

the grappler's guide

john berardi

michael fry



to sports nutrition

for body composition and performance enhancement

The Grappler's Guide to Sports Nutrition

for body composition and performance enhancement

JOHN BERARDI • MICHAEL FRY

© 2005 Science Link, Inc. You may not copy, reproduce, post or forward this document in any format. For permissions and joint venture opportunities, contact John Berardi or Michael Fry at grapplersnutrition.com

Book design by Jason Greci & Phil Caravaggio of dubjective.com

contents

1

The Importance of Good Nutrition for Grapplers

Foreword	Dying to Make It	6
Introduction	The Grappler's Guide to Sports Nutrition	9
Chapter 1	The Intersection What All Good Sports Nutrition Plans Should Accomplish	15

2

The Practice of Good Nutrition for Grapplers

Chapter 2	Nutrition Basics The Rules of Good Nutrition and How to Make Them Practical for Everyday Use	20
Chapter 3	The Superfoods Adding the 21 Superfoods To Your Daily Menu	27
Chapter 4	Workout and Competition Nutrition Eating During Training and Competition for Optimal Results	34
Chapter 5	Supplement Strategies Using Supplements For Unheard of Results	41
Chapter 6	Sample Menus Real-Life Examples of What You Should Be Eating	51

3

Weight Management

Chapter 7	Food and Weight Management Understanding Energy Balance And The Macronutrients.	65
Chapter 8	Cutting Weight Should You Do It and Can It Be Done Safely?	81

4

Beyond the Grappler's Guide

Chapter 9	Get Your Head Straight Outcome-Based Decision Making For Measurable and Maintainable Results	91
Chapter 10	What's Next? Resources for More Great Grappling information	95
About the Authors	Get To Know John Berardi and Michael Fry	96

part 1



The Importance of Good Nutrition for Grapplers

Foreword

Dying to Make It, by Mike Fry

What do Billy Saylor (19 years old) at Campbell University in North Carolina, Joseph LaRosa (22) at the University of Wisconsin-La Crosse, and Jeff Reese (21) at the University of Michigan all have in common?

Unfortunately, they're all dead now; victims of one of the ghastly secrets of college wrestling.

All three young men were engaged in dehydrating practices - trying to lose weight in order to qualify for their first college wrestling matches. Reese was trying to lose 17 pounds so he could wrestle in the 150-pound weight class. His two-hour workout in a rubber suit in a 92-degree room cost him his life. He died of rhabdomyolysis -- a cellular breakdown of skeletal muscle under conditions of excessive exercise, which, combined with dehydration, resulted in kidney failure and heart malfunction. LaRosa was also riding a stationary bike and wearing a rubber suit when he collapsed and died. Saylor was riding a stationary bike in a predawn workout when he suffered a heart attack.

What do their stories have to do with this book?

Well, let me take you on a trip to the not-so distant past of my own grappling career.

When I was in high school, I wrestled for one of the top teams in the state of Michigan. It was a school with a reputation. When a wrestler from this high school stepped on the mat to compete, everyone knew what the outcome was going to be. We were going to beat you and beat you bad. We were a team that had not lost in over 4 years and were riding a 15yr conference winning streak.

And, of course, if you're on a team like this, especially on the varsity team, you do what you need to do. You keep your spot - regardless of how bad it hurts.

One night, during my sophomore year, we were to wrestle a team from the other side of the city. This team was of lesser talent than us and I had taken practice light during the week. As we were getting ready to board the bus, my coach pulled me aside and asked me how my weight was. I told him "Under by 2 pounds...Not a problem coach!" This is where the nightmare began.

I arrived at the host school and stepped onto the scale to find myself over by ½ pound. I remember how I felt - it was panic - "this can't be happening!" And, like all "dedicated" wrestlers of my era, I was off to the bathroom to try to vomit, urinate, and/or defecate my way to a half pound weight loss.

The problem – I hadn't eaten anything all day and, with nothing in my gut, bowels, or bladder to lose, I caught the worst butt-chewing of my career. My coach chided me for "letting the team down," "not taking care of my responsibilities," and more. He sent me to the gym to exercise off that ½ a pound. Unfortunately, I failed to make weight. Even more unfortunately, I vowed to myself that I'd do whatever it took to never again miss making weight.

Fast forward to last summer. I had just returned from training in Brazil and was beginning preparations for the Connecticut Nutmeg State Games. The scales in Brazil told me I was 6lbs over – no problem for the last few days of preparation, right? Well unfortunately, as I returned to the US, just 3 days before my matches, I realized that I wasn't 6lbs over – I was 6kg, or 13 lbs over. I misread the scale and confused kilograms for pounds. And I was screwed!

Even though I knew better; even though I knew the stories of Billy, Joseph, and Jeff, I remembered my promise to my high school coach. I had vowed to do whatever it took to never again miss making weight. So, foolishly, I began a ridiculous (and life endangering) program of starvation, dehydration, and overwork. Yes, I knew better. Yes, I knew the consequences of rapid dehydration and starvation diets. Yes, I knew I was risking my life. But I didn't know what else to do. I wanted to win!

For the next 3 days, I spent between 4-6 hours each day in the 95 degree heat with a trash bag and sweat suit, playing football and soccer. I would then run home, shower, drink a protein shake and go to bed.

The last night before weigh-ins came, I went to the gym one last time for some high intensity cardio. After, I sat in a hot tub to increase my body's core temperature, jumped out, towed off, put on a trash bag and sweats, and went to bed. Of course, I didn't really sleep. I woke up numerous times during the night with massive cramping in my legs due to dehydration.

Crazy, isn't it? You bet! So crazy that I woke up the next day (having made weight) and vowed to NEVER, EVER risk my performance, my family, my job, and my life again. I vowed to contact the right people, the best experts in the world, and figure out how to make weight – the right way.

Now, a year later, I know the right way. With the help of Dr John Berardi and his cutting-edge nutrition expertise, I know how to make weight safely and effectively. I also know how to make weight while keeping all the strength and endurance I've built up during my training season. And this knowledge allows me to dominate on the mat; no more struggling to make weight, no more staying up all night.

Believe me; I know that grappling is a sport that requires its athletes to make sacrifices on a daily basis. But if anyone tells you that you have to sacrifice your nutrition, your health, and possibly your life to make weight, run away – they're ignorant and dangerous. Extreme practices of weight-cutting aren't hard-core and they aren't necessary (nor are they "manly" or the domain of "real" athletes). They're simply what the ignorant do. They're what those who don't know any better do.

Listen, I wish Dr. John and I didn't need to write this book. I wish that all grapplers were healthy, well nourished, and fully hydrated. Most of all, I wish they got the right advice from coaches, teammates, and parents. But they don't. And that's why Dr. John and I are making this book available. That's why this book is necessary. Until the right nutrition information gets out there, until the right weight-cutting information gets out there, athletes will continue to hurt themselves.

Do you want to dominate on the mat?

Then use this book and learn how to lose weight in the most hard-core way of all – the way that helps you step onto the mat at your leanest, most muscular, and strongest; not to mention healthiest. Follow the strategies in this book and you can be confident that while your opponents have suffered, are cramping, are dehydrated, and are weak, you're fresh, strong, and ready to win.

