs, mustard, lemon juice and vinegar.
- DO eat small portions of everything.

Why you should “cheat” and make free meals a part of your plan

To an athlete, food is fuel, food is building material and at times, great discipline is required to achieve challenging physique goals. But food is also one of life’s great pleasures and an important part of our social lives. When you deprive yourself completely, it can make you more likely to binge, crave missed foods, and ultimately fall off the wagon.

Physiological hunger and cravings can be triggered by low calories, skipping scheduled meals or eating too much sugar. Psychologically, it’s simply human nature to want what you can’t have. That’s why, for most people, it’s better to allow cheat meals. But there’s a right and wrong way to do it.

A lot of diet programs allow an “anything goes” cheat day once per week. That might work for some people, some of the time, especially when a big cheat day follows a week or more of very strict dieting (it might have a similar effect as the refeed strategy we discussed in chapter 12). However, while I do recommend clean refeed days, I don’t recommend binges or free-for-all cheat days. The former are planned and measured parts of your program. The latter are more like gluttony and can easily go too far, break your momentum and backfire badly.

Even with cheat meals, the key is planning. The most effective strategy I’ve ever used is to stay on a meal schedule seven days a week, but plan for one or two weekly cheat meals as part of the plan. For most people, that’s a compliance rate of about 90–95%. Enjoy eating anything you want for your cheat meals.

Consistency is another key. Honoring the compliance rule you set for yourself and staying on a meal schedule are hallmarks of all the most successful people. Inconsistency doesn’t allow good habits to form and keeps you stuck in that horrible cycle of cheat/guilt, binge/starve and “start over Mondays.” Actually, if it’s a part of your plan, it’s not really cheating and if it’s not cheating, there’s no reason to feel guilty. That’s why many BFFMers prefer to call them free meals, not cheat meals.

Most people track the calories in their free meals carefully, but either way, remember that there are two kinds of compliance. First, there’s compliance to a calorie deficit, which is mandatory for weight loss. There’s also compliance to a food list, which is actually more flexible than you might think. I know some people who only comply to their clean foods list about 80% of the time, but as long as they hit their calorie deficit and macronutrient goals, they still get great results. Be careful not to get too lax though. The lower you drop the compliance to your healthy food list, the easier it is to start forming bad habits, the lower the nutrient density of your meals, and the unhealthier it gets.

Now, create a plan and commit to it!

BFFM is a structured, by-the-numbers program, but there's a lot of flexibility built into it. Whether you're as disciplined as a bodybuilder or you customize your plan to suit a more relaxed lifestyle, either way, you must have a plan! If you think you can "intuitively" eat properly from day one without educating yourself and developing a plan, well... good luck to you.

In our modern obesogenic environment, with social pressure, food cues tempting us at every turn and technology making us more and more sedentary, being able to successfully guesstimate your nutrition or trust your innate feelings of hunger and satiety are not things that come naturally or easily. The only sure-fire way to make eating well become second nature is by going through the learning process and that includes setting goals, crunching numbers, counting, measuring, tracking and meal planning.

There are a few more chapters to go, including important information on the training elements of the program. But you now have all the tools you need to start your new muscle-feeding, fat-burning eating plan.

This chapter was loaded with little tips, tricks and food swaps that you can start implementing not next week, not tomorrow, not later, but right now. As General George S. Patton said, "A good plan executed now is better than a perfect plan executed next week." So go get to it! Create a meal plan and keep it where you can see it every day and start making changes today—and if a complete overhaul seems too overwhelming, do it one change at a time.

Chapter 15: The Truth About Supplements: What the Weight Loss and Fat Burner Companies Hope You Never Find Out

“The supplement industry is rivaled only by the cosmetics business in three key areas: the consistency with which its products fail, their consumer’s ability to forget, and the buyer’s undying faith in the next big thing.”

—Dave Barr, author of *The Anabolic Index*

“One result of the interface of publishing and supplement businesses is the widely promoted position that success in training is tied to supplement use. That is, if a person is not taking a wide array of supplements, then their training effectiveness and results will be severely compromised. Of course, none of this is true. Consuming all these expensive products is more than odd; it’s downright crazy.”

—Richard Winnett, author of *Ageless Athletes*

Reviewing every diet and sports nutrition supplement on the market could fill many volumes, yet this will be a short chapter. Why? A small handful of products may be helpful for nutritional insurance or convenience, and on a rare occasion, a product comes along that’s a legitimate body composition enhancer or a true help to athletes. Overall, however, most “fat-burning” and “muscle-building” supplements are a waste of money. The advertising claims are notoriously long on hype and short on science. The track record for weight loss supplements is dismal, and the ones that work, barely work at all.

Why then do so many people want to keep popping diet pills and gulping down weight loss shakes? Half the reason is human nature and the desire for the quick fix. The other half is the persuasive marketing machine that the supplement industry has become—especially the weight loss side of it. According to Marketdata Enterprises, if you include the big players like health clubs and commercial or medical weight loss centers, the diet business is now worth a total of \$58.5 billion in sales each year! In that enormous market, consumers spend a mind-boggling \$2.6 billion on diet pills and meal replacements alone.

With this kind of money at stake, the supplement fat cats will tell you almost anything to get you to buy their products. Some will lie right to your face if they can get away with it. And the way the industry is so loosely regulated allows them to get away with murder. Unlike pharmaceutical companies, which must run their products through rigorous clinical trials prior to approval, supplement companies can sell anything as long as they include the proper Food and Drug Administration (FDA) disclaimers. The FDA only steps in if they suspect a product already on the shelves is harmful or contains substances they believe should be classified as drugs.

The Federal Trade Commission (FTC) prosecutes false claims in advertising, but the sheer number of products and companies make it impossible to keep track of them all. By the time the FTC catches one bad guy, several others have popped up in their place. With the low barrier of entry provided by the internet, the problem is now worse than ever.

Human nature is not going to change and business will keep going where the demand keeps flowing. The only way to protect yourself from scams and potentially dangerous products is with the right education and the right philosophy. You don't need to read every study on every supplement. What you must do is take an evidence-based approach toward evaluating claims and develop a personal philosophy that says, "no thanks" to the quick fix mentality.

Where you should and shouldn't get your information about supplements

Supplements are an area where it pays to be skeptical, to demand proof before purchasing, and to doubt everything you read in the magazines, newspapers and other mass media until you've checked out all the claims for yourself. If in doubt, "Show me the evidence" or "How do you know that's true?" should be your first questions. Here's why:

Most people get information about supplements from their gym buddies or from bodybuilding and fitness magazines. We tend to trust our friends for recommendations, but most of the time, individual anecdotes are a weak and unreliable source of evidence. It's even more ironic that the mass media is considered one of the most credible sources. The truth is, the mainstream media is all about readers and ratings, while the fitness and bodybuilding media have their own dirty little secret.

By putting information about "new supplement breakthroughs" into editorial format, written by authority figures, they are much more believable. That makes fitness magazines the perfect platform and fitness models the ideal spokespeople for selling supplements. As a result, most of the magazines have turned into thinly disguised "supplement catalogs," and many of the top physique athletes and trainers have become shells.

The magazine/supplement company business plan has been around for ages, but in recent years, it became clear that more money could be made selling supplements than selling subscriptions or even advertising. Soon, the entire industry had jumped on the bandwagon and each publisher owned their own supplement line. This is true for online magazines as well as paper and ink magazines.

Even if a magazine doesn't have a vested interest in a particular line of supplements, you can't count on them for impartiality or full disclosure because they don't want to alienate the deep-pocketed companies that are spending big money to advertise. It's unlikely that a publisher is going to take an anti-supplement stand while their magazines are full of supplement ads worth tens of thousands of dollars per page. It's equally unlikely that they'll turn down ad revenue just because a supplement company doesn't provide scientific evidence to back up their claims.

So where should you get your information about supplements?

The best source for supplement information is the peer-reviewed scientific journals. Please note: I'm not talking about newspaper blurbs and press releases about the latest study, where messages routinely get twisted by agenda-driven websites or misinterpreted by journalists who lack scientific training. I mean reading the original studies themselves. The PubMed data base from the National Library of Medicine is a valuable resource for this kind of research, and it's worth learning how to use it (www.pubmed.gov).

The trouble is, combing through research is time consuming and I admit, boring at times, not to mention that even if you read the scientific papers yourself, they can be hard to decipher or put into context. That's why one of your best allies is a research-savvy health and fitness expert who is not in the supplement selling business. There aren't many of us, but reading research summaries from independent experts you trust can save you time, money and possibly even your health. We have an evidence-based supplement and research review department for all our members at www.burnthefatinnercircle.com. This is one of the few places, in print or online, where you will never see a supplement ad.

Another savvy supplement strategy is to avoid being one of the early adopters. For the sake of your safety as well as your bank account, don't be the guinea pig! Wait until the final verdict is in. Remember smilax? Back in the 80s, they said it was better than steroids. Where is it today? Beta sitosterol, anabolic mega packs, boron, dibenzozide? Where are they today?

Strength coach Ian King described the supplement life cycle perfectly:

“As a coach, I like to see a supplement on the market for about 3 years before coming to too many conclusions. The power of marketing can have a great placebo effect. But after a few years, any supplements that could be described as ‘unclear’ get sorted out by consumer demand and supply. If you analyzed the ‘rage’ supplements per marketing dollar each year for the last 10 years, you would be stunned by how many ‘almost drug like’ supplements have come and gone.”

I think I'm being generous when I estimate that 95–97% of all the top-selling supplements that were rushed into the bodybuilding and fat loss markets as the next big thing, were later proven totally worthless (or even dangerous). So on top of looking for research as a good scientific test before taking a supplement, I believe that looking for a long-term track record (with overwhelming anecdotal evidence) is also a decent real-world test of a supplement's benefit.

Another reason not to rush to buy every new product is that the tested and proven supplements are best implemented later on when you hit a plateau, not when you're just getting started. Even the most ardent supporter, if he's being intellectually honest, must admit that supplements do not make or break you—they're like the icing on the cake. It makes sense then to save them as your last resort strategy, to capture that final few percent that might help you break a sticking point or give you that slight edge in competition. That's all supplements do. They're not drugs. They don't work miracles.

What you must know about the difference between supplements and drugs

According to the Food, Drug and Cosmetic Act, the term *drug* means, “articles intended for use in the diagnosis, cure, treatment, or prevention of disease, and articles intended to affect the structure or function of the body.” A dietary supplement is a substance that is a part of your body's normal physiological processes. A drug is a substance that actually alters those processes.

Given these definitions, you should be twice as skeptical when an ad claims that a supplement produces dramatic or drug-like results. Steroids are body composition-enhancing drugs, and they're illegal without a prescription for medical use. Over-the-counter supplements you buy at the health food store are not steroids and they don't have drug-like effects; not even close.

Supplements are actually a lot more like food. In fact, protein powder, multivitamins, essential fatty acids and so on, are really little more than powdered food or food derivatives. When someone asks me, “Does protein powder work?” I often reply, “Does chicken breast work?” They tilt their head and crinkle their eyebrows because it sounds strange asking if chicken breast “works.” It's just food, right? Yes, but to me, it's equally as odd to ask if protein powder works, because protein powder is just food too, yet people seem to think it's some kind of muscle-building miracle.

When you're starting out, you should look to supplements for two primary benefits: The first is nutritional insurance. The second is convenience.

Once your basic needs are covered, the additional, more glamorous benefits that most people really desire include enhanced performance, greater muscle growth and increased fat loss. In the entire history of the supplement industry, the number of products that have been proven significantly effective in these areas can probably be counted on one hand.

The Burn the Fat, Feed the Muscle supplement short list

I have no affiliation with the supplement industry, so you'll never hear me pushing products like so many other fat loss authorities who profit from their sale. Supplements are not required on this program. You can get fantastic results without them.

For the high level competitive athlete, a closer evaluation of sports nutrition products may be worth it. Where contests are won by the smallest of margins, and in pro sports where huge salaries are at stake, it makes sense to pursue every safe, legal and ethical advantage you can, however small it may be. But even if you're interested in pursuing that slight edge, and especially if you're on a budget, it makes sense to approach supplement use through a hierarchy of importance, starting only with the most basic and proven products.

For the majority of our readers, that leaves the BFFM "short list"—the only supplements I would even recommend considering, right from the start.

Multi vitamins/minerals

It's common knowledge that vitamin and mineral deficiencies can cause all kinds of health problems. True deficiencies in developed countries today are rare, but many reasons have been proposed for why you might not be getting optimal levels of all the nutrients you need from food. The list includes soil depletion, chemicals, preservatives, food processing, cooking, freezing, stress, incomplete absorption, lack of variety and low calorie dieting.

Keep in mind that a well-balanced, calorie-sufficient nutrition plan, high in fruits and vegetables, is fully capable of delivering all the essential nutrients you need. Nutrition experts, such as Dr. David Jacobs of the University of Minnesota School of Public Health, say that our focus should shift toward food, not nutrients as the fundamental unit of human nutrition.

Writing in the journal *Nutrition Reviews*, Jacobs suggests that too much focus on isolated nutrients oversimplifies a complex system and fails to consider the action of what he calls the *food matrix* on our biology. Thousands of phytochemicals, antioxidants, fibers and other substances that also appear in whole food with vitamins, minerals and macronutrients may work

together synergistically. Individual nutrients may not have the same biological action if they're taken alone. In some cases, they may actually cause harm.

Assuming you don't have a deficiency, taking additional vitamins and minerals has never been proven to burn fat, build muscle, increase performance, or improve your health. Multi-vitamin and mineral supplements are best seen as an insurance policy against deficiencies. They simply fill in any gaps that might be left by the foods you eat. During fat loss programs, when you're restricting calories and foods, supplementing as nutritional insurance probably makes the most sense.

Whole food, however, is your best source of nutrition. The next time you hear a news flash about the "amazing" health benefits of one specific nutrient, instead of running out to grab a bottle of pills, it would probably serve you better to ask, "What whole foods are the best sources for that nutrient?"

Meal replacement products

Meal replacement products (MRPs) typically come as powders, in packets or canisters, and you mix them with water or milk. MRPs are especially helpful for convenience. If your schedule is busy with work, school, family or other commitments, it can be challenging to follow the bodybuilder style of eating multiple times per day. MRPs make it easy.

MRPs can be used daily and counted as a meal, or used occasionally if you normally eat a whole food meal but are pressed for time, such as when you're traveling. They can make a quick breakfast too, for when you need to bolt out the door in a hurry in the morning. MRPs are usually high in protein and some are mostly protein to accommodate lower carb diets.

Read the labels and check the macronutrient and calorie amounts to be sure a product's specs fit in with your plan. Most meal replacements are about 280–350 calories. For more calories, you can mix the MRPs in milk, add fruit, natural peanut butter or grab a handful of almonds or walnuts. Post-workout drinks are a different type of MRP and are usually made with the fast-digesting whey protein and are much higher in carbs.

Most supplement companies would like you to believe that their powders, drinks or shakes have some kind of special muscle-building or fat-burning properties. The truth is that MRPs are nothing more than powdered food. If they help you hit your macros, control your calories and manage your appetite, they can help support a fat loss program, but they can't burn fat and they won't contribute to building any more muscle than a whole food meal would.

MRPs are also meant to supplement an already nutritious and balanced meal plan, they're not meant to replace food entirely. Although doctors occasionally prescribe liquid diets, as a general rule, whenever you have a choice, eat whole foods over drinks and save the MRPs for convenience. MRPs are not better than food, no matter what any supplement guru says. Even bodybuilders and trainers who sell these products almost unanimously agree on that point.

Bodybuilding trainer John Parillo put it this way: "Food is the cornerstone of nutrition. If you do not eat the proper foods—lean proteins, starchy carbohydrates, and fibrous carbohydrates—nothing else matters. No supplement can ever provide you with all the benefits that food supplies. We were built to process foods—proteins, carbohydrates and fats—not powdered or liquid supplements alone. If you want to make the best possible progress with your physique, I suggest that you forget the hype surrounding all supplement diets or meal replacement programs and get back to basics. And that means food."

Protein powders

If it's a problem for you to include a lean protein food with every meal, or if you don't eat meat, protein supplements can be especially helpful. Protein powder can be mixed into a drink and you can enjoy it as a shake, or in some cases, you can use protein powder in recipes or mix it right into your food. One of my favorites is high protein oatmeal. I microwave my oatmeal, then stir in vanilla whey protein, sprinkle on cinnamon and sometimes, for more carbs, I add natural applesauce or chopped apple. It's delicious and convenient.

Protein powders are different from meal replacements in one major way: the former usually contain no carbs or very few carbs. Protein powders are exactly what the name implies: pure protein. Whey and casein are among the most popular protein supplements and for good reason—these dairy proteins are among the highest quality proteins you can get.

Creatine monohydrate

Creatine is so well researched, with so much real-world feedback supporting its use, that in a world filled with bogus products, creatine has been called "the supplement that actually works."

Creatine regenerates ATP, the chemical that supplies energy for the initial seconds of muscle contraction. Creatine helps you train harder (weight training and anaerobic training), reduces neuromuscular fatigue, and delays the onset of lactate accumulation during high intensity exercise.

The positive effects of creatine documented in hundreds of scientific studies include increased strength, power, weight gain, and recovery time. Creatine is used widely by sprinters, bicyclists, football players, boxers, powerlifters, bodybuilders, and virtually every other athlete who requires strength and power, from high school to the pros. It can be helpful during fat loss programs by helping you maintain your strength and lean mass while in a caloric deficit.

Creatine is found naturally in foods such as beef and some fish, but it would take a huge amount—2.2 kg of steak—to equal the amount you’d get in a single 5-gram dose of the powder. That’s why people supplement with the creatine powder.

Creatine supplements are available in a tasteless and odorless powder that is usually mixed in water or juice. Creatine monohydrate is still the form that’s most studied and most used. The usual dose is 20–25 g for a 5–7 day loading phase, then 5 grams per day for maintenance. The loading phase can be skipped, but it takes about a month of 5-gram daily doses to saturate the muscle. Loading allows you to reap the benefits more quickly.

Creatine is a natural, over-the-counter supplement—it’s not a drug or steroid, so it’s not going to produce incredible gains in muscle size, although the lean weight gains can sometimes be significant, especially in men. Creatine works, though some research shows it works better for some people than others. One study estimated that 20–30% of people are non responders.

For a supplement with so much scientific support, it's surprising that there are so many myths about it. These range from “Creatine causes cramping” all the way to “Creatine causes kidney damage.” Most of this misinformation comes from the media or gym gossip. The science says creatine is safe.

According to Jeff Stout, PhD, author of *Essentials of Creatine in Sports and Health*, the only clinically reported “side effect” of creatine use is weight gain. Some users claim that they get bloating or an upset stomach, but taking creatine with a meal or skipping the loading dose seems to solve that issue.

People with pre-existing health conditions should ask their doctor before taking any supplements. But the bottom line is that creatine is one of those rare safe and effective sports supplements for healthy men and women.

Essential fatty acid supplements

As you learned in chapter nine, dietary fats are calorie dense, but not all fats are inherently bad for you. The omega-3 fats have received the most attention because they’re so crucial for good

health and they're the ones most likely to be deficient in the average person's diet. Food sources of omega-3 fats include salmon, walnuts, seeds and small amounts from dark green leafy vegetables. Some people still fall short, so they turn to supplements.

Years ago, flaxseed oil was the most popular fatty acid supplement. It's one of the richest sources of plant-based omega-3 fats. Many companies also make essential oil blends which include flaxseed combined with other nutritionally rich oils. These are taken as supplements—they are not cooking oils.

Over the last decade, mounting research has made fish oil the darling of the health and fitness world. The biologically active ingredients that seem to make fatty fish so beneficial are the long chain omega-3 fatty acids, EPA and DHA. Fish oil has been extensively researched for heart, blood (cholesterol/triglycerides), brain, skin and joint health. More than a half dozen human studies also suggest that the omega 3 fats in fish may help support fat loss.

Even if you take the research results at face value, the fat loss isn't all that impressive. It's also possible that these small improvements in fat loss are simply correcting omega-3 deficiency or fixing omega-3 and omega-6 imbalance (which is quite common). Therefore, will these benefits continue or was it a one-time improvement?

In any case, there are plenty of good reasons to eat fatty fish like salmon or sardines for cardiovascular and other health benefits. If you don't eat fatty fish at least twice a week, that's where fish oil or fatty acid supplements would come in. Non fish eaters or vegetarians can stick with flaxseed oil. This plant-based source of Alpha Linolenic Acid (ALA) converts in the body to EPA and DHA. (The efficiency and amount of conversion have been a subject of controversy, however, which is one of the reasons fish oil is more widely recommended today.)

Well-conducted human studies suggest that 1.5–2.0 grams per day of combined DHA/EPA is the right dose when fat loss is the goal. A big guy might go with as much as 3.0 grams. There are studies that tested higher doses of fish oil for specific health ailments, but the American Heart Association has warned against taking more than 3 grams of combined EPA/DHA per day without a physician's supervision because of potential side effects such as increased bleeding time.

If you're not sure that your food intake has you covered, the fish oil or flaxseed oil supplements are research-supported, worthwhile additions to your nutrition plan for supporting fat loss and overall good health.

Green tea

One product that seems to get a lot of positive press is green tea. EGCG, the active alkaloid in green tea, is a legitimate thermogenic (increases metabolism). A Swiss research team discovered that 270–300 mg of green tea extract taken three times a day increased metabolic rate by 79 calories on average. Hypothetically, that adds up to an extra pound of fat lost every 44 days. Not much, but most people will take all the help they can get, right?

Here's the catch: An increase in metabolism for a few hours isn't the same as actual fat loss over time. In fact, these studies didn't even measure weight loss or body composition. They only measured a 24-hour increase in energy expenditure. This is a great example of how you need to look very closely at what the research really says before you take the ad claims at face value.

On a more positive note, green tea is high in antioxidants and other healthy compounds. There are more than 2,000 research citations about potential health benefits, plus a 5000-year history of use in China and the Far East. It's certainly a healthy beverage and it is possible that the extract supplements might provide some small amount of support to a fat loss program. Just don't expect any miracles.

A short history of fat burning supplements

As I mentioned earlier, the list of supplements worthy of mentioning, let alone recommending, is short. Since I don't give supplements much space in this book, I receive questions constantly about whether various products work. I review the scientific evidence on dozens of supplements, old and new, at our members-only site, www.burnthefatinnercircle.com. By far, the most frequently asked questions are about “fat burners,” so we'll end this chapter with a brief stroll through the long and sordid history of this billion-dollar market and then I'll leave you with strong words of advice.

The most popular “fat burners” ever were ephedrine-based products, which hit the shelves in 1993 and enjoyed over a decade of wild popularity. Ephedrine is a drug derived from the Chinese herb ma huang (ephedra), similar in chemical structure to amphetamines. It's a beta adrenergic agonist which works as a central nervous system stimulant and thermogenic.

There was actually some good scientific evidence showing that, when combined with caffeine, ephedrine or the herbal ephedra alkaloids increased weight loss. You could also feel it—you got an energy buzz. That's why it was promoted not only as a fat burner, but also as an energy pill or pre-workout stimulant.

So if it worked, why did it get banned and pulled off the market in 2004? The official reason was safety concerns. The FDA yanked it after 80 ephedrine-related deaths and 1400 adverse effect complaints, ranging from heart palpitations to strokes, coronaries and seizures.

Many people argued that when compared to deaths caused by prescription drugs and over-the-counter drugs like aspirin, ephedra was actually fairly safe when used as directed by healthy individuals. Here's something to consider, however: stimulants can be addictive. Addiction can lead to inappropriate use or abuse. At the height of the craze, 12–17 million people were using ephedra and no doubt, many of them were hooked on what was essentially a mild form of legal speed. Students were popping these pills to stay awake and study all night. They were popular with partiers and truck drivers too.

New types of pre-workout stimulants are still popular today, including a whole new industry of energy drinks, and safety is still a concern for some of these products. Even if a person is healthy and the risk-to benefit-ratio seems acceptable, there's always the risk of over-stimulation and dependency on “fake energy.” A word to the wise: what goes up, must come down. Good nutrition and lifestyle changes can give you fantastic even-keeled energy levels, naturally.

Fat burners in the post-ephedra era

In the last year before ephedra was banned, sales had skyrocketed to \$1.25 billion, according to the *Nutrition Business Journal*. As you can imagine, when the FDA pulled the plug, supplement companies scrambled to come out with new ephedra-free “fat burners” as they anticipated the imminent doom of their multi-million dollar cash cows. The ads proclaimed, “The next generation of thermogenic technology! More powerful than ephedrine-based fat burners!”

The great irony is that fat burners have not gotten more effective. At best, today's crop of products are only mild appetite suppressants or weak thermogenics that might give you a slight buzz from all the caffeine. There's no guarantee of their safety and there's little proof that they work, yet the before and after photos make them seem as enticing as ever. That's another scandal all by itself.

In January of 2007, four diet pill companies you've probably heard of were sued by the FTC and fined \$25 million. One company was prosecuted after one of the models, a Los Angeles bodybuilder, swore under oath that he was paid to stop working out and eat ice cream and donuts to fatten him up three weeks in advance of his “before” photo shoot. Then he used his bodybuilding expertise to get back into his usual top shape. Another FTC lawsuit was filed when

a fat burner company paid a fitness model to take her “before” picture right after she’d given birth. This kind of deception is not rare—it’s rampant!

I don’t think I’m exaggerating when I state my opinion that the fat burner industry is one giant scam, from the ineffectual products to the lack of integrity in marketing. As a natural bodybuilder, I’ve routinely reached 4% body fat for competitions and maintained my body fat at around 9% all year, using my own system of natural nutrition and training. I’ve gotten as lean as I wanted to be with no drugs, no pills and no fat burners. I’ve seen thousands of other people do it naturally, and you can do it too.

Conclusion: There’s no magic pill

I find the obsession so many people have with taking pills for weight loss both perplexing and troubling, especially when you consider that fat loss can be achieved safely and naturally, so simply and predictably with sensible nutrition and training.

Spending big money, sometimes \$40 to \$50 a bottle or more on pills that haven’t been thoroughly vetted for safety and effectiveness is even more baffling to me when you consider that even if you get some small benefit, it’s nothing you couldn’t get from another week or two of healthy eating!

Nutrition from whole food, strength training, cardio training and mind training—the four major elements of a good fat loss program—are the keys to your progress, not supplements. If you’re not satisfied with your results, believe me, it’s not because you have a “diet pill deficiency.”

Chapter 16: Cardio Training Secrets to Accelerate Your Fat Loss

“To lose fat, you need to create a calorie deficit. This can be done using high- or low-intensity exercise. In other words, the best exercise for weight loss is to burn as many calories as you can in the time you have available.”

—Christian Finn, exercise physiologist and founder of www.TheFactsAboutFitness.com

“Studies have shown that it’s not the type of activity, but the amount of energy expended, which is central to promoting the loss of adipose tissue.”

—Mel Siff, author of *Facts and Fallacies of Fitness*

If you know the secrets, cardio can be the number one key to accelerating your fat loss beyond what you could achieve with diet alone. If you do it right, you could double or even triple your rate of fat loss, boost your metabolism, increase your conditioning to an athlete’s level and get healthier than you’ve ever been. If you do it wrong, you will waste enormous amounts of time and suffer consequences such as muscle loss, metabolic adaptation, orthopedic injuries and burnout.

Enjoying the positives of cardio without the negatives is all about intelligently integrating cardio with nutrition, fine-tuning the balance between intensity, duration and frequency, and choosing the right cardio program for your goals, your body type and your lifestyle. This chapter will show you how.

Training to burn the fat

Even if you ask top personal trainers, whose entire careers are devoted to preaching the benefits of exercise, they will almost all concede that the number one priority for fat loss success is nutrition, not training. There are two major reasons for this.

First, it’s easier to create the initial calorie deficit by pulling back on your food intake. If you were maintaining and you ate 500 fewer calories each day—even if you did nothing else—you’d start losing weight. Yes, just like that – without the slightest physical exertion. If you were smart, however, you’d start with reducing your food intake, but you wouldn’t stop there, because as important as it is, nutrition is only one piece of a complete fat loss program.

Second, it’s not only possible, it’s easy to out-eat any amount of exercise if you’re not closely watching the balance between calories burned and calories consumed. Trainers are constantly frustrated when their clients train like champions, then leave the gym and proceed to erase all the

hard work they did... with a fork and a knife! Sometimes they cancel an entire workout's calorie burn with one visit to the coffee and donut shop.

Some gym-goers may be thinking, "There's no way I could eat so much that it would undo all my training!" Think again. Endurance athletes are a perfect example. They might bike, swim or run for hours every day without losing weight. Why? They're already lean, so they don't want to lose weight. It's not unusual for endurance athletes to maintain their weight on 5,000 calories per day because they put all the calories back—on purpose—to match the training demand. People who want to lose weight often do the same thing; they train like crazy, but they put all the calories back. The difference is, they do it accidentally. They don't lose weight either. Oops!

This is why there are so many so-called "experts" who believe that exercise doesn't work for weight loss. They claim that people compensate by eating too much after starting an exercise program, negating the extra calories they burned. "Well no kidding, doofus!" I yell at them. "Don't put all the calories back! It's called dietary restraint! Working out isn't a free pass to eat as much as you want. Duh!"

The ultimate secret to fat loss

The secret to fat loss is so simple, it's downright exasperating that it doesn't click instantly for the millions of people struggling with excess bodyfat. It's even more maddening that so many diet "experts" don't get it either, and they give out misleading information that keeps people fat. Please read this as many times as necessary until you get it.

The ultimate secret to fat loss is not exercise, per se. It's not what foods you eat either. It's achieving a calorie deficit, and consistently staying in that deficit until you reach your goal, despite changes that take place in energy intake or energy expenditure over time. Nutrition is only one of the ways to achieve the deficit—you reduce calories in. Training is the other way—

increase calories out.

The gut reaction many people have when hearing this is, "It can't be as simple as eat less and exercise more—we've heard that for years and it hasn't solved the problem." I agree. I didn't say eat less and exercise more is the secret. I said the calorie deficit is the secret. Exercising more is a poor crutch for a lousy diet or ignorance of calorie math. Training more to increase a deficit, on the other hand, accelerates fat loss every time.

Focus on the deficit. It's a simple concept on paper, but not easy to manage in the real world. It takes knowledge, awareness, diligence, discipline, honesty and consistency. The good news is,

when you get it intellectually and then you go out and apply it, you'll be in total control of your body and you'll never have to worry about excess weight again.

The final nails in the coffin for diet without exercise

If nutrition gets ranked as the most important element for fat loss and you can lose weight with diet alone, then why bother training? Why not just cut calories and save yourself a lot of time and sweat? That's not an unreasonable question. The answer is: If you burn the fat with training, it produces much faster fat loss, better body composition, better health and better fitness than if you starve the fat with diet alone.

Dieting does nothing to make you stronger, fitter, or more muscular. Diets can actually make you a smaller version of your old self—weighing less, but still weak and flabby (“skinny fat”). If you only want a smaller pants size, you can do it with diet. If you want a lean, muscular and athletic body that looks as good out of clothes as it does in clothes, training is mandatory.

The difference between activity and training

All physical activity counts. Even yard work, walking around town doing errands, or vacuuming the house burns calories. But obviously, some activities don't burn much or have little effect on carving out a muscular body, so we don't count them as formal training.

Your miscellaneous activity is part of NEAT, which if you recall, is the acronym for non-exercise activity thermogenesis. The more you walk and the more activity you get throughout the day, the better. It all adds up, and it can nudge along your fat loss nicely over time. But it's the formal type of training that we'll focus on, because that's what really transforms your body quickly and dramatically. Training is the difference between the person with an ideal weight but an average-looking body, and the person who looks cut and chiseled like a fitness model.

In BFFM, there are two types of formal training—resistance training and cardio training. Both can burn large amounts of calories and help you lose fat, but we're going to consider them as two separate endeavors, with distinctly different purposes. You'll focus on weight training for gaining strength, building muscle, maintaining muscle and reshaping your body. You'll focus on cardio training for heart health, conditioning and fat burning. This chapter is about the cardio.

How to burn fat faster and keep it off forever

Accelerating your fat loss is simple: increase your calorie deficit. If you have a 500 calorie daily deficit, increase it to 750 or 1000. One way to do this is by decreasing your food intake even

more, but there's only so far you can cut calories until you're starving, and bad stuff starts to happen. That leaves cardio training—on the “burn more” side of the energy balance equation—as the prime method for increasing your deficit.

You can lose weight without training, but without some form of vigorous physical work, you'll never lose fat at the maximum possible rate. If there are two sides to the energy balance equation—food in versus calories burned, then working only on the food intake side is like going into a fist fight with one hand tied behind your back. You could fight one-handed, but why would you want to? It's a disadvantage.

Exercise is also crucial for keeping the fat off. There's so much research backing up this point, even experts who only promote dieting for weight loss admit that exercise is vital for weight maintenance.

What types of exercise are best for cardio training?

The words cardio and aerobics are often used interchangeably, but when most people hear “aerobics,” they think of dance music, fancy choreography and jumping up and down in the latest trendy classes. Some people think of Kenneth Cooper, who coined the term and sparked the running craze of the 1970s. You can call it whatever you want, but to avoid stereotypes and keep your options open, we'll stick with calling it cardio.

Our definition of cardio is any exercise that's rhythmic in nature, involves large muscle groups (namely your legs), raises your heart rate and breathing, and which you can sustain for extended periods of time. The idea here is to pick an activity that has the potential to burn a lot of calories. You have plenty of choices.

Running or jogging outdoors

On the pro side, running is an outstanding cardio workout, the fat burning potential is extremely high, it's free, and it doesn't require any equipment. On the con side, running outdoors may not be possible, depending on where you live and what the weather is like. If you're a beginner, running may be too intense and if you're overweight or have orthopedic problems, running may be risky or unfeasible. Large volumes of endurance training, especially running, can also interfere with muscle mass and especially strength gains. If you enjoy running, ignore any naysayers and go for it, but keep the risks and benefits in mind.

Walking

Walking is an ideal form of cardio if you're overweight, a beginner, or you simply don't have the disposition for intense types of training. If you enjoy being outdoors and you have open space, parks, trails or long stretches of beach near your home, walking or hiking can be a real joy and your "cardio" won't feel like work at all. There are few downsides except that the intensity is low, so you don't burn many calories per minute. Push the pace if you want to burn more, but also remember that cardio doesn't always have to be intense to be helpful. You can burn a lot of fat walking if you do enough of it. Walk at least 40–60 minutes a day for best results. Do it all at once or split it into shorter sessions. A pedometer is a great gadget for tracking your steps.

Treadmills

Many people prefer the outdoors, but treadmills do have advantages. They're nice to have when the weather is bad, and you can't beat the convenience of having cardio equipment at home. Good treadmill decks are designed to flex, which reduces impact and injury potential. Treadmills also give you continuous feedback on their electronic consoles, including time, speed, distance and even heart rate. The calorie readouts on cardio machines are not always accurate, but if they let you input your bodyweight, it's a decent estimate. Most treadmills elevate to at least 10-12%. Walking briskly uphill can increase the fat burning potential and is a type of cardio almost anyone can easily do. Wearing a weighted vest can bump the calorie burn even more.

Stationary upright bicycle

Stationary cycling has moderate to high fat burning potential, it's superb for cardiovascular conditioning, and it's a killer leg workout. Cycling is non-impact, so the injury potential is low, but you must pedal vigorously or turn up the resistance to maximize the calorie burn. A client once complained he wasn't losing much weight, even though he was riding the bike an hour several times a week. I told him, "Try something a little more challenging than level 0." If you get bored easily, then bring an iPod or park your bike in front of a TV. Interval training can also make indoor cycling more engaging.

Stationary recumbent bicycle

Recumbent bikes offer all the benefits of upright bikes, plus one more: The ergonomically designed seat on a recumbent bike is sized and shaped to be more comfortable, to support your lower back and to reduce fatigue. This makes recumbent cycling a good option if you have lower back problems (or a bony butt!). Don't get too comfortable: Turn up the resistance and crank up the RPMs if you want to maximize the calorie burn.

Outdoor cycling

Outdoor cycling can be a great fat burner, especially if you ride hills or push the pace continually with little coasting. One long weekend ride can really boost your weekly calorie burn. Many people who prefer being outdoors find mountain biking or cross country cycling not only an excellent type of cardio, but a great hobby or sport. If you dedicate yourself to a physically challenging sport that you love—recreational or competitive—that can go a long way toward ending the struggle with body fat.

Stairclimbers

Stairclimbing machines can give you an intense cardio workout and they're excellent calorie-burners, making them ideal for fat loss. Avoid leaning on the handlebars or side rails because it lowers your heart rate and reduces the calorie burn dramatically. Stairclimbing machines provide a non-impact workout, although the repetitive motion could aggravate knee pain in people with pre-existing problems. The Stairmaster StepMill is a personal favorite of mine—it looks like a mini-escalator with a rotating flight of steps to simulate real stair-stepping. Killer!

Elliptical machine

Elliptical machines are similar to stairclimbers, except they use a circular stride instead of an up and down stride. This circular, no-impact motion may be helpful for people working around certain types of knee injuries. Ellipticals have increasing levels of resistance and ramps that let you vary the angle, similar to a treadmill's incline. Some machines also let you stride forward or backward or pump your arms. Because of all the different angles, the makers of elliptical machines often call them cross trainers. The fat-burning potential is moderate and may be high, but it's self-paced, so you must make a constant effort to maintain your speed.

Rowing

Rowing machines give you a superb cardiovascular workout with very high fat-burning potential. Rowing is a complete exercise, working all the lower body muscles as well as the upper body pulling muscles. Rowing is a non-jarring, impact-free activity, so it's a good option for people wanting relief from lower body joint pain. Always use perfect form and if you've ever had low back pain, use rowers with caution.

Cross country skiing

Cross country skiing has a very high calorie- and fat-burning potential because like rowing, it also involves the upper and lower body. Being a no-impact activity is another advantage. Cross country skiing machines are not found in many gyms, but they have a cult-like following. The

machine does involve a certain degree of skill and coordination, but if you stick with it through the learning curve until the awkwardness is gone, you'll be well rewarded.

Swimming

Swimming is a full body exercise that really puts your heart and lungs to the test. A great appeal for many people is the zero impact nature of swimming, which is as friendly to your joints as it gets. The calorie burn can be very high, but to translate into significant fat loss, you have to be able to swim long enough for the calorie burn to add up. An interesting debate raged for years about whether swimming was a poor fat burner because research and observation kept suggesting that body fat did not go down after starting a swim program. It was later discovered that exercising in water, especially cold water, can increase your appetite. This resolved the swimmer's body fat paradox and was another great example of how exercising more does not guarantee weight loss if you're not careful about your food intake.