Introduction

By Dr. John M. Berardi

If you're an athlete, this book is for you. Read it and apply the information contained herein and watch as your physique, your health, and your performance dramatically improve.

However, if you're a grappler, not only can this book improve all the things mentioned above, it could quite possibly save your life. Dramatic? Perhaps, but considering many of the current strategies grapplers use to prepare for competition, strategies that have led to the deaths of more than a few young wrestlers, the techniques we'll teach you in this book might just prevent you from suffering the same fate. But this book isn't just for amateur wrestlers. It's for grapplers of all types; mixed martial artists, Pride fighters, even "professional" wrestlers benefit tremendously from all the information we're about to share with you.

The bottom line is this. If you train hard in a combat-type sport, if your sport requires a high strength to body weight ratio, and if you require a high muscle mass to fat mass ratio, you need this book.

So, what are you going to learn? Well, for starters, you're going to learn how to eat properly, day in and day out, during the off-season, during your competitive season, and during competition. Also, you'll learn cutting edge sports nutrition techniques for promoting rapid recovery from training and competition. Importantly, you'll also learn how to take these recommendations and translate them into usable, daily plans of action – knowing exactly how to adjust these plans of action if they're not getting you the results you need to improve.

Let's face it, many athletes and coaches put a lot of thought and care into their training. But nutrition usually doesn't even show up on their radar. This is a huge mistake. Any athlete seeking information on physical and/or mental performance who doesn't also look for integrated nutrition information (that they can put into practice immediately) is missing a large piece of the performance puzzle.

Just how important is nutrition? Of the modifiable factors that can contribute to optimal training and competition performance, nutritional intake can be improved quickly, and the results of this improvement can be seen almost immediately. Training adaptations, technique modifications, and mental preparatory techniques take weeks, months, and years to master and yield results. However, nutritional intake can be changed today; and the results seen tomorrow.

For example, consider the following acute nutritional manipulations.

- Caffeine ingestion prior to competition
- Carbohydrate supplementation during endurance exercise and/or intermittent exercise
- Glucose-electrolyte beverages while training in hot environments, carbohydrate/protein recovery drinks between performance bouts
- Tyrosine supplementation prior to power exercise
- Creatine supplementation in the days leading up to strength and power events

Each of these interventions can have rapid and immediate effects on your training and performance.

Good nutrition also offers long-term benefits. As the right food intake can support both the physical and mental adaptations you expect to gain from your daily training, good nutrition needs to be viewed as an all-the-time thing, an everyday thing. Simply put, eating and supplementing appropriately, day in and day out, can lead to the optimal intake and absorption of the two major food categories: a) macronutrients – which include proteins, carbohydrates, and fats, and b) micronutrients – which include vitamins and minerals.

These macro- and micronutrients are essential to several processes including:

1. Muscle protein turnover (The breakdown of old tissue and the rebuilding of new, more functionally adapted tissue)
2. Nervous system function and recovery (All of your strength and power originates from the nervous system)
3. Immune system function and recovery (You can't train hard and recover properly while sick)
4. Musculo-skeletal system function and recovery (Injury healing and muscle-specific recovery is critical here)

No other non-training athletic intervention can hold as much power over your training adaptations, your body composition, your recovery, and your competition-day performance as good daily nutritional intake can. But don't

just take my word for it. In 2003, the IOC (International Olympic Committee), for the first time in its history, gathered together some of the top nutrition scientists and coaches in the world and formed a nutrition and sports performance consensus statement. This publication was a landmark one, since it's the first time the IOC officially recognized the role that good nutritional intake can play in athletics. Check out what these experts had to say about the relationship between nutrition and performance.

"...The **amount, composition and timing** of food intake can **profoundly** affect sports performance. Good nutritional practice will help athletes train hard, recover quickly and adapt more effectively with less risk of illness and injury..."

"...The right diet will help athletes achieve an **optimum body size** and **body composition** to achieve greater success in their sport..."

"...Athletes will benefit from the guidance of a **qualified sports nutrition professional** who can provide advice on their individual energy and nutrient needs and also help them to develop sport-specific nutritional strategies for training, competition and recovery..."

Despite this consensus, most athletes continue to leave out this critical piece of the performance puzzle. And, in grappling sports, not only is good nutrition often ignored, it's also manipulated in ways that are both dangerous to the athlete's health and damaging to overall athletic performance.

An important question arises; why aren't athletes and their coaches, especially those involved in grappling sports, paying more attention to their nutrition? Instead of allowing their poor nutrition habits to get in the way of their success, why aren't they using good habits as the ultimate performance edge?

From the coach's perspective, several reasons are plausible.

- First, since coaches are often juggling the responsibilities of teaching appropriate movement patterns, emphasizing skill development, and improving energy system efficiency, it's no surprise they find it difficult to also take the time to discuss nutritional intake.

- Secondly, while it's easy to oversee what their athletes are doing for 1-2 hours/day during their training sessions, it's much more difficult to monitor what their athletes are doing during the other 22-23 hours of each day.
- Finally, many coaches are just not comfortable enough with the intricacies of nutrient metabolism and biochemistry to dispense nutritional information to their athletes.

Yet, even with these challenges, most coaches do understand how important targeted nutritional practices are. They also realize that if they fail to learn or communicate this knowledge effectively to their athletes, they will not only place their athletes in a compromised training state, they'll also compromise their own effectiveness as a coach.

But, of course, responsibility doesn't fall squarely on the coach's shoulders. Ultimately it's the athlete's responsibility to take control of their own nutritional intake. So why aren't the athletes doing so?

First, high volumes of training can keep an athlete relatively lean and therefore falsely convince the athlete that he or she is "getting away" with their poor nutritional choices.

Secondly, while training may only take a few hours per day, a good nutrition plan is an all-the-time thing that must be planned for, prepared, and consistently adhered to all day, every day.

Furthermore, an athlete's habits are influenced by the same social pressures that influence a sedentary population. Cultural heritage, family dietary habits, peer pressures, and media influence play roles in all of our food choices and athletes are not excluded.

Finally, since the North American diet is typically rich in highly processed "convenience foods," and athletes (young or adult) tend to be more "on the go" than most of their sedentary counterparts, athletes often develop habits inconsistent with what's necessary to support their training and competitive demands.

Most athletes and coaches in weight class and aesthetic sports like grappling, gymnastics, figure skating, etc have little knowledge of the best practices for weight loss, metabolic stimulation, boosting nervous system and muscular efficiency, feeding the body important nutrients, and the timing of nutrients relative to training and competition, thus they fall back on ineffective nutrition patterns. After making poor food choices day in and day out, and finally

realizing that their body composition is not ideal for competition, they resort to the same ridiculous weight loss practices that desperate dieters everywhere turn to, starvation diets.

For years I've been hired by some of the top athletes and teams in the world in order to both help them avoid such mistakes, as well as create proactive nutritional patterns for the future. Now, you've got me in your corner.