Classes and boot camps

Group exercise and aerobic dance classes have been around for ages, but in the last decade, boot camps, kickboxing and cross training have all taken off in popularity. In many classes or boot camps, bodyweight exercises or conditioning drills are done nonstop in circuits, which is what makes the workouts cardiovascular in nature. Depending on the programming, the calorie burn can be extremely high. People who don't want to use cardio machines often find a happy home in these types of classes. If you do this style of training in conjunction with BFFM, I recommend finding a workout that's suitable as cardio and not as a replacement for traditional progressive resistance weight training.

Pick any cardio you enjoy and mix it up if you choose

You're not limited to this list, and you don't have to choose only one type of cardio—there are advantages to mixing it up. Constantly changing cardio programs at random can make it difficult to calibrate and track the source of results, but on the other hand, a change in cardio has been known to help break plateaus. Variety saves many people from boredom too. That goes for within the workout as well. There's no reason you can't pick three machines and do 15 minutes on each instead of 45 minutes on one. If you do a lot of cardio, it may also be wise to alternate days of high impact activities with days of days of low impact activities, or alternate high intensity cardio with low intensity cardio. This simple trick saves a lot of people from chronic joint pain and burnout.

Many different factions of the fitness world today seem convinced that their way of training is the best and some are bent on converting you. I believe it's a mistake to follow the crowd. Sometimes it's the most intense or the most trendy workouts that have the highest dropout rates. I believe those who keep their options open and pursue the training they enjoy the most will get the best results in the long run.

Frequency of cardio training (how often?)

How often you should train depends on your goals, your schedule and your desired rate of progress. Three days per week is a good starting point for almost everyone, because it's enough to enjoy health benefits, improve your conditioning and increase fat loss. I like to call three cardio workouts a week a baseline because you may do more cardio at times, but if you're committed to the fitness lifestyle, you usually won't do less.

If you're not highly active already, it's easy to increase your fat loss simply by increasing your training frequency. Suppose you burn 400 calories per workout, three times a week. That's a total of 1200 calories a week. If you increased that to six days per week at 400 calories per workout, you would burn 2400 calories per week. If all else remained equal, you've doubled your fat loss! That was a no-brainer, wasn't it?

What would happen if, in addition to increasing your cardio from three to six days per week, you increased the intensity so you were burning 600 calories per workout? With six workouts at 600 calories per workout, you'd be up to 3600 calories per week. You just tripled your fat loss!

Could accelerating fat loss really be as simple as adding more cardio sessions? Well, your body is deviously complex in the ways it can adapt or trigger compensation, and there's a point where doing more brings diminishing returns or becomes impractical. But if all else remains equal, the answer is yes—the more often you do cardio, the more calories you'll burn and the more fat you'll lose. When you multiply frequency with duration and intensity, you can accelerate your fat loss exponentially.

Let me put it this way: If I were overweight and I knew what I know now about fat loss, I would be doing cardio every day, possibly even twice a day, seven days a week until I was happy with my weight. Only then would I taper down to a maintenance program.

With that said, it's usually better to build up gradually. Many beginners try to do too much too soon, then they find themselves burned out or injured, especially if the cardio was intense or high impact. Start with at least three sessions per week and if your goal is maximum fat loss, progressively build up to five, six or seven days per week as your weekly results dictate.

BFFM frequency guidelines for cardio training	
For maximum fat loss	For maintenance, health and fitness
5-7 days per week	3-4 days per week

Duration of cardio training (how long?)

How long each cardio session should last depends a lot on the intensity. If your cardio is high intensity, the sessions can be shorter and you will still burn a lot of calories. If your cardio is low intensity, you have to go longer for the calorie burn to accumulate. If your goal is fat loss, 30–60 minutes is usually more than enough time to achieve the type of calorie expenditure you need. In some cases, like interval training, where the intensity is very high, as little as 20–25 minutes can generate a very respectable calorie burn.

If you want to build up to 60 minutes or more per day, you may, but you might consider splitting it up. For example; 30–45 minutes in the morning and 30–45 minutes in the evening is more doable for many people and multiple sessions might stimulate your metabolism more. Keep in mind the possibility of diminishing returns. At some point, it's better to tighten up your nutrition and train more efficiently in the same time you were already spending.

If you're doing an hour or more of cardio every day but you're not losing fat, you almost always have a serious nutrition problem. Double-check your food intake first because throwing more cardio at this kind of "plateau" is like bailing water faster when there's a gaping hole in the boat. Fix the damn hole first, then bail!

If you can burn more by extending the duration, then why do so many fitness gurus promote short workouts and criticize longer ones? Well, busy people need the most efficient workouts possible, and no one wants to waste time, so short, high intensity workouts are popular for good reasons. Unfortunately, another reason that minimalist workouts are popular is because they sell better. The body of your dreams in "just minutes a day, a few days a week," is a powerful sales pitch.

There's a big difference between efficient training and fitness marketing hype. If you can't tell them apart, you're in trouble. I'm not sure whether to laugh, cry or scream when I see other trainers advertising that their "super intense" 4-minute or 8-minute workouts are ideal for fat loss. Claims like these are ridiculous. No matter how hard you train, you can only burn so many calories per minute.

If you're a busy person, it's good to know that you can shorten your workouts if you increase your intensity. But if you shorten your workouts too much, you won't burn enough calories to have much impact on fat loss.

Granted, you shouldn't fall into the trap of mindlessly punching the cardio time clock either. It's easy to believe that all you need to do is log a certain number of minutes and you're guaranteed the fat loss you want. If the intensity is too low, your progress will be slow.

Your mission is to find that "sweet spot" in the middle where intensity times duration yields the highest calorie burn. I believe that sweet spot—which provides both efficiency and effectiveness—is around 20–30 minutes of high intensity cardio or 40–45 minutes of moderate intensity cardio.

If you're a beginner, it's okay to increase the duration gradually. Many of our members said that walking to their mailbox was a "workout" when they were obese. They didn't get discouraged. They simply did what they could and added a little bit more each time. Today, some of them run marathons or ride 100-mile bike races. (You can download MP3 interviews with dozens of Burn the Fat success stories at our online members-only community. Listening to inspirational audios while you do cardio is a great motivator and will remind you that every long journey starts with a single step: <http://www.BurnTheFatInnerCircle.com>).

BFFM duration guidelines for cardio training	
For maximum fat loss	For maintenance, health and fitness
40–60 minutes per session moderate	20–30 minutes per session
20–30 minutes per session intense	

Intensity of cardio training (how hard?)

You can always burn more calories by working harder in the time you have, but there is a catch. If you sprint, you burn an enormous amount of calories per minute, but you won't last long. If you pace yourself leisurely, you could keep going for hours, but you won't burn many calories per minute. If you want maximum fat loss, the trick is to work hard enough so you hit that sweet spot for maximum calorie burn.

One way to find your ideal training intensity is by heart rate. The "age-predicted" method has been recommended in fitness books for decades. You estimate your maximum heart rate (MHR) with the formula: 220 minus your age, then multiply your MHR by a target intensity range of 70–85%. Choose 70–75% for moderate, 75–80% for moderately hard or 80–85% for hard.

Here's an example: If you're 30 years old, your estimated MHR is 190. For a moderately intense workout, multiply the 70–75% intensity range by 190 and you get a target heart rate zone of 133–142 beats per minute (bpm).

During each cardio session, periodically check your pulse at your wrist or neck. The easy way is with 10-second counts. Simply divide your 60-second target heart rate by 6. If your target zone is 133 to 143 bpm, your 10 second count is 22–24. If you're below your target zone, raise the intensity by increasing resistance, speed or incline.

To monitor training intensity even more easily, many people invest in a heart rate monitor. A chest strap transmits your heart rate to a wristwatch or cardio machine, letting you check your heart rate continuously without interrupting your training rhythm. Serious athletes often do much more sophisticated heart rate training, but for fat loss or general fitness, this is all there is to it.

It's important to know that target heart rate formulas are only estimates. The classic 220 minus age formula can underestimate MHR in older adults and overestimate it in young people by as much as +/- 10 bpm. Many fitness pros have switched to newer MHR formulas. For example, the *Journal of the American College of Cardiology* published a new equation (the Seals formula) that decreases the margin for error at the age extremes: $208 - 0.7 \times \text{age}$.

If you really wanted to know your actual MHR, you'd need to do a maximal exercise test, either a field test or the treadmill stress test where an exercise physiologist hooks you up to a bunch of monitors and runs you faster and steeper until you cry uncle. There's still no consensus on an ideal way to estimate MHR, so use common sense about how the exertion level feels. If it feels ridiculously easy, then don't be afraid to increase the intensity. If it feels incredibly difficult, don't hesitate to decrease the intensity.

How to estimate training intensity with perceived exertion

Rating of perceived exertion (RPE) means that you guess at the intensity of your workout on a numerical scale. Even though it appears simplistic and is completely subjective, perceived exertion is surprisingly reliable. Basically, if you think your workout is “very hard,” like an 8 out of 10, it probably is.

The original RPE scale ran from 6–20 and corresponded to heart rates. That method is still in use, but most people find that rating exertion from 1–10 is easier and more intuitive. Based on the 1–10 RPE scale, a 4–8 would be the ideal target zone for steady state cardio and also for hitting that fat burning sweet spot—not too easy, not too hard.

Rating of Perceived Exertion (RPE)

0	Nothing (no work: sitting or lying)
1	very, very light
2	very light
3	light
4	moderate
5	somewhat hard
6	moderately hard
7	hard
8	very hard
9	very, very hard
10	Maximal (all out sprint)

Breathing and sweating as measures of exercise intensity

Breathing rate is another way to estimate training intensity. If you're not breathing heavily, you're not working hard. If you're so out of breath that you can't finish a sentence or hold a conversation, then your intensity is probably too high for steady state training (this is known as "the talk test").

Sweating, on the other hand, is not a good gauge for training intensity or calories burned. Sweat is simply your body's cooling mechanism, which gets turned on when your body temperature rises. Heavy sweating will lead to weight loss, but not fat loss. Water weight comes right back as soon as you re-hydrate.

The myth of the fat-burning zone: "long duration and low intensity to burn fat"

For decades, thousands of fitness experts have been giving the wrong advice about cardio intensity. To this day, the wrong advice is still printed on most cardio machines. It's the myth of the "fat burning zone," which suggests that if your intensity is too high, you'll burn more sugar than fat. To burn the most fat, the myth continues, you should train at a low intensity for a longer duration.

The reason so many people get this wrong is because they misunderstand "substrate utilization"—the difference between the type of fuel burned and amount of fuel burned. It's true that you burn a greater percentage of calories from fat when you train at a low intensity. The problem is, if you intentionally slow down and train at a lower intensity, you don't burn as many calories.

If you followed the “low intensity is the best fat burning zone” theory to its logical conclusion, then you would want to sit on your couch or sleep all day long, because that’s as low in intensity as it gets, and you burn the greatest percentage of fat while you’re at rest. Obviously, that won’t work out too well because couch-sitting doesn’t burn much of anything. Ironically, since your body is always burning a mix of carbs and fat, not one or the other, when you burn more calories training at a higher intensity, you often end up using more fat for fuel anyway.

Worrying about the type of fuel you burn during your workout is also only focusing on the short term effects. If you train for an hour, what about the fuel you burn the other 23 hours of the day? What if you burn more carbs during your workout and you burn more fat the rest of the day, or vice versa? The amount of fat burned often evens out. At the end of the day, what matters the most is the total amount of calories burned. At the end of the week, what matters is whether you actually lost body fat or body weight.

Here’s the bottom line: Low intensity cardio doesn’t burn very many calories. That’s why moderate to high intensity is the real ideal fat burning zone. If you want to do low intensity cardio, you certainly can, but you have to do a lot more of it to get the same results.

High intensity interval training (HIIT) for time-efficient fitness and fat loss

If you wanted to burn the most calories possible, the way to do it would be high intensity and long duration. The problem, of course, is that intensity and duration are inversely related, or as they say, you can’t sprint through a marathon. You can’t even sprint for 10 minutes. An all out sprint will last only seconds, and a near maximum sprint may last only a minute or two. There is a way, however, to combine higher intensity with longer duration and it’s called high intensity interval training (HIIT).

HIIT allows you to accumulate a larger volume of high intensity work in a single session by alternating between short high-intensity work intervals and short lower-intensity recovery intervals. During the work interval, you push yourself above your normal training zone to the point where you start getting out of breath. During the recovery interval, you reduce the intensity enough so you reclaim the oxygen debt just in time to do another intense burst.

You can adjust the number of intervals, length of intervals and the work-to-recovery ratio based on your goals and fitness level. Beginners might start with 6–8 rounds and work up to 10–12 rounds. The interval length can vary from 10–20 second all-out sprints to sub-maximal, but still intense 60- to 90-second bursts. You could make work intervals longer, but you’d be sacrificing intensity. Longer recovery intervals make it easier; shorter recovery intervals make it harder. For

example, 60 seconds work followed by 120 seconds recovery (1:2 ratio) is easier; 60 seconds work followed by 60 seconds recovery (1:1 ratio) is harder.

For fat loss goals, the duration needs to be long enough so the calorie burn adds up, but you can get an effective fat loss workout with as little as 20 minutes of intervals. That makes HIIT one of the most time-efficient types of cardio and a favorite for busy people. For cardiovascular conditioning, some types of HIIT are amazingly effective, even when the workouts are shorter.

You can do HIIT training on any type of cardio machine. You can also do HIIT running outdoors or with various body weight exercises or conditioning drills. There's no single best way, so be open-minded, experiment, and see what works best for you.

For fat loss, the classic HIIT workout is 8–12 rounds with 60-second work intervals and a 1:1 work to recovery ratio.

Classic fat loss HIIT workout:

Warm up for 3–5 minutes steady state at a low RPE

Work interval: Perform one minute of very hard work at 8–9 RPE

Recovery interval: Perform one minute of light to moderate work at 3–4 RPE

Repeat for 10 work intervals

Cool down for 3–5 minutes at a low RPE

Total workout time: 26–30 minutes

Hill running, stadium stepping and sprint intervals

When you're ready for a real challenge, try running stairs. I often have access to a university stadium with a straight flight of 52 steps. Sprinting up takes about 10 seconds; walking down about 30 seconds. That didn't come out of an exercise science book; it's simply how long it takes me to run those steps. But it fits within common recommendations for short sprint intervals. I warm up first, usually starting with walking, a slow jog, and then a run up, before sprinting; usually 10–12 rounds. Athletes have been known to do a lot more, your intensity drops as your legs get fatigued, so go for quality, not just quantity.

If you wanted to top off the calorie burn to stimulate more fat loss, you could finish with a walk or jog around the track (high intensity cardio followed by low or medium intensity cardio). Running stairs is also an amazing leg workout. Bodybuilders and figure athletes love it because they say it brings out the muscularity in their legs. Jogging up flights of stairs in a high rise is another option if you don't have access to stadium steps.

No stairs? Hills get the job done too, and may give you even more flexibility in the duration of your intervals because hills come in all sizes. Grassy hills are nice when available, as they spare you some of the impact from running on pavement.

Running hills has a built-in safety factor too. Writing for StaleyTraining.com, Coach Steven Morris says, “Even an athlete with horrendous running form will be safe running hills. This is because the hill does not allow athletes to over-stride nor does it allow them to reach top speed, both major factors in hamstring injuries.”

No stairs or hills? Sprint intervals on a level track, field or beach are popular too, but be sure to warm up fully and play it safe, because pulled hamstrings are no fun. Because all types of sprint interval training are so intense, once or twice a week is all it takes. If you’re also weight training, any more is overkill.

Running stairs, hills or flat sprints are advanced workouts. Beginners need to slowly build up to it. If you’re overweight, it may be a challenge just to walk up stairs, let alone run, not to mention it might be too stressful on your joints. But as you get lighter and fitter, it’s a challenge you might work toward. I know a man named Jon from Chicago who was at one time morbidly obese—340 pounds with a whopping 60-inch waist. He lost 150 pounds and then started running the Willis tower (formerly Sears tower) and other skyscraper races. If he can do it...

How high intensity training activates “the afterburn effect”

Here’s another benefit of doing some of your cardio sessions with intensity: it can boost your metabolism for hours after the workout is over. This is commonly known as the afterburn effect. The scientific term is excess post-exercise oxygen consumption (EPOC). This means you could literally be burning extra fat all day long as you sit at your desk.

Low intensity training doesn’t stimulate much EPOC. The higher the intensity and the longer an intense workout is sustained, the higher the EPOC. According to Wilmore and Costill in *Physiology of Sport and Exercise*, the EPOC after moderate training (75–80%) is approximately .25 kcal/min. If the afterburn lasted for five hours, that would be an extra 75 calories burned after the workout is over. That’s not Earth-shattering, but if all else remained equal, that would burn an extra pound of fat every 10 weeks.

When the training intensity is high, that’s when it gets really interesting. In a recent study from Appalachian State University, researchers had subjects pedal on a bike for 45 minutes nonstop. The intensity was about as high as it could go for steady state training—around 85% of MHR.

They measured an increase in metabolism that lasted 14 hours after the workout ended, including while the subjects were sleeping. The EPOC accounted for an extra 190 calories burned.

The HIIT vs steady state cardio debate

HIIT has received a lot of press about being superior to steady state cardio. In some ways, it is. HIIT burns a lot of calories per minute, boosts metabolism after the workout and stimulates the most cardio-respiratory improvement. HIIT is engaging, so it's a boredom-buster, and for time efficiency, you can't beat it. However, HIIT has pros and cons, and the benefits of brief HIIT workouts—especially for fat loss—are often oversold and exaggerated.

First, the afterburn is not as much as many people think. It's a myth that HIIT burns more calories after the workout than during the workout—not even close. The research shows that the majority of calories burned occur during the workout itself, so that's what you should focus on. Furthermore, very brief HIIT workouts don't have the highest afterburn. As the research demonstrated, EPOC increases with the duration, not just the intensity.

Second, the promise sounds glamorous—burning more in less time—but a lot of people don't realize that properly performed HIIT can be brutally hard work. It's not for beginners, the unfit or the faint of heart. People with injuries or certain health conditions often can't do it even if they want to.

Third, interval training is not necessarily better for fat loss than steady state cardio. The best fat loss workout is the one that burns the most calories. It's also a misconception that steady state workouts are always low intensity. Intensity is a range, not two settings—high or low. Moderate and hard steady state cardio can burn an enormous amount of calories, if you can keep it up for 40–45 minutes.

Fourth and finally, you can easily walk or do moderate cardio every day, but unless you're a genetic superior, you can't do maximum intensity cardio every day and recover from it properly. Too much intense training will burn you out. Your legs are especially susceptible to overtraining when HIIT is combined with weight training. Most experts recommend only two or three HIIT sessions a week.

Is there a best time of day to do cardio?

The best time of day for cardio or any other type of training is the time you feel most physically energetic, most mentally focused, most motivated and most likely to make it a habit and stick with it. The way I see it, all other considerations are secondary, even if there's scientific

evidence of benefits from training at specific times. Your daily training schedule is one of those personal things where it's best to listen to your body and keep practical considerations in mind.

It's worth mentioning, however, that a large percentage of people have had great success training in the morning. Many of the benefits may be behavioral or psychological. Taking positive action in the morning starts your day on the right foot and makes you feel good all day long. This may help you stick with your plan the rest of the day because you'll want to stay consistent and keep the momentum going.

It's easy to blow off evening workouts when you're exhausted from work. When you train at the beginning of your day, your workout is already out of the way. And remember, no matter how busy you are, you can always make time for training by getting up earlier in the morning.

Cardio fed or fasted?

Many bodybuilders believe that cardio on an empty stomach helps them get leaner. The preferred time is first thing in the morning after the overnight fast. One hypothesis for why it might help is that fasted cardio should allow for higher levels of lipolysis and then presumably greater oxidation of fat. This idea has been controversial for as long as it's been popular. The real question is, how much does fasted cardio affect body composition from week to week? We would need more research to know for sure.

In the meantime, it's interesting how many bodybuilders and figure athletes have been swearing by fasted cardio for decades and continue to do it today with visible success. There may be a reason. Bodybuilders are already lean, and when you're already lean and want to get even leaner, arguably, every little training and nutrition detail counts. It's possible that fasted cardio could help in this case, with releasing and burning those final deposits of stubborn fat.

If you're debating whether to eat before a morning workout, there are a few factors to consider. One is intensity. Most people have more energy, feel better mentally and perform better physically when they have some fuel in them. If you're lifting weights or doing intense cardio in the morning, it's probably ideal to have one of your meals beforehand. If you must train immediately at the crack of dawn and don't want a full meal sloshing around in your stomach, you could have least have a light meal, a snack or a protein drink and then have your first full meal after training.

If your morning workout is only cardio, most people have no problem doing it fasted before breakfast, as long as the intensity is not too high. (A cup of coffee helps too!) Low or moderate intensity cardio isn't that stressful and doesn't require that much energy, so the risk of muscle

loss is low. Taking in a small serving of protein beforehand is a trick that many bodybuilders use, and they believe this “semi-fasted” cardio helps reduce any risks even more.

Does cardio make you lose muscle or strength?

There has been a lot of research about the interference effects between strength training and endurance training. It's very clear that your body can't achieve maximum results in both endeavors concurrently because many strength and endurance adaptations in muscle fibers, organelles, hormones, enzymes and capillaries are antagonistic to one another. It's unlikely that you'll ever see a marathoner win a bodybuilding contest. To excel at one sport, the training demands must be specific to that sport's goals. This is why so many strength athletes are conservative about cardio and some even shun it. But does cardio always interfere with weight training? Will cardio make you lose muscle? What about people whose primary goal is fat loss?

Research plus real world results from competitive bodybuilders suggests there's plenty of room for both. Weights are the first priority, but most bodybuilders integrate cardio in small amounts year-round and in larger amounts before contests. The cardio is instrumental in helping them achieve peak condition, and they have no problem maintaining their muscle mass as they get ripped.

In moderation, cardio might even enhance muscle development. Cardio helps increase nutrient clearance from the blood and uptake into the cells. It can increase capillary density, which enhances delivery of oxygen, nutrients and hormones to the muscles. It also helps remove waste products from working muscle tissue. As your cardiovascular fitness improves, you can recover faster from weight training. And of course, if you ever felt yourself sucking wind after a set of squats, then you can appreciate the role of good cardio in a strength training workout.

With moderate amounts of cardio, muscle loss shouldn't be a concern at all. If your cardio volume is so high it looks more like an endurance athlete's regime, you may be compromising some strength and it will pay to monitor your lean body mass more closely. High volume endurance training while on a very low calorie diet can be especially catabolic, and has been known to cause metabolic adaptations even more severe than starvation dieting alone.

Cardio before weights, after weights or in a completely separate session?

When you schedule your training is completely up to you. Timing is totally secondary to training consistently and achieving your calorie deficit consistently. In a perfect scenario, however, there are advantages of doing cardio and weight training in separate sessions or at least doing cardio after weights in the same session.

Research at the University of Victoria in British Columbia found that weight lifting performance suffered not only right after doing intense cardio, but up to 8 hours afterward, especially for the legs. It's tough to do cardio after an intense leg workout and even tougher to do a leg workout after intense cardio. If you separate cardio and weights, fatigue won't get in the way as much. The fresher you are at the start of each workout, the stronger you'll be and the harder you can train.

Sometimes, however, what's optimal on paper is trumped by personal preference and practical considerations. Many people feel fine doing cardio right after weights, not to mention that schlepping to the gym twice is an inconvenience. So if you do cardio and weights in the same session, which should come first? The answer is, whichever is the higher priority. On BFFM, maintaining muscle is the top training priority, so weight training goes first, and cardio second.

Cardio periodization: The fat loss secret of champion physique athletes

Despite the promise of leaning out faster, there seems to be, if not a loathing of cardio due to the time, effort or boredom involved, then certainly an irrational fear that too much cardio will do bad things to you. The fact is, the human body is a remarkable machine, and at least for short periods, can perform a lot more work than most people give it credit for. Almost all the negatives you hear about cardio are related to long periods of high volume training, without proper recovery periods in between, compounded by inadequate nutrition.

Getting all the positives that cardio has to offer, without the negatives, is mostly a matter of doing more cardio when you need it and less when you don't. In the weightlifting world, cycling intensity, volume and other training variables is known as periodization. Why more people don't apply this concept to cardio training is a mystery to me. Doing hard cardio for hours every day or seven days a week, month after month, year after year, is unnecessary and may lead to overuse injury, suppressed immunity, overtraining, mental burnout or aerobic adaptation. Adaptation can be a particularly thorny problem.

To a certain degree, adaptation is a normal part of getting in shape. The more you train, the more efficient you get at doing the workouts, until you eventually need a more challenging workout to keep improving. But if you never periodize your cardio training, you may adapt at a very high volume. At this point, if fat loss slows down, most people are tempted to keep adding more and more, until finally they find themselves trapped in a vicious cycle, feeling like they need an hour or two of cardio every day just to maintain.

Endurance athletes can thrive on higher sustained training volumes because they eat so much to support the training. And like all smart athletes, they also use periodization. Slashing calories and carbs and trying to do hours of cardio a day under that kind of energy restriction is where

problems usually occur, but some people never scale back on cardio and they're afraid to eat. This is especially common with female physique athletes, as well as aerobics instructors who teach multiple classes a day.

Competitive bodybuilders are the true masters of peaking their physiques for a deadline and doing it better and better, year after year throughout their careers. Cardio periodization is one of their secrets. There's a maintenance phase (athletes sometimes call it an off season) and a peaking phase (the pre-contest season). During the maintenance phase, you do less cardio and during the fat loss or peaking phase you do more. Then you cycle back to maintenance. With each successive peaking phase, you shoot for a new all-time best condition.

You don't have to be a bodybuilder to use this strategy. Once you've achieved your target weight and body fat level, don't stop doing cardio, but don't continue blasting away for hours either. Slowly downshift into a maintenance phase. Once or twice a year, if you want a challenge, ramp it up again and go for a personal best. Need motivation? Enter one of our Burn the Fat challenge body transformation contests. Learn more at www.burnthefatinnercircle.com.

“Burn more” is better, but let your results dictate your approach

When being introduced to BFFM and the “burn more” philosophy for the first time, it's not uncommon for readers to misinterpret my enthusiasm for cardio as implying that “more is always better.” Considering the magnitude of the obesity problem and how profoundly sedentary most people are, more usually is better. But this is only true as far as it remains practical, effective and in alignment with your goals. What I'm really recommending is being willing to do what it takes to get the results you want at the speed you want them, and most importantly, to “know thyself.”

For strength athletes, the best amount of cardio might be the least you can get away with. Physique athletes know they need more cardio before contests, but not so much in the off season. Endomorphs usually understand that they do better with more cardio all-around. Short, petite or small-framed women often realize they need more cardio than men because smaller bodies have lower metabolisms, so it's harder to get a large deficit from diet alone.

One size doesn't fit all. This chapter has given you everything you need to create your own program. Ultimately, fall back on old faithful: the feedback loop method. Let your results dictate your approach. If your fat loss is too slow, crank up the cardio. If you're hitting your weekly goals with only a few cardio sessions a week, no increase is needed. In fact, unless you have a legitimate deadline looming, it's best to do the minimum necessary and save the extra cardio for the peaking cycle or for breaking plateaus later down the road. It's always good to have an ace in the hole and cardio should be one of yours.

Chapter 17: Weight Training Secrets to Burn Fat, Build Muscle and Reshape Your Body, the Physique Athlete Way

“If you could have only one reason to make strength training part of your fitness life, you might try this fact: It is the only way to reshape your body. Attempting to transform a body with cardio alone is futile.”

—Shawn Phillips, author of *Strength for Life*

“As you increase your lean body weight, your metabolism also increases, both during training and at rest. This is why dieting alone is not an effective means to losing fat.”

—Fred Hatfield, Ph.D., author of *Bodybuilding, a Scientific Approach*

Lift weights, drop fat

It would be far beyond the scope of one chapter to teach you everything there is to know about weight training. Case in point: Arnold Schwarzenegger wrote a book on the subject called, *The Encyclopedia of Modern Bodybuilding*. It's 736 pages long with 850 photographs! Former Mr. Universe Bill Pearl also penned a hefty volume on weight training exercises with 638 pages, called, *Keys to the Inner Universe*. Pearl's book is so detailed, it has 151 exercises for the biceps alone! As an exercise science major in college, I spent an entire semester on weight training, and even that didn't scratch the surface.

Weight training is a deep subject and it would take another book to do it justice. However, no fat loss program would be complete without covering weight training basics, because it plays such a crucial role in getting leaner. That's surprising to most people, who think only of diet and aerobics when they think of fat loss. A bodybuilder or strength athlete doesn't need any convincing to make weights the highest training priority. But most people with weight loss on their minds might think this doesn't apply to them. It's time to change that.

In this final chapter, you'll learn the most important weight training fundamentals they might teach you in school, as well as secrets from the trenches, usually only known by the best physique champions. You'll discover not only how to burn the fat, but how to transform your body shape completely.

Synergy: The secret to exponentially faster fat loss

“It's 80% diet” is a common weight loss cliché. It may not be entirely accurate, but I understand why people say it. It's fair to say that nutrition is the most important element for weight loss because even if you have a perfect training program, you won't lose weight if you don't have a calorie deficit. The entire success of a weight loss goal hinges on getting that one nutrition detail

right. But if your goals wisely extend beyond mere weight loss to permanently improving your body composition, then weight training is an equally vital part of the formula.

There are four major elements in BFFM: Nutrition, weight training, cardio training and mental training. The secret to better body composition is not any one of the four elements, it's the combination of all four disciplines put together, which become far greater than the sum of their parts. That's known as synergy, and it means that $1 + 1 + 1 + 1$ might not equal four, it might equal forty or four hundred! When balanced properly, each element complements and enhances the others. The best example is the powerful phenomenon called partitioning, which is what happens when you combine proper nutrition with weight training.

The law of energy balance says that if you're in a surplus, the excess calories will be sent into fat stores. That's more or less true in a couch potato. The law of energy partitioning says that if you're in a surplus, but you're weight training, some of those excess calories will be sent to the muscles for repair and growth. Imagine two people following the same hypercaloric meal plan. One is lifting weights and the other isn't. The one not lifting weights gets fatter. The one lifting weights not only doesn't get fatter, he gets more muscular by eating more!

This partitioning of calories and nutrients is even more interesting in the other direction. Two people go on the same hypocaloric meal plan. One person is lifting weights and the other isn't. Since energy balance is a law of physics that cannot be violated, you know they're both going to lose weight right? Yes, but what kind of weight will they lose? The person not lifting weights loses lean body mass. The person lifting weights loses fat and keeps his lean body mass – he might even gain a little.

Two people. Same diet. Totally different results. This is more proof that body transformation goes far beyond calories in versus calories out. It's what your body does with those calories that counts.

Weight loss is a function of energy balance. Body composition is a function of energy partitioning. Your food choices can affect partitioning. So can genetics and hormones. But the biggest influence of all on partitioning is weight training. Wouldn't you like to see the food you eat get delivered to muscle cells for growth and recovery instead of being stuffed into your fat cells? Combine good nutrition with intense weight training and that's exactly what happens.

How weight training helps you get leaner

Outside of bodybuilding, where this is common insider knowledge, the average person think far too narrowly about weight training. Their minds are filled with stereotypes and assumptions, which lead to beliefs and rationalizations about why they don't need to lift weights. Not only

have they never even heard of energy partitioning, not only are they obsessed with scale weight and uneducated about body composition, they think weight lifting is only good for gaining strength and muscle. Lifting is only for football players, wrestlers, and bodybuilders, right? Wrong. Lifting is for anyone who wants to burn the fat.

One reason that weight training increases fat loss is obvious, but almost always overlooked: it burns a lot of calories. It's entirely possible for your weight training to burn more calories than cardio, especially if you do a lot of energy demanding exercises like squats and deadlifts.

An even bigger surprise to many people is the metabolic boost. The afterburn effect of EPOC is starting to become mainstream knowledge, often written up in popular fitness magazines, but when most people think of afterburn, they only think of interval training. The truth is, weight training can produce an equivalent, if not greater metabolic boost than cardio! Not only is there a significant amount of EPOC, there's also a very high energy cost for repairing muscle and building new muscle.

And those are only the short-term effects. There's also the long-term metabolic boost you get from increasing your lean body mass. The number of calories you burn at rest is directly proportional to the amount of lean body mass you carry, so the more lean mass build, the higher your metabolism.

Why weights should be training priority #1 in every fat loss program

For years, weight training was like Rodney Dangerfield – it didn't get any respect. Weight lifters were viewed as weirdos or freaks. Athletes were encouraged not to lift weights. Just one generation ago, it was thought that weight training made you muscle bound, slowed you down and raised your blood pressure. At one time, even the medical establishment suggested avoiding weight training in favor of aerobics.

Today, all world-class athletes do serious weight training. Every pro sports team has a strength and conditioning coach. Doctors now recommend weight training for cardiovascular health, improved bone density and even overcoming depression. In 1990, the American College of Sports Medicine released an updated position stand stating that weight training decreased cardiovascular risk factors and was actually good for your health all along.

It was great news for the bodybuilders when the scientific, medical and athletic communities began to support weight training, except for one thing. In perfect character with the notoriously fickle, flip-flopping fitness industry, many strength training gurus started taking the other extreme, suggesting that weight training is the only kind of training you need and that cardio was worthless or some kind of evil muscle-devouring monster.

There's no question about it – you'll improve body composition far more with weights than you will with cardio alone. If you go overboard, cardio can even interfere with strength, power and muscle mass gains. However, in the right amounts, cardio and weights not only get along well together, they are great companions, producing the most rapid fat loss and dramatic body transformations humanly possible.

Answers to the 25 most frequently asked weight training questions of all time

Even if you have no aspirations of being a bodybuilder, by now you should be convinced that weight training is your friend and eager to learn the best ways to do it. Weight training can be a confusing subject at first, because the field is full of contradictory advice. For that reason, I decided that the best way to cut through confusion, clear up myths and explain weight training principles in the least amount of space would be a frequently asked questions (FAQ) list.

What you'll read next is the master list of 25 of the most frequently asked questions I've received from all my clients, customers and readers over my many decades as a bodybuilder and fat loss coach. After the FAQ, I'll show you how to set up training routines and customize them so they fit your schedule and level of experience best.

FAQ #1: What if I don't have time to do cardio and lift weights? Can't I just do cardio?

Weight training is the one type of training you never compromise. If time constraints or any other reason ever force you to choose one or the other, always prioritize the weight training. With that said, please allow me to step on my soapbox for a moment to speak about time. There are two issues, expectations and priorities.

First, you need to set your expectations realistically and understand the time and effort price that must be paid for every type of goal. If you're aspiring to become a bodybuilder or fitness competitor, or just look like one, the time commitment is high. You don't get a body like figure and fitness legend, Monica Brant, or natural bodybuilding legend Skip Lacour from "just minutes a day" in the gym. Bodybuilding and weight loss advertising has skewed our perceptions. Ask the champions what it really takes. They'll tell you that physiques of bodybuilding stage or fitness model caliber come from many hours of hard work in the gym – sometimes even two training sessions a day most days of the week for many weeks before competitions or photo shoots.

If you're simply lifting for health and fitness and your number one goal is fat loss, your time commitment could be much more modest. There are ways to make weight training more time efficient, the same way that cardio training can be made more efficient. But there are no shortcuts. If you cut down on time, you must make it up in intensity. One way or the other, you have to pay the price for achieving every goal.

Second is the issue of priorities. “I don’t have time” is the #1 reason for skimping on training, but it’s not a valid reason, it’s an excuse. We all have the same 168 hours a week, but some people get in shape and some people don’t. It’s not because some people have more time than others, it’s because some people are better at prioritizing than others. They make time. Many of my coaching protégés get up at four or five in the morning because it’s the only time they can train. The rest of their day is full with work and then family commitments.

Successful people use every hour wisely and never fritter their time away on meaningless activities or relationships. Paradoxically, it’s often the busiest people in the world who get more done than anyone else, because their schedule forces them to become masters of prioritization and productivity. You’re being honest with yourself if you say, “Other things are higher priorities right now,” but you can’t honestly say, “I don’t have time.” So henceforth, pledge to never make that excuse again.

FAQ #2: Shouldn’t I lose all the fat first, then start weight training later?

Even if you have a lot of fat to lose, you can still benefit tremendously by starting a weight training program, as long as you’re physically able to do it safely. Many people lose the weight with diet alone or diet and cardio, but they’re not as happy with their bodies as they thought they’d be. Their bodies look soft and un-athletic. They fit into smaller clothes, but they still don’t want to be seen out of clothes. Of course, it’s never too late to start, but wouldn’t it have been better to lift weights from day one?

If you knew that you could burn as many, if not more calories with weight training than with cardio, would you do it? If you knew that weight training could help reduce the risk of muscle loss, but cardio can’t, would you do it? If you knew that a lower metabolism would mean increased risk of weight loss plateau and weight training could prevent it, would you do it? And if you knew that people who train with weights are less likely to relapse, would you do it? Of course. There is every reason to include weight training in a fat loss program, right from the start.

FAQ #3: Do I have to join a gym or health club?

The best place to train is the place where you’ll train consistently and get the best workouts. I started working out in my parent’s garage at the age of 14 with nothing more than a barbell set, some dumbbells, an adjustable Joe Weider bench, with a leg curl/leg extension attachment, a squat rack and an Arnold Schwarzenegger book to guide me. I worked out in that garage for the first six months, then I joined a gym. I’ve been training in gyms ever since because I get the best workouts that way. I prefer training in serious gyms for the access to all the equipment and for the motivational atmosphere.

The major benefits of home training are convenience, privacy and saving money you would have spent on gym memberships. If the convenience of training at home helps you stick to your training program better, and you prefer the privacy, then train at home. Some of the exercises listed in the BFFM training programs require gym equipment, but it's easy to make exercise substitutions and basic free weights are all you need to start.

You can do hundreds of exercises with nothing more than dumbbells. Add a barbell set and a bench that's fully adjustable (from flat to inclined to vertical) and you can do hundreds more. If you have the space, the next equipment you'd want in your home gym would be a power (squat) rack with a pull-up bar and a cable-pulley machine with a low and high pulley. You'll get more bang for your buck with that simple set up than all the stuff they sell on late night infomercials put together.

FAQ #4: What if I don't want to get bulky or look like a bodybuilder?

Most bodybuilders, including myself, would love to have more muscle size, but we're still working on it after years, because gaining muscle is a slow, difficult process. Only the most genetically gifted (mesomorph) people gain muscle size quickly and easily. Gaining muscle size is even more difficult for women, who have less of the muscle-building hormone, testosterone. Despite my reassurance, most of the women I've coached (and some of the men) have still been worried about getting "bulky" muscles.