With this book, you're going to learn:

1. How to implement systems of nutritional intake that are actually consistent with how the body works and are congruent with the needs of your sport.
2. Through case studies and sample menus, you'll see just how easy it is to use all the information in this book to generate an effective plan.
3. How to sort out the good, the bad, and the ugly of nutritional supplementation.

Now, as I wrap up this introduction, it's important for me to be clear on what this manual is and what it's not. First, what it's not. This book is not an exhaustive discussion of every single detail and aspect of nutritional prescription and biochemistry. Such a discussion goes far beyond the scope of a single book. After all, it's taken us years of research, decades of study, and hundreds of thousands of dollars of tuition to learn what we currently know. To put all of this into a single book (or even a volume of books) would be nearly impossible.

Next, what it is. This book is designed to help you accomplish 2 specific goals.

1. Teach you what you need to know to avoid the typical energy, macronutrient, and micronutrient deficiencies seen in athletes attempting to follow the typical North American diet while engaging in strenuous exercise or sport performance.
2. Introduce the best nutritional tools, including weight loss strategies, supplement strategies, etc for the grappling trade. This is information that all grapplers, at any age, can use right away.

Beyond these things, if you have highly individualized needs, the assistance of a sports nutrition professional, one trained in both exercise science and nutrition, is required. If you're looking for such a professional, check out the last chapter of the book, Chapter 10: What's Next. There you'll learn how to get in touch with me and the many ways I can assist you further with your individual needs.

The Intersection

What All Good Sports Nutrition Programs Should Accomplish

An important question to ask whenever discussing nutritional intake, for any desired outcome, is the following: "**what do I hope to accomplish with my nutrition plan?**" If, in response to this question, your answer is of the following: weight loss, muscle gain, a boost in performance, or improved health – I hate to break it to you – but your answer is incomplete, maybe even dangerous.

I know what you're thinking: "again with the dramatics?" Think again. Better yet, ask a young female athlete whose bone density is diminishing by the day and will likely suffer from a broken hip at a comparatively early age. Or ask a man in line for bypass surgery in his mid 40's who, after years of starvation diets designed to help him make weight for wrestling competition, has ended up fat with a depressed metabolism, diabetes, and heart disease. If you think these problems aren't nutrition related, you're fooling yourself. And if you think you're too young to concern yourself with these things, consider the following statistics:

In the 1950's the U.S. military performed autopsies on casualties during the Korean War. Nearly 77% of the young men age 18 to 24 had significant occlusion of their coronary arteries.

Recent studies demonstrated that over half the children aged 10 to 14 had fatty streaks in their blood vessels and in 8% of them those streaks were beginning to look similar to the atherosclerotic plaque found in adults.

Atherosclerotic plaque occurs in nearly 90% of all adult men and women over the age of 45 and is responsible for a large percentage of heart disease related deaths.

Also, consider this story.

Greg and Ozzy were brothers, one year apart in age, and were competing in high school wrestling at 112lbs (Greg) and 119lbs (Ozzy). Coming into the season, it was clear that Greg would not make his weight of 112lbs. So Ozzy stepped up for his brother and decided to cut the weight. Ozzy would wrestle at 112lbs and Greg would wrestle at 119lbs. The problem - Ozzie didn't have much weight to lose (he was already VERY lean), nor did he know how to lose weight safely.

For the next 4 months, Ozzie starved himself. He would take every meal to the weigh-in scale and weigh it. He'd also weigh himself before and after eating to see how each meal affected his weight. In the end, he spent a miserable year trying to maintain a weight much too low for his body type.

Of course, there are many problems associated with this type of disordered eating – many of which we'll discuss later in this book. However here's the lasting one. Today Ozzy stands at 5'6" tall, 200lbs, and well over 20% body fat. After starving for so long, his metabolism was ruined. Now that his competitive days are over, he's overweight and can't do much about it.

So, as hinted at above, a single-minded focus on "performance" or "weight loss" or "health" might actually produce negative consequences. For example, in Ozzy's case, he was so focused on body composition (weight specifically) that he compromised his performance and his health. That's what we mean when we say it's possible to design a nutritional program focused on improving body composition alone that actually reduces both health and athletic performance. Consider low calorie diets. These diets tend to reduce body mass, often desirable in athletes and non-athletes alike, but while dropping body mass, these diets can also reduce bone density (certainly a negative health outcome) and can reduce muscle mass and strength (which, of course, will reduce sport performance markedly).

So, while on a low calorie diet you might "drop weight," but the outcome still isn't ideal since this drop in weight is accompanied by health and performance declines. Again, not an ideal outcome since weight loss can be accomplished, along with improvements in health and athletic performance, with a well-designed nutritional program.

Ok, so you're not going to make the same mistakes Ozzy did. But here's something else to be cautious of. It's possible to devise a nutrition program focused on improving health alone that actually reduces athletic performance. Consider low carbohydrate diets. These diets tend to reduce blood sugar, which is generally regarded as "healthy," but also lead to low muscle glycogen concentrations (muscle carbohydrate stores), which can negatively impact certain types of sport performance. If you're involved in an intermittent sport (basketball, hockey, grappling, etc) or an endurance activity, low muscle glycogen will absolutely kill your performance; not at all what an you're after, regardless of the drop in blood sugar, as it's possible to improve both health and sport performance with a different type of eating plan.

Ok, so very low carb and very low calorie diets are out. What else? Well, it's also possible to design a nutrition program that improves performance yet actually reduces health and negatively affects body composition. For example, high carbohydrate diets that are full of simple sugars and devoid of fiber and micronutrients can improve muscle glycogen, increasing muscle energy stores, but can also increase body fat and, over time, induce insulin resistance. This outcome is not desirable either, as muscle glycogen

concentrations can be maximized without negatively affecting body composition and health.

Ok, we know what you're thinking "so high carb diets are out too?! Well then what can we eat?" We'll get to that later in this book. For now, however, it's important to recognize that all good nutrition programs focus on 3 goals simultaneously:

Goal #1 – Improved health

Goal #2 – Improved body composition

Goal #3 – Improved performance

As indicated above, it's relatively easy to focus on one of these three goals, and that's why many nutritionists or athletes just piddling around with their diet tend to only focus on one of the three. Unfortunately, this short sighted approach to nutrition design is never in the athlete's best interest, it never accomplishes what the athlete really needs.

Athletes must be healthy to compete. Their immune systems must be resilient, their blood vessels must be compliant, and their metabolic, muscular, and nervous systems must be in tip top shape.

An athlete also needs to be the right size for their sport. Not only do they need to be an acceptable competitive weight, they also need to have a good power to weight ratio and a good muscle to fat ratio.

Finally, athletes need to be able to train hard, recover quickly, and compete at the top of their game.