This fear of getting too big usually comes from seeing pictures of professional bodybuilders in the magazines. It's unfortunate, but many pro bodybuilders take anabolic drugs. That includes the women. If you've ever seen pictures of female bodybuilders with massive, masculine-looking muscles, the odds are high that they were using steroids, hormones, or other muscle enhancing chemicals.

Unless you're a genetic freak or you're using drugs, you're not going to get too big from weight training. You're also not going to wake up one morning and notice that you've sprouted massive bulk overnight. The process occurs slowly, and you're in total control of it once you master nutrition and training. If you ever reach the point where you have all the muscle you want, it's easy to change your training style to get the look you want.

FAQ #5: What if I stop lifting – won't the muscle turn to fat?

If you stop lifting, your muscles will shrink (atrophy), but they will not turn into fat. Muscle can't change into fat because fat and muscle are two completely different types of tissue. If your muscles shrink from disuse and your body fat increases from eating too much, it can appear as if the muscles have "turned to fat."

Elite athletes often practice, train and compete for hours every day, burning staggering amounts of calories. When their athletic careers end, their activity levels drop, but nutrition habits die hard. If former athletes continue eating the same amount of food, they instantly create a calorie surplus and start gaining fat. This often leads observers to assume their muscles “turned to fat” purely because they stopped working out.

The goal of this program is to help you develop good habits, a long-term perspective and a new lifestyle. Don’t ever stop training and you’ll never have to worry about shrinking muscles and increasing body fat. If your activity level ever does drop suddenly due to lifestyle change or injury, it’s very important to re-calculate your calories based on your new activity level and adjust your food intake.

FAQ #6: I don’t want to get muscle bound – won’t lifting reduce my flexibility?

Weight training does not reduce flexibility; inactivity reduces flexibility. If you perform weight training exercises through the full range of motion, this can actually increase your flexibility. Some particularly massive bodybuilders may lose range of motion, but that’s the exception, not the rule. I’ve seen male bodybuilders with huge muscles, weighing 230 solid pounds or more do full splits. So much for the “muscle bound” myth.

If you still have any doubt about the effect of weight training on flexibility, attend or watch a video of a professional fitness show like the Fitness Olympia. The competitors are among the most flexible athletes in the world, even though they train with weights every bit as hard as the bodybuilders.

If increasing flexibility is one of your fitness goals, then add stretching to your program. An easy way to fit stretching into your routine with no extra time commitment is to stretch in between sets. Otherwise, devote some time for stretching after your lifting sessions.

FAQ #7: Should women train differently than men?

It’s not uncommon to see books or programs about training for women. Usually they use words like “sculpting,” “shaping”, or “toning.” That appeals to women and if it gets more women involved in weight training, that’s great. But technically, there’s no such thing as “toning.” Muscle development is muscle development and it happens in women the same way it happens in men. Women may have different goals than men, and if they do, their workouts may be different. But if a woman has the same goals as a man, she should train the same.

Technically, there are no men's exercises and women's exercises – that's just the perception created through fitness marketing. Women can and should squat, row, press and deadlift, just like men, and they'll be rewarded with many times greater results training that way than if they pursue some kind of dainty toning exercises with three-pound pink dumbbells.

FAQ #8: How long should each workout last?

You can get an effective and very complete weight training workout finished in 60 minutes or less. When it comes to intense training, more is not better. If the workouts are too long and you can't recover, there could actually be negative consequences. Too much high intensity training is a stress on the nervous system and training beyond an hour has been linked to decreased growth hormone and testosterone and increased cortisol.

If your workouts are taking too long, you could re-design your split routine so you train fewer body parts each workout or you could decrease your volume (number of sets and exercises), while maintaining the intensity. Using techniques for time efficiency, such as supersets or decreasing rest intervals (density training), busy people can get excellent results in as little as 30-45 minutes.

FAQ #9: How often should I train?

How often you train will depend on your goals, your genetics, your level of experience and your weekly schedule. There's no single ideal training frequency. Beginners and intermediates usually train three days a week. Advanced training is usually four or five days a week.

Unless you're an advanced bodybuilder on a one body part per day routine, a genetic superior or you have a high recovery capacity, it's usually ideal to avoid intense training more than two or three days in a row. Taking complete rest days allows systemic recovery to take place, so that not only each individual muscle can fully recover, so can your entire body.

If you're enthusiastic and energetic enough to be tempted to train every day, keep in mind that your muscles don't grow during your workouts, they grow after your workouts. But if you don't allow sufficient recovery time between body parts, your muscles can't repair themselves. At best your progress stagnates. At worst you get overtrained or injured.

Alternating stress with recovery is the name of the game in building muscle. The goal is to train hard, then get out of the gym and let your muscles rest.

BFFM Frequency guidelines:

- Beginners: Three workouts per week on nonconsecutive days, full body each workout
- Intermediate: Three or four workouts per week on two day split routine; half the body one day, half the next (each muscle group worked no more than twice per week)
- Advanced: Four or five days per week, on a three or four day split routine, each muscle group worked once every five to seven days.

FAQ #10: How many sets should I do?

The debate over how many sets has raged for years. Most experts argue for multiple sets, but some claim that one set taken to absolute failure is all it takes. The one set to failure idea is attractive for the same reasons as ultra- brief cardio workouts. After all, who wouldn't want to get more from doing less? By promoting a controversial method that claims to give more results in less time, marketers get more attention, and sell more books or training courses.

When I was starting out in bodybuilding, I read all the “one set to failure” high-intensity training books and I followed their instructions to the letter. It didn't work nearly as well as multiple sets. I got stronger, but there wasn't as much difference in my physique.

It's possible to make progress with one set per exercise if the intensity is high enough. However, recent research as well as real world results, strongly support multiple sets as the optimal approach. If you look at the training programs of top physique competitors, you'll discover that almost all of them use multiple exercises and multiple sets – usually two to three exercises for three sets per exercise.

Why three sets per exercise? Physiologically speaking, you simply can't activate and fatigue enough muscle fibers to trigger maximum growth with a single set, but on the other hand, you don't need to do more than necessary to stimulate adaptation. Practically speaking, you don't want to spend all day in the gym. If you can stimulate optimal results in under 60 minutes, then that should be your objective. You simply adjust your volume (number of sets, exercises and rest periods) according to the amount of time you have.

In general, you can't go wrong with three sets per exercise, but this guideline is not set in stone. There's no reason you can't do two sets or four sets on an exercise. Five sets of five is actually one of the most popular strength workouts ever.

Beginners would be wise to start with fewer sets and build up. A good plan is one set your first week, two sets your second week, and then three sets your third week. This break-in period gives a beginner's body time to acclimate to the new type of stress and helps prevent excessive muscle soreness.

The total number of sets in a workout can also vary based on the body part. Larger muscle groups can handle more volume. The back and legs for example, could easily handle ten or twelve sets per workout on advanced programs. The biceps, a very small muscle group, could be thoroughly worked with as few as five or six sets.

BFFM set guidelines for split routines:

Advanced:

Large muscle groups: 9–12 sets per body part

Small muscle groups: 6–9 sets per body part

Intermediate:

Large muscle groups: 6–8 sets per body part

Small muscle groups: 5–6 sets per body part

FAQ #11: How many repetitions should I do?

The number of reps you use depends on your goals. Strength athletes do a lot of training in the 5 rep range with very heavy weights for strength, while bodybuilders do more training in the 8–12 rep range with moderate weights for hypertrophy. If you wanted to stimulate more blood flow (pump) or muscular endurance, you might do even more reps, as high as the 15–20 rep range.

What if you want both –strength and muscle development? That’s what a lot of people want, so in that case, it makes sense to train in multiple rep ranges, either in the same workout or alternating heavy strength days with 4–6 reps and moderate hypertrophy days with 8–12 reps. Or, you might use a pyramid structure where you increase the weight each set and decrease the reps such as: set 1: 10–12 reps, set 2: 7–9 reps, set 3: 4–6 reps.

The simplest and easiest way to get started is to choose one rep range such as 3 X 8–12 (three sets of eight to twelve reps). Giving yourself a range helps you to know when its time to increase the weight and helps you use the progressive resistance principle.

BFFM repetition guidelines

Maximum strength 4–6 reps

Hypertrophy (size) & some strength 8–12 reps*

Muscular endurance/ little size 13–20 reps

* Best overall rep range for building muscle

FAQ #12: Will high reps help me burn more fat?

High reps usually will not help you burn more fat, but definitely will make your weight training less effective for building muscle and strength. In BFFM, we use weights primarily as a tool for

building and maintaining muscle. That means staying in the optimal hypertrophy rep range most of the time.

Remember that fat loss comes from a calorie deficit. If you did enough reps, eventually your calorie expenditure might add up and contribute to increasing your calorie deficit. The problem is that high reps with lighter weights build little if any muscle; high reps build endurance. Once your reps get too high, you're not strength training any more, what you're doing is more like "cardio with weights." You might as well get on the bike.

FAQ #13: How many exercises should I do?

How many exercises you do depends on your goals, your experience level, how you split up your workout (full body or split routine) and the amount of time you have. A simple and easy guideline is, don't do more exercises than you can fit into a one hour workout. If you're a beginner, you'll be starting with only one exercise per body part. As an intermediate, you'll do two exercises, and ultimately, you may do as many as three or four. More than that is usually overkill.

BFFM Exercise guidelines

Beginner:	One exercise per muscle group/full body routine
Intermediate:	Two exercises per muscle group/ two day split
Advanced:	Three exercises per muscle group/three day split
Advanced II:	Three or four exercises per muscle group/four day split

FAQ #14: How long should I rest between sets?

Rest intervals will vary depending on your goals. If you're training for building muscle or general fitness, one minute between sets is typical. That gives you enough time to recoup your energy and work capacity just enough to perform the next set without too much residual fatigue. You might need slightly longer (90–120 seconds) for large muscle groups (legs, back) in order to recover, regain strength and catch your breath. Athletes who are training for strength can benefit from extending rest between sets to as long as 3–4 minutes. This lets them hit each subsequent set with maximum strength, but it's not so long that they start cooling off.

In some cases, there are advantages to going in the opposite direction and reducing your rest intervals to as little as 20–30 seconds. Obviously, short rest periods between sets are a time saver. Doing more work in less time (increasing training density) also burns more calories in less time, it stimulates fat burning hormones, and it overloads the muscle, so it's effective for hypertrophy even without heavy weights. The disadvantage is that short rest intervals limit the amount of weight you can use, so they're not as conducive to maximum strength gains.

FAQ #15: How quickly should I lift and lower the weight? (tempo)

The most common advice you hear for rep speed (tempo) is to lift the weight slowly and under control. Usually you're advised to take two or three seconds to raise the weight (concentric muscle action) and three to four seconds to lower the weight (eccentric muscle action). This is a good general guideline and a good way for beginners to learn to lift safely with proper form. A slow, controlled rep speed is also the standard method in most bodybuilding programs because lifting quickly uses momentum and reduces tension on the muscle. Rep speed can vary however. In some sports, athletes train explosively for power, and certain exercises like the Olympic lifts were designed to be performed quickly.

BFFM rep speed guidelines

2–3 second concentric (lifting the weight)

3–4 second eccentric (lowering the weight)

Advanced bodybuilders often break the repetition speed into a four count tempo, including the stretch and contracted positions, as well as the concentric and eccentric actions:

3020 tempo:

3 – eccentric (lowering weight)

0 – pause at the bottom (stretch position)

2 – concentric (lifting/raising the weight)

0 – pause at the top (contracted position)

FAQ #16: How and when should I increase the weight and/or reps? (How do you apply the progressive overload principle)

Progression means that whenever it's possible, your goal is to lift more weight, do more reps, complete the same workout in less time (less rest between sets without decreasing the load) or improve your performance in the gym in some other way. Stated differently, your goal is to continuously aim for personal improvement and new personal records.

Any type of overload can produce a favorable adaptation – more muscle, more strength, more fitness, more endurance and so on – but progressive resistance, where you add weight to the bar, is considered the holy grail of building muscle.

Obviously, you can't do that at every workout. If you could keep adding weight indefinitely, you'd be bench pressing 1000 pounds in no time. That's not how it happens. As a beginner, you'll get stronger fairly quickly. It's not uncommon for newbies to add weight almost every week, if not every workout. As you get more advanced, your improvements will naturally slow down to the point where progression has to be coaxed very slowly, in small increments each week.

If you add even one more rep with the same weight each workout, that is progress that matters. Using a rep range (such as 8–12) is very helpful for guiding progression. When you reach the upper end of your rep range, then it's time to increase the weight. Increasing reps, then weight, is known as the double progressive system.

Here's an example of what workout to workout progression on an exercise like the squat might look like:

245 lbs X 8 reps
245 lbs X 9 reps
245 lbs X 10 reps
245 lbs X 11 reps
245 lbs X 12 reps (goal achieved -time to increase)
255 lbs X 8 reps
255 lbs X 9 reps
255 lbs X 10 reps
255 lbs X 11 reps
255 lbs X 12 reps (goal achieved - time to increase again)
265 lbs X 8 reps

This is a simplified example to demonstrate the basic concept. Your progress usually won't be this linear. Sometimes you'll make large strength gains and it's great when that happens, but other times you must be extremely patient and move up a rep at a time or use very small weight plates. In the example above, it took 11 workouts to move up 20 pounds, in only 10 pound increments – less than a 5% increase over the previous poundage.

The biggest roadblock to progression is impatience. When the honeymoon period of fast newbie gains is over, most people get very frustrated at how long it takes to gain the smallest amounts of muscle or strength. But slow and steady is the secret to winning this race. Sometimes progression even follows a pattern of three steps forward, then one step back. Keep after it and be sure to use a written training journal to track your progress. Each year, when you look back in your journal, you'll be amazed at how far you've come.

The enemy of progression is to go through the motions and repeat the same workout and same workload over and over again. That can only maintain your current condition, it won't improve it. If you ever feel stuck, as if you're not getting results from your workouts, then ask yourself you've been applying this principle of progression.

Not every workout should be 100% and you can't always increase the weight, but you can develop a constant improvement mindset and a low tolerance level for standing still. It will help

you with your progressive workouts if you add this to your goals and affirmations list: *“I don’t go to the gym to maintain, I go to the gym to improve. And if I want to improve, then today, I must aim to beat my previous workouts and do something I’ve never done before.”* This mindset makes training a lot more motivating and exciting. It makes training a challenge.

FAQ #17: How hard should I train? (Should I train to “failure?”)

In textbooks, intensity sometimes refers to the amount of weight you use, but we’ll call that the poundage, resistance or load. When we talk about training intensity, we’re referring to the amount of effort. If you’ve selected the proper weight, and you’re training hard enough, the last two or three reps in your set should be very difficult. You’ll feel fatigue, the burn may intensify, the weight will feel heavier, and it will get harder and harder to finish each rep. If your rep range goal was 8–12, and if you hit 12 reps and if that felt easy, the weight was too light and the set was not intense.

If you’ve selected the right weight, you’ll often hit a point where you momentarily can’t do another rep. In bodybuilding lingo, that’s known as reaching “failure.” Whether you should push yourself this hard is another topic of great controversy. If you ask the bodybuilding champions, there’s no doubt – they’ll tell you weight training must be intense. Many sets are taken to failure and almost all the sets come close to it. If you stop a set when you still have three or four reps left in you, you’re babying yourself. Push yourself through the “good pain” of burn and fatigue to squeeze out those last reps. When you train with intensity, just be sure to do it safely and intelligently. Use a spotter when you need one and never push through the “bad pain” of injury.

Although many bodybuilders train to failure frequently and believe it’s a key to their success, it’s not absolutely mandatory. As long as you keep using the progressive overload principle, you’ll keep making progress whether you go all the way to failure or not.

FAQ # 18: How do I choose my exercises?

Bill Pearl and Arnold Schwarzenegger’s encyclopedia-sized books contain hundreds of exercises. In fact, there are so many exercise variations, that if you wanted to, you could change your workout every time you hit the gym and never repeat the same routine twice. Most exercises, however, are simply variations on the basics. Some of the most important basic movements include squats, deadlifts, rows, pull-ups and presses. These are the most effective exercises, but also the most difficult, so many people shy away and gravitate toward the easier movements.

Isolation exercises like leg extensions and small muscle group exercises like concentration curls can be a part of any weight training program and they’re especially useful for bodybuilding. But

avoiding the difficult exercises like squats in favor of the easier ones like leg extensions is a sure way to short circuit your results.

There are dozens of excellent exercises you could do for every body part and you should vary your exercises regularly throughout the year. Some of my favorite exercises for bodybuilding programs are listed in the “Top 5” chart below, categorized by body parts. You’ll notice that the majority of them are the basic, compound movements.

There are also many variations on the basics that are worth trying. For example, variations on the barbell back squat include front squats and dumbbell squats. Bench press variations include flat, incline, decline or smith machine. The tricep French presses (behind head extension) can be done with barbells, dumbbells, cables or machines.

Tom’s Top 5 Weight Training Exercises List

Quads	Hamstrings	Calves	Abs	Back
Squats	Lying leg curl	Standing calf raise	Crunch	Rows (BB or DB)
Leg press	Stiff leg deadlift	Seated calf raise	Reverse crunch	Deadlifts
Lunges	Seated leg curl	Calf press	Plank	Chin ups
Hack squat	Single leg curl	Donkey calf raise	Hanging knee-up	Pulldowns
Leg extension	Hyper extension	One leg calf raise	Cable crunch	Cable rows

Chest	Shoulders	Biceps	Triceps	Forearms
BB bench press	Military BB press	Barbell curl	Lying tricep ext.	Barbell wrist curl
DB bench press	Dumbbell press	Dumbbell curl	Close grip bench	Reverse wrist curl
DB flyes	Dumbbell laterals	Preacher curl	Tricep pushdown	Reverse curl
Wide grip dips	DB rear laterals	Concentration curl	Parallel bar dips	Hammer curl
Cable crossovers	DB front raise	Cable curl	French press	DB wrist curl

FAQ #19: What order should I do the exercises in?

The traditional rule for order of exercises is to work your large muscle groups (chest, back) before the small muscle groups (biceps, triceps). If you exhaust your triceps first, then go on to chest, you may find that your pre-fatigued triceps prevent you from getting an efficient chest workout. If you train your biceps before your back, your pre-exhausted biceps may limit your back workout.

Another guideline for ordering your exercises is the priority principle. That means you identify the movements or muscles that need the most work and train them first or at least early in your workout when you have the most energy. The purpose is to bring up weak points and keep

everything in balance. Most people do the opposite, emphasizing their favorites, and neglecting exercises they don't like.

For example, men often over-emphasize the chest and biceps (the T-shirt muscles) while the upper back and pulling muscles are neglected. Some people train their entire upper bodies with gusto and completely skip legs. Calves are a typical "blow off" muscle. They're often left for last or even skipped completely.

These mistakes, along with poor form, are common causes of muscle imbalance and unsymmetrical physique development. With few exceptions (like the genetic freak with huge calves even though he never trains them), every muscle group should be worked and the ones that need the most emphasis should be given priority.

FAQ #20: How long should I stay with the same workout program?

Most trainers recommend changing your workouts every 4–12 weeks, but the simplest answer to this question is to change your workouts when they stop working or if you've been on one program so long that boredom is hurting your motivation. Your goal should be to achieve measurable improvements in your physique or in your workout performance on a weekly basis. If it feels like you're working hard, but you've stopped seeing results, it may be time for something different. You don't always need to change your entire program, but it usually takes some kind of new stimulus to restart progress after a plateau.

On the other hand, you don't want to change workouts too often, because that fails to provide continuity and time for progression. There may be some benefits that come with continuous change, but it's more efficient to milk each routine for all its worth before changing than it is to change every workout at random.

The frequency of change is different for everyone. It depends mostly on how long you've been training (training age). When you're a beginner, you can make progress on the same workout routine for a long time. It's not uncommon for a beginner to keep making progress – adding weight to the bar and gaining more muscle – for three or four months before seeing the progress curve start to flatten.

The more advanced you get, the more quickly your muscles adapt, and the more often you need to change. Advanced bodybuilders often adapt in as few as 3–5 workouts and should usually change something in the program no less than once per month.

FAQ #21: Should I train my abs every day?

It's not necessary to train abs every day and it may actually be counter-productive. Training your abs every day does not burn more fat and it will not bring out your six pack faster. In fact, abdominal training has almost nothing to do with fat loss. Abdominal training develops the muscles underneath the fat, but doesn't remove the layer of fat on top of the muscle (you can't spot reduce belly fat with ab exercises).

The way to make your abs show through is to reduce your body fat level. Fat loss comes from a calorie deficit, which you achieve most efficiently through nutrition and cardio, not with endless reps of ab exercises. On the BFFM program, you'll train your abdominals just like any other body part, which is usually no more than twice a week.

FAQ #22: Do I have to warm up or stretch before I lift?

Warm up is an important part of pre-workout preparation. There are two types of warm up: General and specific. The traditional way to do a general warm up is to hop on a cardio machine for 5–10 minutes. The idea is to raise your body temperature, loosen up joints and get blood flowing. The downside to this type of warmup is that if the cardio machine only involves your legs, and your workout is for upper body, then while you may have increased your body temperature, you didn't warm up the joints and tissues that will be involved in your workout.

Many people still like doing a quick cardio machine warmup, especially before leg training, but the newer and arguably better method involves joint mobility or dynamic flexibility exercises that better prepare you for the specific weight lifting exercises that lie ahead.

After the general warm up, you'll do a specific warm up. This is where you do at least one or two light, non-fatiguing sets of each exercise before moving on to your work sets. It's especially important to do warm up sets on basic compound exercises when you're training very heavy. It's unwise to jump right to your heaviest set first if you're still cold. A pyramid set and rep structure is popular because it has a built in warm up. You start lighter with more reps, then add weight and decrease reps with every set.

It's important to note that stretching and warm up are not the same. A warm up is designed to raise your body temperature, increase joint mobility, stimulate blood flow and increase physical and mental readiness for the workout ahead. Static stretching does not warm you up. Stretching is intended for improving range of motion. In fact, stretching is better after you're warm, when your muscles are more elastic. That's why most athletes warm up before the workout and do static stretching after the workout.

FAQ # 23: What days of the week should I train?

On the BFFM program, you have a lot of flexibility in your weekly training schedule. You can train on the days you want to train and rest on the days you want to rest. For example, some people prefer to have weekends off, while others like to have Mondays or Tuesdays off to avoid crowds at the gym.

The workout charts below give you some suggestions for how to lay out your weekly schedule. It's usually ideal not to train more than two days in a row without taking a recovery day, but for the most part, you can choose whichever days of the week you prefer train.

FAQ #24: Should I train my entire body in one session, or split it up?

For fat loss and general fitness, full body workouts or two way split routines could be used indefinitely. For bodybuilding, body part split routines are almost always most effective. Beginning bodybuilders usually start with full body routines, but as they advance and need to add more exercises, they start splitting up the workouts.

Advanced bodybuilders need multiple exercises to work each muscle group completely. For example, a muscle like the deltoid has three heads, anterior, medial and posterior. For complete muscle development, a bodybuilder works all three sections. The problem is, the more exercises you add, the longer your workouts become. Trying to do two or three exercises per muscle group on a full body routine would turn into a marathon! A split routine is the solution.

Split routines allow you to perform multiple exercises on each body part without spending all day in the gym. Split routines also allow you to focus your mental and physical energies more efficiently. Training your entire body, or even half of your body, in a single session can be exhausting. When you only have to work two or three muscle groups at a time, you not only finish more quickly, you can also give more energy and intensity to each muscle group.

FAQ #25: If I do a body part split routine, which muscle groups should I train together?

There are more possible body part groupings for split routines than I have space to write about. However, here's an important guideline: It's helpful to place a large muscle group and small muscle group together instead of all large muscle groups in one session. For example, if you trained multiple exercises on legs and back the same workout, it would be terribly exhausting. If instead, you separated legs and back, you would only have to train one large muscle group at a time, which is more energy-efficient.

The BFFM weight training programs

BFFM offers four separate workout programs, from beginner to advanced. Each program is a simple template. Inside of that basic framework, you can change exercises, sets, reps, tempos and every other training variable to give you all the variety you want and need.

It's important to note that these routines, especially the body part split routines, were designed first and foremost for transforming the way you look. These workouts are ideal for helping you lose fat, gain muscle, and sculpt your body.

The BFFM nutrition program could be used by almost any athlete for improving body composition. But the BFFM workouts are not sports-specific conditioning programs. You'll get stronger, but the primary goal here is to improve your physique, not to train you for specific sports.

The beginners workout (level 1): The full body workout

This is a very simple routine, and the ideal way for a first-timer to start. Why not start with a split routine? If you're ambitious, you certainly could, but beginners often have a hard time remembering technique on 8 exercises, let alone the 16–20 or more in a thorough split routine. Doing too many exercises can also leave a beginner very sore. In the beginning, it's best to keep it basic.

Beginners workout, variant 1: Three days per week

Mon	Tues	Wed	Thur	Fri	Sat	Sun
Full body weights	Off	Full body weights	Off	Full body weights	Off	Off

Beginner's workout: sample exercises

1. Squats (thighs)
2. Stiff legged deadlift (hamstrings)
3. One arm dumbbell row (upper back)
4. Bench press with dumbbells or barbell (chest)
5. Dumbbell overhead press (shoulders)
6. Dips (triceps)
7. Dumbbell curl (biceps)
8. Standing calf raise (calves)
9. Crunches (abs)

Perform 2–3 sets of 8–12 reps on each exercise except calves and abs, where you can do up to 20 reps. Rest about one minute between sets. You'll train your whole body at each workout, three days per week, on non-consecutive days (Monday, Wednesday and Friday or Tuesday, Thursday and Saturday). Stay with this routine for at least your first three months of training, though you may change the exercises if you feel like your progress reaches a plateau before then. After three to six months, you'll be ready to add more exercises and move up to a two day split routine.

The intermediate workout (level 2): The two day split

The two day split is popular with athletes, bodybuilders and recreational lifters of almost all experience levels. The two day split recommended in BFFM is known as a push-pull because mostly pulling exercises are done on one day and pushing exercises the other. Bodybuilders consider this type of split an intermediate level workout, but anyone other than an advanced bodybuilder could conceivably stay with this program indefinitely. This is a universally popular and effective training schedule.

BFFM two day split: body part groupings

Day 1: Chest, shoulders, triceps, abs

Day 2: Legs, back, biceps, calves

Variant 1: Four day routine (more aggressive)

Works each muscle once every three to four days

Mon	Tues	Wed	Thur	Fri	Sat	Sun
Chest	Legs	Off	Chest	Off	Legs	Off
Shoulders	Back		Shoulders		Back	
Triceps	Biceps		Triceps		Biceps	
Abs	calves		Abs		calves	

Repeat each week exactly as shown above

Variant 2: Three day routine (more conservative)

Works each muscle once every four to five days

Mon	Tues	Wed	Thur	Fri	Sat	Sun
Chest	Off	Legs	Off	Chest	Off	Off
Shoulders		Back		Shoulders		
Triceps		Biceps		Triceps		
Abs		calves		Abs		

Repeat following Monday picking up with day 2 workout

Intermediate workout: sample exercises**Chest, shoulders, triceps, abs (day one)**

1. Flat bench press: dumbbell, barbell or machine (chest)
2. Incline dumbbell flyes or machine flyes (chest)
3. Seated dumbbell or machine overhead press (shoulders)
4. Dumbbell side lateral raise (shoulders)
5. Tricep pushdown (triceps)
6. Overhead tricep extension with dumbbell (triceps)
7. Crunches (abs)
8. Reverse crunches (abs)

Legs, Back, Biceps, calves (Day two)

1. Squats (quads)
2. Lunges (quads)
3. Lying leg curl (hamstrings)
4. Low back extension/hyperextension (lower back/hamstrings)
5. Pull-ups (lats/upper back)
6. Seated cable rows (lats)
7. Barbell curl (biceps)
8. Seated alternating dumbbell curl (biceps)
9. Standing calf machine (calves)
10. Seated calf machine (calves)

You will perform two exercises for each body part for 3 sets of 8-12 reps each (up to 20 reps for calves and abs).

The advanced bodybuilding workout (Level 3): The three day split

The first of the advanced programs is the three-day split. A three-day split means that you subdivide your body parts even further over three days so you only have to work a few muscle groups per session. Three-day split routines give you a lot of flexibility. If you want every Thursday and Sunday off, you can do that, you simply train around your desired rest days; 3 on 1 off, 2 on 1 off. A three day split can also be performed 2 days on 1 day off if you want more recovery between workouts. It's ideal to plan the weekly schedule so that each muscle is trained at least once every 5–6 days.

BFFM three day split body part groupings:

Day 1: Chest, back, abs

Day 2: Quads, hamstrings, calves

Day 3: Shoulders, biceps, triceps

Variant 1: Two days on one day off (more aggressive)**Works each muscle once every four days**

Mon	Tues	Wed	Thur	Fri	Sat	Sun
Back Chest Abs	Quads Hams Calves	Off	Shoulders Triceps Biceps	Back Chest Abs	Off	Quads Hams Calves

Repeat following Monday, picking up with day three workout

Variant 2: Two days on one day off, two days on two days off (more conservative)**Works each muscle once every five days**

Mon	Tues	Wed	Thur	Fri	Sat	Sun
Back Chest Abs	Quads Hams Calves	Off	Shoulders Triceps Biceps	Back Chest Abs	Off	Off

Repeat following Monday picking up with day two workout

Chest, back, abs (day one)

1. Flat barbell bench press (chest)
2. Incline dumbbell press (chest)
3. Cable crossovers (chest)
4. Wide grip pull up (back)
5. Seated cable rows (back)
6. T-Bar rows (back)
7. Hanging leg raises (abs)
8. Cable crunch (abs)

Quads, hams, calves (day two)

1. Barbell squats (quads)
2. Hack machine squats (quads)
3. Lunges (quads)
4. Stiff legged deadlift (hamstrings)
5. Lying leg curl (hamstrings)
6. Standing calf machine (calves)
7. Calf press on leg press machine (calves)

Shoulders, biceps, triceps (day three)

1. Seated dumbbell press (shoulders)
2. Dumbbell side lateral raise (shoulders)
3. Rear deltoid machine (shoulders)
4. Barbell curl (biceps)
5. Seated alternating dumbbell curl (biceps)
6. Hammer curl (bicep/forearms)
7. Close grip bench press (triceps)
8. Lying tricep extension (triceps)
9. Rope pushdown (triceps)

The advanced bodybuilding workout (Level 4): The four day split

This is the big daddy of bodybuilding routines – it’s the program I use and recommend most often for bodybuilders or advanced trainees with muscle-building goals. I experiment with different programs on a regular basis, but this is the one I come back to every time as my default routine. This program requires a solid base (about a year of consistent training experience), you must be familiar with multiple exercises for each muscle group, and you need 4–5 days each week to train.

On the four day split, you only train two muscle groups per session (three at most if you count abs). This provides some major advantages to bodybuilders. This keeps your workouts brief and makes it easier to concentrate. It also allows you to generate more intensity on every exercise. Intense, heavy training is extremely energy consuming. If you do multiple sets on multiple exercises, you’re not going to have the energy for two or three other large body parts.

BFFM four day split body part groupings:

Day 1: Chest, biceps, abs

Day 2: Back, calves

Day 3: Shoulders, triceps, abs

Day 4: Quads, hamstrings

Variant 1: Two days on, one day off (more aggressive)

Works each muscle group once every six days

Mon	Tues	Wed	Thur	Fri	Sat	Sun
Shoulders	Back	Off	Chest	Quads	Off	Shoulders
Triceps	Calves		Biceps	Hams		Triceps
Abs			abs			abs

Repeat following Monday, picking up with day two workout

Variant 2: Two days on, one day off, one day on, one day off (more conservative)
Works each muscle group one every seven days

Mon	Tues	Wed	Thur	Fri	Sat	Sun
Shoulders Triceps abs	Back Calves	Off	Chest Biceps abs	Off	Quads Hams	

Repeat same sequence every week

Shoulders, triceps, abs

1. Military press (shoulders)
2. Cable side lateral raise (shoulders)
3. Bent over rear dumbbell laterals (shoulders)
4. Straight bar pushdown (triceps)
5. Lying extension aka “skull crusher” (triceps)
6. One arm overhead dumbbell extension (triceps)
7. Cable crunches (abs)
8. Reverse crunches (abs)

Back, calves

1. Reverse grip pull ups (upper back)
2. Seated cable rows (upper back)
3. One arm dumbbell rows (upper back)
4. Weighted hyperextension (lower back)
5. Donkey calf machine raise (calves)
6. Seated calf machine (calves)

Chest, biceps, abs

1. Incline barbell bench press (chest)
2. Flat dumbbell flyes (chest)
3. Pec deck machine flyes (chest)
4. Standing barbell curl (biceps)
5. Dumbbell preacher curl (biceps)
6. Reverse barbell curl (biceps/brachialis/forearm)
7. Cable crunches (abs)
8. Reverse crunches (abs)

Quads, hamstrings

1. Barbell squats (quads)
2. Leg extension machine (quads)
3. Walking lunges (quads)
4. Seated leg curl machine (hamstrings)
5. Lying leg curl machine (hamstrings)

Customization and variation

You can follow these routines exactly as outlined or customize them to suit your situation better. If you prefer different exercises or training techniques, by all means, use them. The BFFM nutrition program works well with many other weight training programs. The important thing is that you always include the resistance training element of the four-part fat loss formula. If you're not doing some form of resistance training, you're not following BFFM.

The BFFM weight training programs should be considered a starting point – they were not meant to remain static. You can keep the same weekly schedule and split routine, but to prevent staleness or muscle adaptation, you should periodically change the other variables: exercises, exercise combinations, exercise order, intensity, sets, reps, rest intervals, poundage and so on. The number of potential workouts you can create by mixing these training variables is literally infinite.

Advanced program design is a complex subject, so I encourage you to become a serious student. To see my most recent list of recommend weight training and bodybuilding books, visit:

<http://www.burnthefat.com/weight-training-books.html>

To participate in training discussions with thousands of BFFMers or even ask me questions about BFFM workouts, bodybuilding and other training topics, join our members-only community at:

<http://www.burnthefatinnercircle.com/training-forum>

Action is superior to analysis, so go get started!

As you start training and as you continue your quest for more knowledge, keep an open mind and never feel that you have to accept any one person's teachings completely or reject them completely. Take what you feel is relevant to you, your goals and your unique body type and test it. Keep what works for you and throw away the rest. Put all the useful pieces together and ultimately you'll develop a training system that's uniquely your own.

There are so many conflicting opinions out there and so many experts and athletes have dogmatic, narrow-minded opinions about training, that it's very easy to get overwhelmed and confused. Advice: Don't get caught up in the arguments about which training method is the best or you could be trapped in paralysis by analysis forever. Just get started. Set a goal, map out a plan, train hard, gather feedback, adjust your approach, keep doing more of what's working and repeat that formula until you reach your goals. Legendary bodybuilder Dave Draper put it best; "You guys can argue about training theories all you want... I'll be in the gym... It's leg day."

Conclusion: The Journey is Just Beginning...

"Do not wait; the time will never be 'just right.' Start where you stand, and work with whatever tools you may have at your command, and better tools will be found as you go along."

—Napoleon Hill

"You don't have to be great to start, but you have to start to be great."

—Zig Ziglar

I want to congratulate you for making it this far. Did you know that 80% of the people who invest in books or courses for health, fitness or personal development never even crack the plastic on the package, let alone read the entire book or listen to the audios? Unbelievable, but true!

Because you've invested the time and effort to read this entire life-changing "bible of fat loss," you've already taken the first step towards the lean, fat-free body you've always wanted. You've gained the knowledge and now you simply have to take the next step and *apply it*. They say knowledge is power, but it's not, really. Knowledge *applied* is power!

You see, I haven't just written this book to entertain you or give you information. I've written this with the hopes of inspiring you to take the action necessary for you to develop the body you've always wanted... and to take action immediately. I urge you to take what you've learned and begin now! No, not even tomorrow! You can start today, by making positive changes at your very next meal. You can even start training today, if you're not doing so already. Don't wait!

You're going to learn more and pick up more tools as you continue this journey in the future. But right now, right here, you already have all the tools and information you need to start working on a leaner, healthier, more muscular and attractive body...

You've learned:

- The importance of goal setting; how to set goals, how to program them into your subconscious mind, and how to achieve them
- Why diets don't work and how to avoid becoming one of the 95% who fail
- Why body composition is more important than body weight and how to accurately measure your body fat and lean body mass.

- How to chart your progress and interpret the results.
- Why calories count and how to calculate your exact calorie requirements for losing fat as quickly as possible without going into starvation mode.
- All the secrets of nutrient timing to maximize the synergy between training and nutrition
- Everything you need to know about protein, carbohydrates and fat, including the truth about low carb diets.
- How much water to drink to keep your energy levels high and your fat-burning machinery running smoothly.
- How to construct your own meals and meal plans using templates and spreadsheets.
- The truth about the supplement and weight loss industries and why so few supplements are actually worth taking.
- How much cardio you need for maximal fat loss.
- Why weight training is priority number one for fat loss as well as building muscle and reshaping your body.

Although I'm sure you feel eager to reach your goals quickly, be patient. Remember that the most rewarding part is actually *getting* there, not *being* there. As Cervantes said, "The journey is better than the inn." You really can enjoy the journey.

You now have at your fingertips all the knowledge you need to begin your journey and to begin it knowing for sure that you're doing it the right way. Fortunately, you don't have to take this journey alone.

You'll be hearing from me regularly if you're subscribed to my fat burning tips e-mail newsletter. If you ever change your e-mail, make sure you re-subscribe so I can always keep you informed: <http://www.burnthefat.com/free-fat-loss-tips-newsletter.html>

As a registered BFFM e-book owner, you'll also be receiving extra newsletters and private messages from me on the "clients-only" newsletter, if you confirmed your email and subscription after purchasing this ebook (email the help desk if you're not sure).

Here's how else we can stay in touch:

Follow the Burn the Fat Blog (rss feed available)

<http://www.BurnTheFatBlog.com>

Email Burn the Fat help desk (put "attention Tom" if it's for me):

<http://www.BurnTheFat.com/contact.html>

Join our (public) Burn the Fat group on facebook at:

<http://www.facebook.com/burnthefat>

Join our (private / members-only) Burn the Fat community at:

<http://www.BurnTheFatInnerCircle.com>

Last but not least... absolutely, positively, contact me to tell me how you're doing! I'd love to hear about your 49-day (7 week) results, your three month results and even a 6 month or 1 year update after that.