While training plays into all three needs of the athlete, nutrition ensures that the athlete has enough strength, muscle power, and fuel (energy) to successfully compete. Therefore the right nutrition plan meets all three criterion; improving health, improving body composition, and improving performance. Any sports nutrition program simply has to be designed with these goals in mind – all of them. We'll teach you how to do just that in this book.

wrap-up

- Athletes need to have the right body weight, strength to weight ratios, and muscle to fat ratios to be successful.
- Athletes also have to have enough fuel to compete successfully.
- Athletes must consider health when chasing the previous 2 goals or else their careers (or even seasons) will be short-lived.
- All great sports nutrition plans accomplish 3 goals at the same time: optimal performance, optimal body composition, and optimal health.
- Any nutrition plan that focuses on only 1 of the 3 goals above is incomplete and even potentially dangerous.

part 2



The Practice of Good
Nutrition for Grapplers

2

Nutrition Basics

Let's begin again with a question – “what are your rules of good nutrition?” In other words, what types of things must you absolutely do to succeed – and what types of things must you avoid? Seriously, take a moment and think about it. What rules do you think you'll need to follow if you want to eat in the absolute best way for your sport – a way that will improve the way your body looks, the way it feels, the way it moves, and the way it recovers?

Come up with that list in your mind right now.

Now that you've considered these rules, we want you to take a second and think about your list. Specifically, think about where you learned these rules. Certainly your rules have been influenced by how you were raised. They've been influenced by your experiences dining with friends and relatives. Of course, no set of nutrition rules is immune to media influences. And, no doubt, your nutrition rules have probably been influenced by your own past attempts at changing your body – whether you've been successful or unsuccessful. We could sit here all day and list potential nutritional influences, but we'll stop here since there are probably hundreds of them and to talk about them all would bore your socks off.

In the end, it's likely that very few of your own “Good Nutrition Rules” have been influenced by those who know anything about good nutrition for health, let alone about body composition and sports performance success. And worse yet, it's likely that most of those rules have been hammered home without you even knowing it. So let's get serious here and let's change those rules. Do you really want Dr Phil influencing the way you eat for grappling performance? Or Oprah? Or Richard Simmons? Or your grade school lunch lady?

Now we'll admit it. Changing the rules – just like changing your habits – is difficult to do. Not only does it take a desire to change – we call this the “want to” change – but it also takes a strategy for change – called the “how to” change. Sure, the “want to” is all your own and it's probably why you're reading this book.

The “how to” – that's what we do best. With projects like johnberardi.com and grapplersgym.com we've not only committed our careers to helping motivate people's “want to,” but also to arming people with the best “how to” in the business. It's amazing to see clients literally reshape their bodies by combining a strong “want to” with a strong “how to.” Clients improve the way they eat, the way they sleep, the way they look, the way they feel when they wake up in the morning, and the way they perform. So let's talk “how to.”

In this section, we're going to teach you the 10 nutrition rules that we've found to make the biggest difference in our own clients. We call these rules "The 10 Habits." Consistent application of all 10 of these habits will guarantee big long-term results.

Habit #1 - Feed Every 2-3 Hours.

Most North Americans eat somewhere around 3 meals a day. Since you're much more active, it only stands to reason that you'd need to eat a little differently than they're eating. Further, I'd imagine their physiques are not the physiques you wish to emulate. So, perhaps you'll need a different approach.

As research has demonstrated, feeding every 2-3 hours is important for many things. Regular feeding intervals stimulate the metabolism, balance blood sugar, and improve health, body composition, and performance. So, make sure that when it comes to eating, you jump on the every 2-3 hour train.

Now I know a couple of questions have probably come to mind:

First, how many meals per day should you be eating? That's easy - just divide the time you're awake (say, 15 hours) by 3.

Next, should you eat before bed, before exercise, etc? For that one just keep the rule in mind and eat every 2-3 hours. If it's bed time and it's time to eat, take that feeding opportunity!

Finally, how big should your meals be? Well, here's a tip that'll help you determine what you should be eating every 2-3 hours. Rather than thinking of your feedings as "snacks" or "meals," think in terms of *feeding opportunities*. In other words, every time you feed you have the opportunity to make your body better or make it worse. Use the remaining 9 habits below to ensure that you make the most of your feeding opportunities, and make sure they come every few hours.

Habit #2 - Ingest Complete, Lean Protein With Each Feeding Opportunity.

Later in this chapter, the topic of protein intake will be discussed more comprehensively. However, for now, understand that with all the potential benefits we'll discuss, it's critical to ingest some complete, lean protein with every feeding opportunity. Again, we'll list some sources of lean, complete protein in a minute. But get this idea straight first – make sure that every time you eat there's a serving of protein involved. By doing this, you'll be sure to maximally stimulate your metabolic rate, improve your muscle mass and

recovery, and reduce your body fat. Keep in mind that protein is not limited to just breakfast, lunch, and dinner. EVERY feeding opportunity, every 2-3 hours, should contain complete, lean protein.

Habit #3 - Ingest vegetables with each feeding opportunity.

This is something your mom and grandma have been harping on for years so it's about time scientists have finally caught up. Science has demonstrated that in addition to the vitamins and minerals (micronutrients) packed into veggies, important plant chemicals (phytochemicals) that are essential for optimal physiological functioning also are present.

Even more interesting, vegetables (and fruits) provide an alkaline load to the blood. Since both proteins and grains present acid loads to the blood, it's important to balance these acids with alkaline rich vegetables and fruits. Too much acid and not enough alkalinity means the loss of bone strength and muscle mass. So make sure you're keeping balanced! A simple way to ensure you're getting enough vegetables is to be sure that you're getting 1-2 servings of veggies with every feeding opportunity – every 2-3 hours.

Habit #4 – Eat veggies and fruits at any feeding; “other” carbs mostly after exercise.

Another way of saying this is: eat non-fruit and vegetable carbohydrates (including simple sugars, sports drinks as well as starchy carbohydrates such as rice, pasta, potatoes, quinoa, etc) during and within the few hours after exercise only. Want to eat bread, pasta, rice, sugar, etc? If so, you can. Any nutrition plan for athletes that excludes these foods is too hard to follow and, in some cases, can decrease performance. Just be sure you save them until after exercise.

But can't these carbs make you fat? Not as long as you're sure to save them for the workout and post-workout periods. Your body's carbohydrate tolerance is best during exercise and the few hours after exercise, thus the majority of your daily carbohydrate energy should come during these times. During the rest of the day, stick with carbohydrate sources like vegetables and fruits. These foods are alkaline, contain more fiber, have a higher micronutrient/macronutrient ratio, produce a smaller insulin response, and better manage blood sugar.

Habit #5 – Eat healthy fats daily.

About 30% of an athlete's diet should come from fat. However, special care should be made to ensure that this intake is balanced between saturated,

monounsaturated, and polyunsaturated fat. A goal of 1/3 saturated, 1/3 monounsaturated, and 1/3 polyunsaturated fat is recommended. By balancing out your fat intake, health, body composition, and performance can be optimized.

Eating this way is fairly easy. By focusing on adding the healthy monounsaturated and omega 3 fats into your diet, you'll easily balance out the saturated and omega 6 fats so prevalent in the North American diet.

One important recommendation is to include fish oil supplements in your nutrition plan. This is something we recommend to nearly every man, woman, and child as fish oil supplements improve body composition and protect against heart disease, cancer, diabetes, and more.