I want to hear your success story, see your photos, if you want to share them, and I'd love to get a testimonial from you about how the BFFM system has helped you. Maybe you'll even be featured or interviewed on one of the Burn the Fat websites and you could inspire others with your success story.

Once again, I congratulate you, and I'm look forward to a lasting friendship.

Train hard and expect success,

Your friend and coach,

Tom Venuto

<http://www.burnthefat.com>

<http://www.burnthefatblog.com>

<http://www.burnthefatinnercircle.com>

APPENDIX

BURN THE FAT FOODS

LEAN PROTEINS

Food Item	Quantity	Weight (g)	Calories	Protein	Carbs	Fat	Fiber
Beef, ground, 90% lean	4 oz uncooked	113	199	22.7	0	11.3	0.0
Beef, ground, 95% lean	4 oz uncooked	113	155	24.3	0	6.0	0.0
Beef, round, top, lean (select)	4 oz uncooked	113	146	26.1	0	3.8	0.0
Beef, round tip, lean (select)	4 oz uncooked	113	138	24.2	0	3.8	0.0
Beef, round, eye of, lean (select)	4 oz uncooked	113	134	25.2	0	3.0	0.0
Beef, flank steak, lean (select)	4 oz uncooked	113	155	24.2	0	5.6	0.0
Beef, sirloin, top, lean (select)	4 oz uncooked	113	144	25	0	4.0	0.0
Beef, tenderloin (filet)	4 oz uncooked	113	167	25	0	6.7	0.0
Buffalo (bison) steak, top round	4 oz uncooked	113	138	26.3	0	2.7	0.0
Buffalo (bison) steak, top sirloin	4 oz uncooked	113	128	24.2	0	2.7	0.0
Chicken breast, light meat, skinless, 99% lean	4 oz uncooked	113	110	26	0	1.0	0.0
Chicken breast, canned	4 oz	113	100	18	0	2.0	0.0
Chicken breast, ground, lean	4 oz uncooked	113	100	24	0	0.5	0.0
Clams, raw	1/2 cup (4 oz)	113	84	14.5	2.9	1.1	0.0
Crab, fresh, raw (Dungeness, U.S. King or Stone)	4 oz uncooked	113	95	20.8	0	0.7	0.0
Crawfish	4 oz raw meat only	113	87	18.1	0	1.1	0.0
Egg whites, liquid	1 cup (8.6 oz)	244	120	26	1	0.0	0.0
Egg whites, large	6	198	102	21	1.8	0.0	0.0
Egg, whole, large	1	50	75	6.3	0.6	5.0	0.0
Elk (game meat)	4 oz uncooked	113	125	25.9	0	1.6	0.0
Fish, Bass, Striped	4 oz uncooked	113	110	20.1	0	2.7	0.0
Fish, Catfish	4 oz uncooked	113	108	18.6	0	3.3	0.0
Fish, Cod, Pacific	4 oz uncooked	113	93	20.2	0	0.8	0.0
Fish, Flounder (flatfish)	4 oz uncooked	113	104	21.4	0	1.4	0.0
Fish, Halibut, Pacific	4 oz uncooked	113	124	23.6	0	2.6	0.0
Fish, Mackerel, Atlantic	4 oz uncooked	113	230	21	0	15.8	0.0
Fish, Mackerel, Pacific (Jack)	4 oz uncooked	113	179	22.8	0	9.0	0.0
Fish, Mackerel, canned in olive oil	1 can (3.9 oz)	110	290	24	0	22.0	0.0
Fish, Mahi-mahi, U.S.	4 oz uncooked	113	97	21	0	0.8	0.0
Fish, Pollack	4 oz uncooked	113	104	22.1	0	1.1	0.0
Fish, Tuna, canned in water, chunk light	4 oz	113	120	26	0	1.0	0.0
Fish, Tuna, canned in water, albacore	4 oz	113	140	26	0	2.0	0.0
Fish, Tuna, Yellowfin (tuna steak)	4 oz uncooked	113	123	26.5	0	1.1	0.0
Fish, Rainbow trout	4 oz uncooked	113	135	23.2	0	3.9	0.0
Fish, Salmon (wild)	4 oz uncooked	113	206	28.8	0	9.2	0.0
Fish, Tilapia	4 oz uncooked	113	110	23	0	2.0	0.0
Lamb, loin	4 oz roasted	113	217	32.1	0	8.8	0.0
Lobster	4 oz uncooked	113	102	21.3	0.6	1.0	0.0
Mussels	4 oz raw	113	98	13.5	4.2	2.5	0.0
Pork tenderloin	4 oz uncooked	113	123	23.6	0	2.6	0.0
Prawns	4 oz raw	113	119	22.7	1	1.9	0.0
Ostrich steak	4 oz uncooked	113	135	28	0	3.5	0.0
Oysters, Pacific	4 oz raw	113	92	10.7	5.6	2.6	0.0
Protein powder, casein (a milk protein)	1 scoop	31	110	23	3	0.5	1.0
Protein powder, hemp (vegetarian)	1 scoop	31	110	23	3	0.5	1.0
Protein powder, soy (vegetarian)	1 scoop	31	120	25	2	1.5	0.0
Protein powder, whey (a milk protein)	1 scoop	24	90	18	2	2.0	0.0
Scallops	4 oz raw	113	100	19	2.7	0.9	0.0
Sardines (herring), canned in water	1 can (3.2 oz)	91	150	19	0	8.0	0.0
Sardines (herring), canned in olive oil	1 can (3.2 oz)	91	191	22.7	0	10.5	0.0
Salmon, wild Alaskan	4 oz uncooked	113	206	28.8	0	9.2	0.0
Salmon burgers	1 burger (3.2 oz)	91	80	18	1	0.1	1.0
Salmon, canned, pink	4 oz	113	158	16.8	0	6.9	0.0
Shrimp	4 oz	113	120	23	1	2.0	0.0
Squid	4 oz raw	113	104	17.7	3.5	1.6	0.0
Tempeh (vegetarian protein)	1/2 cup (2.9 oz)	82	160	15.4	7.8	9.0	3.3
Tofu, firm, raw (vegetarian protein)	2.9 oz raw	117	117	12.8	3.5	7.1	0.0
Turkey Breast, skinless	4 oz uncooked	113	178	33.9	0	3.7	0.0
Turkey, ground 99% lean	4 oz uncooked	113	120	28	0	1.0	0.0
Venison steak (deer meat)	4 oz uncooked	113	136	25.9	0	2.7	0.0

STARCHY VEGETABLES, GRAINS, BEANS & LEGUMES (NATURAL COMPLEX CARBS)

Food Item	Quantity	Weight (g)	Calories	Protein	Carbs	Fat	Fiber
Beans, Adzuki, canned	1/2 cup (4.1 oz)	116	147	8.7	28.5	0.1	8.4
Beans, Black, canned	1/2 cup (4.6 oz)	130	100	7	20	0.5	8
Beans, Kidney, canned	1/2 cup (4.5 oz)	127	110	7	20	0.5	8
Beans, Garbanzo (chickpeas), canned	1/2 cup (4.6 oz)	130	120	7	19	1.5	5
Beans, Navy, canned	1/2 cup (4.6 oz)	130	110	7	20	0.5	7
Beans, Pinto, canned	1/2 cup (4.2 oz)	119	100	6	18	0	6
Black eye peas, canned or frozen	1/2 cup (4.6 oz)	130	90	6	16	1	4
Cassava (Yucca root)	1/2 cup (3.5 oz)	99	165	1.4	39.2	0.3	1.8
Chickpeas (Garbanzos), canned	1/2 cup (4.6 oz)	130	120	7	19	1.5	5
Corn, canned	1/2 cup (5.4 oz)	153	70	2	18	1	3
Lentils	1/2 cup cooked (3.5 oz)	99	115	9	20	0	7.8
Lima beans, canned	1/2 cup (4.5 oz)	127	120	7	23	1	8
Oatmeal, steel-cut (no sugar added)	1/4 cup dry (1.4 oz)	40	150	5	27	2.5	4
Oatmeal, old-fashioned (no sugar added)	1/2 cup dry (1.4 oz)	40	150	5	27	3	4
Peas, split, green, dried	1/4 cup (1.6 oz)	45	160	12	24	1	4
Plantains	1/2 med (3.9 oz)	110	180	0	22	0	5
Potato, white	1 lg. uncooked (7 oz)	198	160	4.2	36.3	0.2	3.2
Potato, sweet	1 med uncooked (6 oz)	170	136	2.1	31.6	0.4	3.9
Pumpkin, canned	1 can (15 oz)	425	174	3.6	35	0	14
Rice, brown, long grain, dry	1/2 cup dry (3.3 oz)	94	320	8	64	3	4
Rice, brown, long grain, cooked	1 cup cooked (6.9 oz)	195	216	5	44.8	1.8	3.6
Rice, brown, basmati, dry	1/2 cup dry (3.3 oz)	92	320	8	64	3	4
Rice, brown, basmati, cooked	1 cup (6.9 oz)	195	216	5	44.8	1.8	3.6
Rice, wild, dry	1/4 cup (2.8 oz)	79	160	6	34	0.5	3
Rice, wild, cooked	1 cup (5.8 oz)	164	166	6.5	35	0.6	1.5
Squash, raw, winter, (acorn, butternut)	1 cup cubed (4.9 oz)	138	56	1.1	14.6	0.1	2.1
Yam	1 med uncooked (5 oz)	141	180	2.2	39.6	0.2	5.8

DAIRY PRODUCTS (LEAN PROTEIN & NATURAL SIMPLE CARBS)

Food Item	Quantity	Weight (g)	Calories	Protein	Carbs	Fat	Fiber
Milk, skim	1 cup (8 fl oz)	-	90	8	12	0	0
Milk, 1% low fat	1 cup (8 fl oz)	-	100	8	11	2	0
Milk, 2% low fat	1 cup (8 fl oz)	-	121	8.1	11.7	4.7	0
Milk, soy, light (dairy substitute; contains sucrose)	1 cup (8 fl oz)		100	7	8	4	1
Milk, soy, nonfat (dairy substitute; contains sucrose)	1 cup (8 fl oz)		70	6	10	0	0
Milk, soy, unsweetened (dairy substitute)	1 cup (8 fl oz)		90	7	5	4	1
Cheese, American, non fat	2 slices (2 oz)	56	60	10	4	0	0
Cheese, cheddar, non fat, shredded	1/2 cup (2 oz)	56	90	16	4	0	0
Cheese, cheddar, low fat, block	2 inch cube (2 oz)	56	120	18	1	2.5	0
Cheese, feta low fat	2 oz	56	120	12	0	8	0
Cheese, feta non fat	2 oz	56	60	12	4	0	0
Cheese, mozzarella, non fat, shredded	1/2 cup (2 oz)	56	80	18	2	0	0
Cheese, mozzarella, shredded low fat (part skim)	1/2 cup (2 oz)	56	160	16	2	9	0
Cheese, Parmesan, non fat	2 tbsp (0.4 oz)	11	25	3.3	3.3	0	0
Cheese, Swiss, low fat	2 slices (2 oz)	56	100	15.9	1.9	2.9	0
Cheese, Swiss, non fat slices	2 slices (2 oz)	56	81	13.5	5.4	0	0
Cream cheese, non fat	2 tbsp (1.2 oz)	33	30	4	2	0	0
Cottage cheese, nonfat	1/2 cup (4 oz)	113	100	16.2	7.5	0	0
Cottage cheese, 2% low fat	1/2 cup (4 oz)	113	102	15.5	4.1	2.2	0
Cottage cheese, 1% low fat	1/2 cup (4 oz)	113	100	17.5	5	1.3	0
Sour cream low fat	2 tbsp (1.1 oz)	31	31	1	3	2	0
Sour cream, non fat	2 tbsp (1.1 oz)	31	25	2	4	0	0
Yogurt, plain, nonfat	1 yogurt (8 oz)	226	110	10	18	0	0
Yogurt, plain, 1% low fat	1 yogurt (8 oz)	226	143	11.9	16	3.5	0
Yogurt, fruit, low fat	1 yogurt (8 oz)	226	240	9	47	2	0
Yogurt, fruit, non fat	1 yogurt (8 oz)	226	200	16	32	0	0

FIBROUS VEGETABLES & GREENS (NATURAL COMPLEX CARBS)

Food Item	Quantity	Weight (g)	Calories	Protein	Carbs	Fat	Fiber
Alfalfa sprouts	2 tbsp (0.1 oz)	2.8	2	0.2	0.2	0	0.2
Arugula, raw	1 cup (0.8 oz)	6	6	0.6	0.8	0	0.4
Artichoke, fresh, edible portions	1 med (4.5 oz)	128	60	4.2	13.5	0.2	6.9
Asparagus spears	10 large 7" (6.6 oz)	187	50	4	8	0	4
Beets, raw	1 cup (6 oz)	170	70	2	16	0	4
Bok Choy (Chinese cabbage), raw, shredded	1 cup (2.5 oz)	71	10	1	1.6	0.2	0.8
Broccoli, raw, chopped	1 cup (3.2 oz)	91	44	4.6	7.8	0.4	4.6
Brussels sprouts, raw, chopped	1 cup (3.1 oz)	88	38	3	7.8	0.2	3.6
Cabbage, raw, shredded	1 cup (3.1 oz)	88	18	1	3.8	0.2	1.6
Cauliflower, raw, chopped	1 cup (3.5 oz)	99	26	2	5.2	0.2	2.6
Carrot, raw	1 large 7.5" (2.8 oz)	79	31	0.7	7.3	0.1	2.2
Celery, raw, stalk	1 med 7.5" (1.6 oz)	45	6	0.3	1.5	0.1	0.7
Chard, Swiss, fresh chopped	1 cup (1.3 oz)	85	6	0.6	1.4	0	0.3
Collard greens, raw	2 cups (2.8 oz)	79	25	2	5	0	3
Cucumber, with peel	1 small (5.6 oz)	158	19	1	3.4	0	1.1
Eggplant, raw	1 cup pieces (3 oz)	85	22	0.8	5	0.2	2
Garlic, fresh	1 clove	5.6	4	0.2	1	0	0.1
Green beans (string or snap beans), raw	1 cup (4 oz)	113	34	2	7.8	0.2	3.8
Jerusalem artichokes	1/2 cup sliced (3 oz)	85	57	1.5	13.1	0	1.2
Kale, raw, chopped	1 cup (2.4 oz)	68	34	2.2	6.8	0.4	1.4
Leeks, raw	1 cup (3.1 oz)	87	64	1.6	14.9	0.4	1.8
Lettuce, romaine, loose leaf, chopped	3 cups (6 oz)	170	30	2	4	0	2
Okra, raw, sliced	1 cup (3.5 oz)	99	38	2	7.6	0.2	2.6
Onion, white or yellow, raw, chopped	1 cup (5.2 oz)	147	60	1.8	14	0	2.8
Onion, green (scallion), raw, chopped	1 cup (3.5 oz)	99	32	1.8	7.4	0.2	2.6
Mushrooms, white, raw pieces or slices	1 cup (2.5 oz)	71	18	2	3	0.4	0.8
Parsnips	1 med (4 oz)	113	85	1.4	20.3	0.3	5.5
Peas, green, frozen	1/2 cup (2.8 oz)	79	60	4	11	0	3
Peas, sugar snap or snow, raw	1 cup (3 oz)	85	35	2	6	0	2
Pepper, bell or sweet, green or red	med or 1/2 cup (4.2 oz)	119	20	0.7	4.8	0.1	1.3
Pepper, yellow, raw	large (6.6 oz)	187	50	1.9	11.8	0.4	1.7
Pumpkin, raw, cubes	1 cup (4.1 oz)	116	30	1.2	7.6	0.2	2
Radishes, raw, sliced	1/2 cup (2 oz)	57	12	0.4	2.1	0.3	0.9
Salsa or picante sauce, tomato	4 tbsp (4 oz)	115	20	0	5	0	0
Shallots	1 tbsp chopped (0.4 oz)	11	7	0.3	1.7	0	0
Spinach, raw, leaves, chopped	1.5 cups (3 oz)	85	40	2	10	0.4	5
Squash, raw, summer, (zucchini, crookneck)	1 cup (3 oz)	85	16	1.4	3.2	0.2	1.4
Tomato, whole, raw *	1 med (5.2 oz)	147	35	1	7	0	1
Tomato juice	1 cup (8 fl oz)	-	50	2	10	0	2
Tomato sauce	1 cup (8 fl oz)	226	80	3	16	0	4
Tomato paste	2 tbsp (1.2 oz)	34	30	1	7	0	2
Turnips	1 large (6.5 oz)	184	51	1.7	11.8	0.2	3.3
Turnip Greens	3 cups (5.7 oz)	161	42	2.4	9.6	0.6	4.2
Water Chestnuts	4 (1.3 oz)	37	35	0	8.6	0	1.1
Vegetable juice	1 cup (8 fl oz)	-	50	2	10	0	2
Vegetables, mixed, frozen, peas and carrots	2/3 cup	85	50	3	9	0	3
Vegetables, mixed, frozen, oriental broccoli stir fry	1 cup	96	35	1	6	0	2
Vegetables, mixed, frozen, broccoli, cauliflower, carrots	1 cup	87	30	1	5	0	2
Watercress	1 cup chopped (1.2 oz)	34	4	0.8	0.4	0	0.8

FATS, OILS, NUTS & SEEDS

Food Item	Quantity	Weight (g)	Calories	Protein	Carbs	Fat	Fiber
Avocado	3.3 oz (1 med)	93	165	3	9	15	9
Almonds, raw	1/4 cup (1.2 oz)	34	210	7	7	19	9
Almond butter, natural (unsweetened)	2 tbsp (1.2 oz)	34	120	0	0	14	0
Brazil nuts, shelled	1/4 cup (4.9 oz)	139	240	5	5	12	2
Butter, light, omega-3 fortified	1 tbsp (0.6 oz)	14	50	0	0	5	0
Butter, light, regular	1 tbsp	14	50	0	0	6	0
Butter flavor sprinkles (Butter Buds, etc)	1 tbsp	6	15	0	2	0	0
Cashews, raw	1/4 cup (1.2 oz)	34	190	5	11	15	1
Coconut oil, extra virgin	1 tbsp (0.5 oz)	14	125	0	0	14	0
Coconut, fresh shredded	2 tbsp (1 oz)	28	180	2	7	18	5
Chia seeds	3 tbsp (1 oz)	28	139	4.4	12.4	10.8	10.7
Essential oil blend (supplement, not for cooking)	1 tbsp (0.6 oz)	-	134	0	0	14.2	0
Flaxseed Oil (supplement, not for cooking)	1 tbsp (0.6 oz)	-	130	0	0	14	0
Flaxseeds, ground	2 tbsp (0.7 oz)	20	93	4	6	6	4.6
Hazelnuts, dried, chopped	1/4 cup (1 oz)	28	182	3.7	4.4	18	1.7
Hemp seeds (hemp hearts)	2 tbsp (1.1 oz)	31	165	11.4	7.2	10.1	1
Macadamia nuts, raw	1/4 cup (1.1 oz)	31	230	3	5	24	2
Mayonnaise, Canola	1 tbsp (0.5 oz)	15	100	0	0	11	0
Mayonnaise, fat-free	1 tbsp (0.5 oz)	15	10	0	3	0	0
Mayonnaise, light, omega-3 enriched	1 tbsp (0.5 oz)	15	50	0	2	4.5	0
Mayonnaise, light, regular	1 tbsp (0.5 oz)	15	35	0	1	3.5	0
Peanuts, raw	1/4 cup (1.2 oz)	34	214	8.6	7.8	18.1	2.9
Peanut Butter, natural (no sugar added)	1 tbsp (0.6 oz)	17	95	4	3.5	8	1
Pecans, halves or pieces	1/4 cup (1 oz)	28	190	3	4	20	3
Pine nuts, dried	1/4 cup (1.2 oz)	34	227	4.6	4.4	23	1.3
Pistachios	1/4 cup (1 oz)	28	164	5.8	7.1	13.7	3.1
Pumpkin seeds, shelled, roasted	142 kernels (1 oz)	28	148	9.4	3.8	12	1.8
Olives, Greek black, pitted*	2 oz	56	100	0.6	4	8	0
Olives, green, pitted*	2 oz	56	100	0	4	10	0
Olive Oil, extra virgin	1 tbsp	-	120	0	0	13.6	0
Salad dressing, olive oil and vinegar	1 tbsp	-	75	0	0.5	8	0
Salad dressing, balsamic vinaigrette w. olive oil, light	2 tbsp	-	45	0	2	4	0
Salad dressing, balsamic vinaigrette, nonfat	2 tbsp	-	5	0	2	0	0
Sesame oil	1 tbsp	-	120	0	0	13.6	0
Sesame seeds, whole, dried	1/4 cup (5.1 oz)	144	190	6	8	17	4
Sesame butter	1 tbsp (0.6 oz)	17	100	3	3.6	9	0
Sesame paste (Tahini)	1 tbsp (0.5 oz)	14	95	4	1.5	9	0.5
Sunflower seed, shelled	1/4 cup (1 oz)	28	170	7	6	15	3
Walnuts	1/4 cup (1.1 oz)	28	200	5	3	20	3