Type of Fat		Common Names (# of Carbon)	Prominent Sources
Saturated Fats		1) Myristic Acid (14) 2) Palmitic Acid (16) 3) Stearic Acid (18) 4) Arachidic Acid (20) 5) Lingoceric Acid (24)	1) Coconut and Palm oils 2) Animal fats 3) Animal fats 4) Peanut oil 5) Animal fats
Monounsaturated Fats		1) Palmitoleic Acid (16) 2) Oleic Acid (18)	1) Fish oil 2) Plants and animals
Polyunsaturated Fats	Omega 3 Fats	1) Alpha Linolenic Acid (18) 2) EPA (20) 3) DHA (22)	1) Plant fats – flaxseeds and flaxseed oils 2) Fish oil 3) Fish and other animal
	Omega 6 Fats	1) Linoleic Acid (18) 2) Arachidonic Acid (20)	1) Corn, safflower, soy 2) Animal fat
Trans Fats		1) Hydrogenated Vegetable Oils	1) Processed vegetable fat

Dietary Fat Types, Common Names, and Food Sources. Try to get 1/3 of your fat from saturated fats, 1/3 from monounsaturated fats, and 1/3 from polyunsaturated fats. Also, try to avoid trans fats.

Habit #6 – Most calorie-containing drinks (aside from workout nutrition) should be eliminated.

Fruit juice, soda, and other sugary beverages should be eliminated from the diet. Even fruit juice? That's right. While many people believe that fruit juice is a healthy alternative to soda, fruit juices offer very little in the way of good nutrition and are certainly no substitute for fruits and vegetables. As the

micronutrient/macronutrient ratios of sodas and fruit juices are abysmal, athletes should be eating their calories and drinking water as their habitual beverage – especially athletes who lose a lot of water, through sweat, during their training and competition. The few exceptions, as you'll read about below, are supershakes and workout drinks.

Habit #7 – Eat whole foods instead of supplements whenever possible.

Most of an athlete's food intake should come from high quality whole food sources that conform to the other 9 habits listed here. While there are certain times where liquid nutrition or bars are useful (during and immediately after exercise, as well as when traveling), an athlete's daily dietary intake should be composed of whole, largely unprocessed foods. And when it comes to vitamins, minerals, and phytochemicals, no pills can even come close to what good old fruits and veggies contain. So skip the multi-vitamin and, instead, eat an extra few servings of fruits and veggies each day.

Habit #8 – Plan to break the rules 10% of the time.

An important thing to remember is this – your diet doesn't have to be perfect 100% of the time. In fact, it's even important to have foods or feeding opportunities that don't necessarily follow the rules above. In all our years of working with athletes we've learned that 100% nutritional discipline is never required for optimal progress. The difference, in results, between 90% adherence and 100% adherence is negligible. You just have to be sure you're clear on what 10% really means. For example, if you're eating 6 times per day for 7 days of the week – that's 42 feeding opportunities. Since 10% of 42 is about 4, you get to eat 4 "imperfect" feeding opportunities per week; these imperfect feeding opportunities include both "junk food" and even skipped feedings. Therefore, if you break 1 of the 10 rules, that counts as one of your 10%. So don't waste your skips by missing a feeding. Schedule your 10% feeding opportunities and enjoy them. Then, with your next feeding opportunity, get back to the rest of the habits.

Habit #9 – Plan ahead and prepare feedings in advance.

The hardest part about eating well isn't necessarily understanding which foods are good and bad. Nor is it understanding proteins, carbs, and fats. Nor is it understanding when to eat certain foods. Rather, the hardest part is making sure the 8 rules above are followed consistently. Sometimes good nutrition is not about the food as much as it is about making sure the food is available when it's time to eat.

Athletes should come up with food preparation strategies in order to ensure that they can consistently get the nutrition they need, when they need it. Whether that means cooking a bunch of feedings on Sunday for the upcoming week, getting up 30 minutes earlier and preparing feedings for the rest of the day; or hiring a food preparation service to prepare feedings for you, it's critical to have a plan. As the old cliché very accurately states, "failing to plan is planning to fail."

Habit #10 – Eat as wide a variety of good foods as possible.

Most of us eat in a very habitual manner, ingesting similar breakfasts, lunches, and dinners day in and day out. Boring, but easy.

By establishing the habits above as the norm, it will eventually be easy to follow them. However, it's also important to balance out this daily habit with seasonal foods and healthy variety. Find healthy alternatives to the foods you habitually eat. Use your 10% feedings as great chances to eat a variety of non-habitual foods. Also, be sure to use a variety of protein sources, fruit and vegetable sources, etc. and rotate through them periodically.

One great strategy for doing this is to pick up a copy of Gourmet Nutrition (www.gourmetnutrition.net). This book provides a summary of the good eating habits we share with you here and provides over 100 recipes demonstrating how to put these habits into action.

wrap-up

While the 10 Habits above are simple, in order to help our athletes better stay on track with them every day, we've created a "cheat sheet" (below) that we have them carry in their wallets (or in their purses). When it's time to plan, prepare, or order food, they consult the cheat sheet to make sure they're sticking to the habits. And each time they use this cheat sheet, they reinforce this new and better way of thinking about food. Eventually these athletes don't need the sheets any longer; their habits have been changed – for life.

1. **When did you last eat?** If it's been longer than 2-3 hours, feed immediately.
2. **Where is the complete protein?** Are you about to eat at least 1 serving of complete protein? If not, find some protein.
3. **Where are the veggies?** Are you about to eat at least 1-2 servings of veggies? Prepare them anyway you like, but eat them with every feeding opportunity.
4. **Where are the carbs?** If you haven't just worked out, put down the pasta, bread, rice, etc in favor of fruits and veggies. If you have just worked out, a mix of carb sources is fine.
5. **Where are your fats coming from?** Today you need some fat from animal foods, from olive oil, from mixed nuts, and from flaxseed oil. Spread them throughout the day.
6. **Did you take your fish oil yet?** Make sure you don't miss taking a capsule or two with each feeding opportunity.
7. **Are you drinking water or green tea?** Avoid the calorie containing drinks; send back the soda or other sugary drinks.
8. **Are you breaking the 10% rule?** Are you breaking any of the rules above? If so, count this feeding opportunity as part of your 10% & think about how you'll get back on track.

3

The Superfoods

When talking eating, most nutrition experts talk in terms of calories, proteins, carbohydrates, and fats. This habit has trickled down to non-nutrition experts as well. This is unfortunate because one important lesson we try to teach all of our clients is this - we don't eat calories, proteins, carbohydrates and fats!

So then, what do we eat? Although we sometimes get wrapped up in the technical terms, we usually forget the fact that we still eat plain ol' food. Why make this point? Well, one problem associated with the calorie and macronutrient focus so popular in the media today, is that a big disconnect between knowledge and practice easily develops.

For instance, it's all fine and good to know you should be eating a diet that's 30% fat. But what good is that information if you don't even know how much fat is in your current diet? How useful is that percentage if you couldn't even calculate how much fat is in your current diet if you wanted to? That's right, we've seen too many athletes (non-athletes too) speak pseudo-knowledgably about proteins, carbs, and fats only to completely miss the boat when it comes to actually eating the macronutrients they know they're supposed to be eating. It's important to know both which macronutrients are important and which foods contain these macronutrients.

Using the 10 habits discussed in the last chapter as a guide, presented below is a food list for each category of habit. This list will help you better categorize which foods should be eaten and when.

Proteins

Lean, Complete Proteins (Eat with each feeding opportunity)

Lean meats (ground beef, chicken, turkey, etc.); fish (salmon, tuna, etc.); eggs (egg whites); low fat dairy (cottage cheese, yogurt); milk protein supplements (whey, casein, milk protein blends).

Carbohydrates

Simple Sugars (Eat only during and after exercise, if at all)

Soda, fruit juice, table sugar, sports drinks, breakfast cereal (some varieties), etc.

Starchy Carbohydrates (Eat mostly after exercise)

Bread, pasta, rice, potatoes, oats, cereal grains (wheat, rye, etc), etc.

Fruits and Vegetables (Eat with each feeding)

Spinach, carrots, tomatoes, broccoli, cauliflower, apples, oranges, avocados, berries, etc.

Fats

Saturated Fats (About 1/3 of total fat intake)

Animal fats (fat in eggs, dairy, meats, butter, etc.), coconut oil, palm oil, etc.

Monounsaturated Fats (About 1/3 of total fat intake)

Olive oil, nuts, avocado, etc.

Polyunsaturated Fats (About 1/3 of total fat intake)

Vegetable fats, flax seeds/oil, fish oil, etc.

The 20 Superfoods

When some people think of eating well, they often use words like “watching what I eat.” The idea of “watching what you eat” however, has become synonymous with eliminating foods from your diet. If you want to achieve the optimal intersection of health, body composition, and performance, this is a mistake. The best nutrition programs offer additions, not subtractions. In other words, they teach you which foods you should be eating more of. Spend most of your feedings eating from the “good foods” list and you won’t have much time for those on the “bad foods” list.

To give you a head start, listed below are 20 great foods you should absolutely include in your daily plan. These foods fit nicely into the 10 Habits above.

1. Lean Red Meat (93% lean, top round, sirloin)
2. Salmon
3. Omega 3 Eggs
4. Lowfat, plain yogurt (lactose-free if you can find it)
5. Supplemental Protein (milk protein isolates, whey protein isolates, or rice protein isolates)
6. Spinach
7. Tomatoes
8. Cruciferous Vegetables (Broccoli, Cabbage, Cauliflower)
9. Mixed Berries (a variety of different types of berries including strawberries, blueberries, raspberries, etc)
10. Oranges
11. Mixed Beans (a variety of different types of beans including kidney, navy, white, etc)
12. Quinoa (Ancient grains)
13. Whole Oats (large flake)
14. Mixed Nuts (a variety of different types of nuts including pecans, walnuts, cashews, brazil nuts, etc)
15. Avocados
16. Olive Oil (extra virgin)

17. Fish Oil (salmon, anchovy, menhaden)
18. Flax Seeds (ground)
19. Green Tea
20. Liquid Exercise Drinks (quickly digested carbohydrate and protein)

If you're curious as to why these foods are so super, check out the list below.

Protein Foods

Lean Red Meat (93% lean, top round, sirloin)

In addition to being a great metabolism boosting protein source, red meat is full of B-vitamins, the most absorbable iron, CLA (a fat-burning fatty acid), and creatine (for muscle building).

Salmon

Salmon offers the dynamic duo of fat burning – protein and fish oil. At this point, you should know all too well that protein does a great job of revving the metabolism. But what you might not know is what fish oil can do for you. According to numerous research studies, the right amount of the kind of omega 3 fats found in fish oil can boost metabolism by a whopping 400 calories each day. It does this while fighting diabetes, heart disease, and cancer. Better eat your fish.

Omega 3 Eggs

Omega 3 eggs pack a similar one-two, protein, omega 3 punch. Protein plus the heart-healthy, disease fighting, metabolism boosting omega 3 fats is a hard combo to beat. Don't fear the yolk, that's where the omega 3s are.

Low-fat Plain Yogurt (lactose-free if you can find it)

Yogurt is a smooth and creamy way to boost the protein and calcium content of your diet. You already are wise to the benefits of protein. Eat yogurt and you also get some great calcium. Research from the University of Tennessee shows that increased calcium intake speeds the metabolism and promotes fat loss. That's right, calcium is not just for bones and teeth.

Supplemental Protein (milk protein isolates, whey protein isolates, or rice protein isolates)

Supplemental protein powder powers up your metabolism in a quick, easy, and convenient way. Can't get a feeding? No problem. Whip up a shake and get the muscle building, metabolism boosting power of protein without having to cook food. For an extra calcium and antioxidant boost throw in some yogurt and berries.

Carbohydrate Foods

Spinach

Spinach ranks top of the veggie list because of its strong base content. A spinach salad or some cooked spinach can neutralize nearly any dietary acid-forming food and that's good for the bones and the muscles. Spinach has also got fiber to improve gastrointestinal health and promote fat loss. It's also got folic acid for reducing the risk of heart disease, cancer, and memory loss with aging. Popeye was right; you'd better eats your spinach!

Tomatoes

In addition to being good tasting, full of fiber and vitamin C, cooked tomatoes (even those in tomato sauce) are rich in lycopene. Increase your lycopene intake and enjoy a 50% reduction in heart disease risk and risk of prostate cancer.

Cruciferous Vegetables (Broccoli, Cabbage, Cauliflower)

These veggies contain a special class of nutrients called indoles that have been found to protect against a variety of cancers, balance hormonal status, and offer antioxidant benefits. When mother nature made these veggies, she also added in some fiber for good measure. Next time you sit down to a feeding; put aside your salad in favor of a vegetable medley.

Avocados

Avocados are actually fruits, not vegetables. Surprised? Well how about this, avocados are probably the healthiest fruits on the block. Avocados contain a heaping portion of B-vitamins, fiber, folic acid, and zinc (among other nutrients). And of course, let's not forget the monounsaturated fats in avocados. These are the same healthy fats we find in olive oil. While it should be obvious these are darn good for you, here's a hot tip. The zinc thing is big for men, since zinc status is related to testosterone production.

Mixed Berries (Strawberries, Blueberries, Raspberries, etc.)

Berries are one of the best antioxidant foods around. In fact, they rank highest in their ability to soak up those nasty, cell-damaging oxygen free radicals. If you want to reduce the signs and symptoms of aging, berries are one of your best choices.

Oranges

Oranges are best known for what? Their vitamin C content, of course. But they also happen to be great sources of fiber as well as folic acid. An orange a day may keep the doctor away.

Quinoa (Ancient Grains)

The nutritive properties of quinoa have given it the title of super grain. Even back as far as the Incan empire, Inca warriors fed themselves quinoa to make them strong for work and battle. This is due to the fact that quinoa is rich in a variety of energy-producing vitamins and minerals calcium, magnesium, iron, phosphorous, and B-vitamins. In addition to these benefits, quinoa is one of the only grains that provide complete protein. Finally, since quinoa contains no gluten, it's the best grain for those with gastrointestinal problems with other grains.