* Botanically speaking, avocados, tomatoes and other plant foods with seeds are fruits. Leaves, stems and roots are vegetables. Legally and traditionally, tomatoes, cucumbers and pea pods are thought of as vegetables. Technically, olives are also a fruit, but are listed in fats due to the fat content

**Grams of Protein Daily For 25% - 50% Protein Diets
At Selected Caloric Intakes**

<u>Calories</u>	<u>25%</u>	<u>30%</u>	<u>35%</u>	<u>40%</u>	<u>45%</u>	<u>50%</u>
1200	75	90	105	120	132	150
1300	81	97	114	130	146	162
1400	75	105	122	140	157	175
1500	87	112	131	150	169	187
1600	100	120	140	160	180	200
1700	106	127	149	170	191	212
1800	112	135	157	180	202	225
1900	119	142	166	190	214	237
2000	125	150	175	200	225	250
2100	131	157	183	210	236	262
2200	137	165	192	220	247	275
2300	143	172	201	230	259	287
2400	150	180	210	240	270	300
2500	156	187	221	250	281	312
2600	162	195	227	260	292	325
2700	169	202	236	270	304	337
2800	175	210	245	280	315	350
2900	181	217	254	290	326	362
3000	187	225	262	300	337	375
3100	194	232	271	310	349	387
3200	200	240	280	320	360	400
3300	206	247	289	330	371	412
3400	212	255	297	340	382	425
3500	219	262	306	350	394	437
3600	225	270	315	360	405	450
3700	231	277	324	370	416	462
3800	237	285	332	380	427	475
3900	243	292	341	390	439	487
4000	250	300	350	400	450	500
4100	256	307	359	410	461	512
4200	262	315	367	420	472	525
4300	269	322	376	430	484	537
4400	275	330	385	440	495	550
4500	281	337	394	450	506	562
4600	287	345	402	460	517	575
4700	294	352	411	470	529	587
4800	300	360	420	480	540	600
4900	306	367	429	490	551	612
5000	312	365	437	500	562	625

**Grams of Carbs Daily For 25% - 55% Carb Diets
At Selected Caloric Intakes**

<u>Calories</u>	<u>25%</u>	<u>30%</u>	<u>35%</u>	<u>40%</u>	<u>45%</u>	<u>50%</u>	<u>55%</u>
1200	75	90	105	120	132	150	165
1300	81	97	114	130	146	162	179
1400	75	105	122	140	157	175	192
1500	87	112	131	150	169	187	206
1600	100	120	140	160	180	200	220
1700	106	127	149	170	191	212	234
1800	112	135	157	180	202	225	247
1900	119	142	166	190	214	237	261
2000	125	150	175	200	225	250	275
2100	131	157	183	210	236	262	289
2200	137	165	192	220	247	275	302
2300	143	172	201	230	259	287	316
2400	150	180	210	240	270	300	330
2500	156	187	221	250	281	312	344
2600	162	195	227	260	292	325	357
2700	169	202	236	270	304	337	371
2800	175	210	245	280	315	350	385
2900	181	217	254	290	326	362	399
3000	187	225	262	300	337	375	412
3100	194	232	271	310	349	387	426
3200	200	240	280	320	360	400	440
3300	206	247	289	330	371	412	454
3400	212	255	297	340	382	425	467
3500	219	262	306	350	394	437	481
3600	225	270	315	360	405	450	495
3700	231	277	324	370	416	462	509
3800	237	285	332	380	427	475	522
3900	243	292	341	390	439	487	536
4000	250	300	350	400	450	500	550
4100	256	307	359	410	461	512	564
4200	262	315	367	420	472	525	577
4300	269	322	376	430	484	537	591
4400	275	330	385	440	495	550	605
4500	281	337	394	450	506	562	619
4600	287	345	402	460	517	575	632
4700	294	352	411	470	529	587	646
4800	300	360	420	480	540	600	660
4900	306	367	429	490	551	612	673
5000	312	365	437	500	562	625	687

Grams of Fat Daily For 10%, 15%, & 20% Fat Diets At Selected Caloric Intakes

<u>Calories</u>	<u>10% (very low fat)</u>	<u>15% (low fat)</u>	<u>20% (moderate fat)</u>
1200	13.3	16.6	26.6
1300	14.4	21.6	28.8
1400	15.5	23.6	31.1
1500	16.6	25.0	33.3
1600	17.7	26.6	35.5
1700	18.8	28.3	37.7
1800	20.0	30.0	40.0
1900	21.1	31.6	42.2
2000	22.2	33.3	44.4
2100	23.3	35.0	46.6
2200	24.4	36.6	48.8
2300	25.5	38.3	51.1
2400	26.6	40.0	53.3
2500	27.7	41.6	55.5
2600	28.8	43.3	57.7
2700	30.0	45.0	60.0
2800	31.1	46.6	62.2
2900	32.2	48.3	64.4
3000	33.3	50.0	66.6
3100	34.4	51.6	68.8
3200	35.5	53.3	71.1
3300	36.6	55.0	73.3
3400	37.7	56.6	75.5
3500	38.8	58.3	77.7
3600	40.0	60.0	80.0
3700	41.1	61.6	82.2
3800	42.2	63.3	84.4
3900	43.3	65.0	86.6
4000	44.4	66.6	88.8
4100	45.5	68.3	91.1
4200	46.6	70.0	93.3
4300	47.7	71.6	95.5
4400	48.8	73.3	97.7
4500	50.0	75.0	100.0
4600	51.1	76.6	102.2
4700	52.2	78.3	104.4
4800	53.3	80.0	106.6
4900	54.4	81.6	108.8
5000	55.5	83.3	111.1

1600 calorie baseline (phase I) meal plan for women

Meal #1

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
shredded wheat cereal	1.5 cups	216	5.4	50.1	2.1
skim milk	1.5 cups	135	12	18	1.5
strawberries	1/2 cup	23	0.5	5.2	0.3
Meal #1 Subtotals:		374	17.9	73.3	3.9

Meal #2

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
oatmeal, quaker oats	2/3 cup	200	10	36	4
egg whites (scrambled)	4	68	14	1.8	0
egg, whole (scrambled)	1	75	6.3	0.6	5
grapefruit	1/2 large	46	0.6	11.9	0.1
Meal #2 subtotals:		389	30.9	50.3	9.1

Meal #3

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
brown rice	3/4 cup	154	3	30	0
chicken breast	3 oz	143	26.5	0	3.8
green beans	6 oz	50	2	12	0
meal #3 subtotals:		347	31.5	42	3.8

Meal #4

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
salmon	4 oz	206	28.8	0	5.8
broccoli	1 cup	46	4.6	8.6	0.4
yams	4 oz	120	2.6	27.3	0.2
meal #4 subtotals:		372	36	35.9	6.4

Meal #5

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
chicken breast	3 oz	143	26.5	0	3.8
light italian dressing	3 tbsp	12	0	3	0
Large mixed green salad	2.0 cups	40	0	10	0
meal #5 subtotals:		195	26.5	13	3.8

Per Meal Averages:

Calories

335.4

Protein (g)

28.6

Carbs (g)

42.9

Fat (g)

5.4

Grand Totals:

Calories	Pro (g)	Carbs (g)	Fat (g)
1677	142.8	214.5	27
	Pro (cal)	Carbs (cal)	Fat (cal)
	571.2	858	243
	Pro (% cal)	Carbs (% cal)	Fat (% cal)
	34.1%	51.2%	14.5%

1600 calorie moderate carb (phase II) meal plan for women

Meal #1

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
oatmeal, quaker oats	2/3 cup	200	10	36	4
Whey protein powder	1.5 scoops	135	26.2	3	2.5
orange	1 med	60	0	15	0
Meal #1 Subtotals:		395	36.2	54	6.5

Meal #2

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
oatmeal, quaker oats	2/3 cup	200	10	36	4
egg whites (scrambled)	4	68	14	1.8	0
egg, whole	1	75	6.3	0.6	5
Meal #2 subtotals:		343	30.3	38.4	9

Meal #3

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
brown rice	3/4 cup	154	3	30	0
chicken breast	3 oz	143	26.5	0	3.8
green beans	6 oz	50	2	12	0
meal #3 subtotals:		347	31.5	42	3.8

Meal #4

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
salmon	4 oz	206	28.8	0	5.8
broccoli	1 cup	46	4.6	8.6	0.4
meal #4 subtotals:		252	33.4	8.6	6.2

Meal #5

Food Item	Quantity	Calories	Pro (g)	Carbs (g)	Fat (g)
chicken breast	3 oz	143	26.5	0	3.8
light italian dressing	3 tbsp	12	0	3	0
Large mixed green salad	2.0 cups	40	0	10	0
flaxseed oil (supplement)	1/2 tbsp	65	0	0	7
meal #5 subtotals:		260	26.5	13	10.8

Per Meal Averages:

Calories

319.4

Protein (g)

31.6

Carbs (g)

31.2

Fat (g)

7.3

Grand Totals:

Calories	Pro (g)	Carbs (g)	Fat (g)
1597	157.9	156	36.3
Pro (cal)	Carbs (cal)	Fat (cal)	
631.6	624	326.7	
Pro (% cal)	Carbs (% cal)	Fat (% cal)	
40.0%	40.0%	20.0%	

This meal plan is only a sample - it is not a prescription

1400 calorie low carb (phase III/contest) meal plan for women

Meal #1

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
oatmeal, quaker oats	2/3 cup	200	10	36	4
Whey protein powder	2 scoops	180	35	4	3
grapefruit	1/2 large	46	0.6	11.9	0.1
Meal #1 Subtotals:		426	45.6	51.9	7.1

Meal #2

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
oatmeal, quaker oats	2/3 cup	200	10	36	4
egg whites (scrambled)	4	68	14	1.8	0
Meal #2 subtotals:		268	24	37.8	4

Meal #3

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
chicken breast	4 oz	198	35.1	0	5.1
green beans	6 oz	50	2	12	0
meal #3 subtotals:		248	37.1	12	5.1

Meal #4

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
fish, rainbow trout	4 oz	170	26	0	6.6
asparagus	10 spears	40	4	6	0
flaxseed oil (supplement)	1/2 tbsp	65	0	0	7
meal #4 subtotals:		275	30	6	13.6

Meal #5

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
chicken breast	3 oz	143	26.5	0	3.8
spinach	1 cup	42	5.4	6.8	0.4
flaxseed oil (supplement)	1/2 tbsp	65	0	0	7
meal #5 subtotals:		250	31.9	6.8	11.2

Per Meal Averages:

Calories

293.4

Protein (g)

33.7

Carbs (g)

22.9

Fat (g)

8.2

Grand Totals:

Calories	Pro (g)	Carbs (g)	Fat (g)
1467	168.6	114.5	41
Pro (cal)	Carbs (cal)	Fat (cal)	
674.4	458	369	
Pro (% cal)	Carbs (% cal)	Fat (% cal)	
45.0%	31.0%	24.0%	

2500 calorie baseline (phase I) meal plan for men

Meal #1

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
shredded wheat cereal	1.5 cups	216	5.4	50.1	2.1
Fat free ("super skim") milk	2 cups	200	20	28	0
grapefruit	1/2 large	46	0.6	11.9	0.1
Meal #1 Subtotals:		462	26	90	2.2

Meal #2

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
oatmeal, quaker oats	2/3 cup	200	10	36	4
egg whites (scrambled)	4	68	14	1.8	0
egg, whole (scrambled)	1	75	6.3	0.6	5
banana	1 medium	105	1.2	26.7	0.6
Meal #2 subtotals:		448	31.5	65.1	9.6

Meal #3

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
brown rice	1 cup	154	4	35	0
chicken breast	4 oz	196	35.1	0	5.1
broccoli	1 cup	46	4.6	8.6	0.4
meal #3 subtotals:		396	43.7	43.6	5.5

Meal #4

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
salmon	4 oz	206	28.8	0	5.8
green beans	6 oz	50	2	12	0
Baked potato	6 oz	157	3.3	36.7	0.2
meal #4 subtotals:		413	34.1	48.7	6

Meal #5

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
beef, extra lean sirloin	5 oz	286	43	0	11.3
asparagus	10 spears	40	4	6	0
yams	4 oz	120	2.6	27.3	0.2
meal #5 subtotals:		446	49.6	33.3	11.5

Meal #6

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
tuna, water packed	4 oz	120	26	0	1
light italian dressing	3 tbsp	12	0	3	0
Large mixed green salad	2.0 cups	40	0	10	0
pita, whole wheat	1 pita	170	6	35	2
meal #6 subtotals:		342	32	48	3

Per Meal Averages:

Calories

417.8

Protein (g)

36.2

Carbs (g)

54.8

Fat (g)

6.3

Grand Totals:

Calories	Pro (g)	Carbs (g)	Fat (g)
2507	216.9	328.7	37.8
	Pro (cal)	Carbs (ca)	Fat (cal)
	867.6	1314.8	340.2
	Pro (% cal)	Carbs (%ca)	Fat (%cal)
	34.6%	52.4%	13.6%

This meal plan is only a sample - it is not a prescription

2300 calorie moderate carb (phase II) meal plan for men

Meal #1

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
barley flakes hot cereal	2/3 cup	220	8	51	2
egg whites (scrambled)	6	102	21	1.8	0
egg, whole (scrambled)	1	75	6.3	0.6	5
grapefruit	1/2 large	46	0.6	11.9	0.1
Meal #1 Subtotals:		443	35.9	65.3	7.1

Meal #2

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
oatmeal, quaker oats	1 cup	300	15	48	6
egg whites (scrambled)	4	68	14	1.8	0
egg, whole (scrambled)	1	75	6.3	0.6	5
Meal #2 subtotals:		443	35.3	50.4	11

Meal #3

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
brown rice	1 cup	154	4	35	0
chicken breast	4 oz	196	35.1	0	5.1
broccoli	1 cup	46	4.6	8.6	0.4
meal #3 subtotals:		396	43.7	43.6	5.5

Meal #4

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
beef, extra lean sirloin	5 oz	286	43	0	11.3
asparagus	10 spears	40	4	6	0
yams	4 oz	120	2.6	27.3	0.2
meal #4 subtotals:		446	49.6	33.3	11.5

Meal #5

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
salmon	4 oz	206	28.8	0	9.2
green beans	6 oz	50	2	12	0
Baked potato	4 oz	105	2.2	24.5	0.1
meal #5 subtotals:		361	33	36.5	9.3

Meal #6

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
tuna, water packed	6 oz	180	39	0	1.5
light italian dressing	3 tbsp	12	0	3	0
Large mixed green salad	2.0 cups	40	0	10	0
meal #6 subtotals:		232	39	13	1.5

Per Meal Averages:

Calories

386.8

Protein (g)

39.4

Carbs (g)

40.4

Fat (g)

7.7

Grand Totals:

Calories	Pro (g)	Carbs (g)	Fat (g)
2321	236.5	242.1	45.9
	Pro (cal)	Carbs (ca)	Fat (cal)
	946	968.4	413.1
	Pro (% cal)	Carbs (%ca)	Fat (%cal)
	40.8%	41.7%	17.8%

This meal plan is only a sample - it is not a prescription

2200 calorie low carb (phase III) meal plan for men

Meal #1

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
oatmeal, quaker oats	3/4 cup	225	11.3	36	4.5
egg whites (scrambled)	6	102	21	1.8	0
egg, whole (scrambled)	1	75	6.3	0.6	5
grapefruit	1/2 large	46	0.6	11.9	0.1
Meal #1 Subtotals:		448	39.2	50.3	9.6

Meal #2

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
oatmeal, quaker oats	3/4 cup	225	11.3	36	4.5
egg whites (scrambled)	6	102	21	1.8	0
egg, whole (scrambled)	1	75	6.3	0.6	5
Meal #2 subtotals:		402	38.6	38.4	9.5

Meal #3

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
yams	5 oz	150	3.2	34	0.2
chicken breast	4 oz	196	35.1	0	5.1
broccoli	1 cup	46	4.6	8.6	0.4
meal #3 subtotals:		392	42.9	42.6	5.7

Meal #4

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
beef, extra lean sirloin	5 oz	286	43	0	11.3
asparagus	10 spears	40	4	6	0
meal #4 subtotals:		326	47	6	11.3

Meal #5

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
salmon	5 oz	257	34.5	0	11.5
green beans	6 oz	50	2	12	0
flaxseed oil (supplement)	1/2 tbsp	65	0	0	7
meal #5 subtotals:		372	36.5	12	18.5

Meal #6

Food Item	Quantity	Cal	Pro (g)	Carb (g)	Fat (g)
tuna, water packed	6 oz	180	39	0	1.5
light italian dressing	3 tbsp	12	0	3	0
Large mixed green salad	2.0 cups	40	0	10	0
flaxseed oil (supplement)	1/2 tbsp	65	0	0	7
meal #6 subtotals:		297	39	13	8.5

Per Meal Averages:

Calories

372.8

Protein (g)

40.5

Carbs (g)

27.1

Fat (g)

10.5

Grand Totals:

Calories	Pro (g)	Carbs (g)	Fat (g)
2237	243.2	162.3	63.1
	Pro (cal)	Carbs (cal)	Fat (cal)
	972.8	649.2	567.9
	Pro (% cal)	Carbs (% cal)	Fat (% cal)
	46.0%	32.0%	22.0%

This meal plan is only a sample - it is not a prescription

**Burn the Fat, Feed the Muscle
Personal Progress Chart**

Week	Date	Bicep	Tricep	Iliac	Back	Sum of skinfolds	Bodyfat	Weight	Lbs fat	LBM	LBM chg	Fat chg	weekly wt. chg	total wt. chg
Start														
Week 1														
Week 2														
Week 3														
Week 4														
Week 5														
Week 6														
Week 7														
Week 8														
Week 9														
Week 10														
Week 11														
Week 12														
Week 13														
Week 14														