Whole Oats (Large Flake)

Oats and quinoa run neck and neck for the title of healthiest grain, so make sure you include both of them in your diet. Oats have a low glycemic index therefore they control blood sugars well. They are also rich in the B-vitamins and vitamin E, are hypoallergenic relative to wheat and other grains, and contain more soluble fiber than any other grain. Just remember, though, you'll want to save your grains for the post-exercise period. That's when your body best tolerates carbohydrates.

Fat Foods

Mixed Nuts (Pecans, Walnuts, Cashews, Brazil Nuts, etc.)

While nuts used to be considered bad news because of the fat, we now know nuts are one of the healthiest foods around. Eating nuts regularly has been shown to decrease the risks for several diseases (including heart disease) and to promote weight loss. This is due to the fact that nuts are rich in dietary fiber, magnesium, copper, folic acid, potassium, and vitamin E. In addition, they're loaded with healthy polyunsaturated and monounsaturated fats to speed up metabolism. You're nuts if you don't eat your nuts.

Extra Virgin Olive Oil

It should come as no surprise that this cornerstone of the Mediterranean diet is on our healthy foods list. The monounsaturated fats that come from olive oil play a role in reducing the risk for all sorts of diseases. In addition, they speed up metabolism. Prepare your feedings with olive oil and pretend you're dining on the coast of the Mediterranean.

Fish Oil (Salmon, Anchovy, Menhaden)

The specific fats (EPA and DHA) in fish oils are considered, by some experts, a cure-all. Fish oil supplementation has been shown to reduce depression, protect against virtually every disease of modern society, boost muscle mass, reduce body fat, and to speed up metabolism. Taking 6-10grams of fish oil (via supplements) per day is the best way to fast track yourself to all of these benefits. So swim upstream with the salmon for a lean body.

Flax Seeds and Flax Seed Oil

Flax seeds and flax seed oils should be a daily part of your diet. These products contain the heart-healthy omega 3 fats you keep hearing so much about. As mentioned, these oils have been shown to have benefits in disease reduction, improving intelligence, reducing depression, boosting metabolism and increasing muscle building. Heck, they've even been shown to reduce the symptoms of menopause in women. Flex those muscles with flax.

Liquid Drinks

Green Tea

There's an old Chinese saying that goes "Better to go without food for a week than green tea for a day." And those Chinese were onto something. Green tea offers too many benefits to name: from cancer prevention to fat loss from improved blood sugar, to better blood circulation. Live longer and better by drinking your green tea.

Liquid Exercise Drinks (Quickly Digested Carbohydrate and Protein)

Liquid recovery drinks offer more than just muscle recovery. They also improve bone mass and immune function. These quick digesting, targeted nutrition drinks make it much easier to reap all the rewards you deserve from your exercise program. When it's time to go workout, make sure you don't leave home without them.

wrap-up

- We eat food, not calories, proteins, carbs, and fats. So rather than speaking in nutrition science terms, speak in food terms - meat, oranges, oats, and other foods.
- Nutrient timing strategies are important as the body handles different nutrients best at different times of the day. If you pay attention to how much you eat, what you eat, and when you eat, you can more easily control your body composition.
- Some foods are better than others and a great criterion for evaluation is this one –the micronutrient to calorie ratio. Those foods with a higher micronutrient (vitamin and mineral) to calorie ratio offer more nutritional bang for your buck.

4

Competition Nutrition

Ask most people what sports nutrition means to them and they'll usually mention something about the pre-game feeding. They'll also mention something about Gatorade (glucose-electrolyte drinks). In mentioning these two things they're essentially referring to, what we call, workout and competition nutrition – the stuff you eat and/or drink during and prior to competition. This section will delve into the specifics of what your workout and competition nutrition should look like.

Workout Nutrition

We'll begin with workout nutrition as it might be the most important sport-specific nutrition idea you take from this book. While good nutrition principles (i.e. the 10 Habits) can be used with much success by athletes and non-athletes alike, workout nutrition strategies are the realm of the serious athlete. Here's why: during and after both training and competition, a couple of things are happening, things that require nutritional intervention.

The energy demands on your body are high. To produce the rates of muscle contraction necessary for sports activities, a lot of energy is required to fuel the muscles.

Your fluid needs increase. With muscular work comes heat production (remember, calories are energy and when energy is liberated, heat is produced). Add the heat the body produces to perform exercise to the heat of the external environment and you've got a body in need of cooling. Since humans sweat to cool themselves (sweat evaporates to dissipate heat), body water is lost. This water must be replaced (see below).

Your insulin sensitivity/glucose tolerance is dramatically improved. Insulin sensitivity/glucose tolerance is just a simple way of discussing your ability to handle carbohydrates. When insulin sensitivity/glucose tolerance are high, your body takes carbohydrates up into the muscles and the liver easily and efficiently (this is a good thing). Since the post exercise period is marked by the greatest boost in insulin sensitivity you'll see all day, this is a great time to eat carbs (and for them to get to your muscles for recovery).

Your muscles are primed for muscle repair and growth. Some people call the post-workout period the "anabolic phase." When carbs and amino acids are provided, the muscles are forced to enter an anabolic state, a state characterized by muscle repair and muscle growth.

As you might imagine, each of the physiological phenomena listed above requires some sort of feeding strategy. Feeding during and after exercise ensures adequate energy is available to fuel your performance and promote

recovery from your performance. Make this feeding liquid and you'll be preventing dehydration and rehydrating the body properly.

So the question comes up: What should you be feeding during and after the exercise period?

As a starting point, athletes should begin by sipping a liquid carbohydrate protein drink immediately prior to or during exercise. Further, immediately after exercise, a similar drink should be consumed.

This drink should contain rapidly digesting protein (whey protein or whey protein hydrolysates) and carbohydrates (dextrose or maltodextrin), as well as some BCAA (branched chain amino acids).

Exercise beverages should be diluted to 6 – 12% concentrations (60 – 120g of drink per 1000ml water). These concentrations have been proven to be most effective for rehydration purposes.

The drinks should provide approximately 0.8g carbohydrate/kg of body mass and 0.4g protein/kg body mass. Of course, as discussed earlier, experimentation with differing amounts of energy is important to determine the best composition for each individual athlete. So being with 0.8g carbohydrate/kg of body mass and 0.4g protein/kg body mass and experiment from there.

To give you a heads up, the best product on the market, a product that meets both of these needs and has been shown to promote recovery in laboratory studies, is a product called Biotest Surge.

So why these recommendations?

As indicated earlier, during the workout and post workout periods, insulin sensitivity/glucose tolerance is improved and, as a result, the efficiency of glycogen storage is highest at this time. This makes the workout and post workout periods the best times to ingest a large amount of carbohydrate and protein. In addition, since a large increase in insulin (in the presence of carbohydrates and protein) can facilitate a greater glycogen resynthesis and an increase in muscle protein synthesis, higher glycemic index carbohydrates (i.e. sports drinks containing glucose or glucose polymers) and rapidly digesting proteins (i.e. liquid forms of protein such as milk proteins, rice proteins, etc.) should be ingested during these times only.

Interestingly, as a result of this type of energy provision, fewer carbohydrates can be ingested during the remainder of the day (as discussed above) while achieving better body composition management and promoting maximal

recovery. As discussed earlier, one very useful body composition strategy is to consume the majority of your carbohydrate energy (especially carbohydrate dense foods such as sugars, breads, whole grains) during and within the first few hours after exercise, while ingesting fruits, vegetables, nuts, and legume carbohydrate sources throughout the remainder of the day. This strategy, in addition to delivering the majority of carbohydrate energy during periods of high glucose tolerance, emphasizes foods with a high micronutrient/macronutrient ratio during the remainder of the day. This allows athletes to stay leaner, while achieving full recovery.

The Pre-Competition Feeding

An athlete who waits until pre-competition to decide to eat well has waited far too long! Good nutrition is training nutrition, the food one eats day in and day out while preparing for competition day. Simply put, the adaptations that take place during training (and the food you eat during this time) are what lead to successful competition-day performances. Your only goal during a pre-competition feeding is to not screw things up.

So, what do I mean when I tell you not to screw things up?

First, overeating within the few hours leading up to a competition will certainly screw things up. Some individuals have the notion that eating a lot before a competition will give them an abundance of energy for optimal performance; however this is an ineffective way to fuel the body. Large feedings delay stomach emptying and therefore this feeding strategy will simply cause sensations of fullness, a diversion of blood flow from the muscles to the gut, and a feeling of discomfort during competition. Rather than eating a lot of food, eating small amount of easily digested food and hydrating during the hours leading up to a competition are the best ways to handle the pre-competition period.

Secondly, eating foods that are novel or that disturb the gastrointestinal tract causing gas, the urge to defecate, or stomach cramping will certainly screw things up. Rather than trying foods that one typically doesn't eat, in an attempt to boost performance or provide extra energy, an athlete should stick with foods that he or she knows will not upset their stomachs.

Finally, athletes often screw things up by attempting to "carb load" prior to competition by having large carbohydrate meals within a few hours of competition. This is an unwise strategy for several reasons.

First, carbohydrate loading only is effective during prolonged exercise. For shorter duration activities, carb loading isn't all that important, especially if

you're hydrating and using the workout drink suggestions from above.

Secondly, carbohydrate loading is best accomplished on the days leading up to a competition, not on the competition day. Competition day nutrition should be characterized by small, frequent, easily digested feedings.

Finally, eating a large feeding of simple or rapidly digesting carbohydrates too close to a competition can actually dull mental acuity and lead to rebound glycemia, a condition in which blood sugar falls and leads to premature fatigue. That's definitely not the way to win your matches.

In summary, under normal circumstances, the goal of the pre-competition feeding should be to eat a comfortable amount of familiar foods within the few hours prior to exercise. This feeding, rather than being performance boosting, should simply provide energy for competition without risking discomfort or fatigue.

Special mention should be made of strategies for pre-competition eating when cutting weight – the right way, that is. Depending on the athlete, the time between weigh-in and competition, and several other factors, special nutrition strategies for cutting weight quickly and safely as well as gaining that weight back (as long as there is adequate time between weigh-in and competition) can enter into the picture. These strategies will be discussed in chapter 8.

Fluid Needs and Hydration

Humans dissipate the heat generated during intense exercise (as well as the heat accumulated from a hot environment) by sweating. As beads of sweat form on the skin, this sweat evaporates, throwing heat into the environment, and beginning the process of cooling the body. Of course, as this water is brought out to the surface, the body's reserve of water is diminished. Further, electrolytes – minerals such as sodium and potassium – are also lost during this process.

While exercise in hot environments can lead to losses in body fluid of 1-2L per hour (or the equivalent of 2.2 - 4.4 lbs per hour), sweat rates can be much higher. For example, Olympic Champion marathon runner, Alberto Salazar, lost 3.7L of water per hour (or 8lbs an hour) during one race. Imagine losing 16lbs of water during a 2 hour practice. Talk about dehydration. It's interesting that the very act of cooling ourselves down can lead to dehydration and performance loss.

So why is dehydration such a big deal? Well, a loss of only 2% of body weight in adults (only about 3 lbs for the 147 lb Salazar), can lead to increases in perceived exertion and central fatigue, a reduction in plasma volume (blood volume), decreases in sweat rate and cooling, decrease in mental performance, a decrease in fine motor skills and precision, and a decrease in endurance and work capacity. Obviously, as a grappler, voluntary dehydration is the #1 way to kill your performance. With a reduction in strength, power, mental concentration, and motor skills (as well as slow reaction times), dehydrating yourself is not the way to win matches. But not only is dehydration a performance killer, dehydration has been implicated as the cause of death in many wrestlers. Therefore, it should come as no surprise that preventing dehydration is critical not only for optimal performance during training and competition – but more importantly, staying hydrated can keep you alive!

Make no mistake, though, dehydration can occur without even trying to dehydrate yourself, and it can happen quite easily.

First, our thirst mechanisms often underestimate our fluid needs during exercise and we simply fail to drink enough to replace fluid losses.

Secondly, as the rate of water absorption from the gastrointestinal tract is limited to 500ml – 1L per hour and the rate of absorption of sports drinks (containing 6-8% carbohydrate) is limited to 1 – 2L per hour, at the highest sweat rates in the most extreme conditions, it's difficult to actually replace all the fluid that is lost.

Also, electrolyte insufficiencies/imbalance can occur if fluid replacement practices do not include the addition of sodium and potassium. These electrolytes (and others) are also lost during the evaporative cooling process and must be replaced. One particular danger is in the loss of sodium from body fluids. A severe fall in the concentration of sodium, called hyponatremia, can cause serious illness. This condition can occur from something as simple as replacing sweat and urinary fluid losses with water alone. With sodium concentrations already low, further diluting body fluids with water can become a problem.

In order to prevent voluntary dehydration, a few things are clear. First, athletes must drink during all training and athletic events, even when they're not thirsty. One good strategy is to drink every 15-20 minutes during activity. Further, in order to enhance both thirst and the rate of fluid absorption, the addition of both sodium chloride and carbohydrate to a flavored (and chilled) beverage may increase voluntary consumption. In some studies, the use of such beverages has completely prevented voluntary dehydration. By using the nutrition strategies outlined above, namely, sipping a

carbohydrate/protein drink diluted to a 6-12% concentration during and after training and competition, dehydration should be prevented. This is as long as you haven't intentionally dehydrated yourself prior to your competition or training.

If you take anything away from this chapter, we hope it's this – you NEVER want to enter a competition or training session *dehydrated!*

wrap-up

- Having the right nutrients during training and prior to competition can dramatically impact competition performance, training recovery, body composition, and strength.
- Dehydration is a high performance killer and a loss of as little as 2% of body mass can negatively affect performance.
- During workouts and immediately after workouts athletes should sip a fast digesting carbohydrate-protein drink containing around 0.8g carbohydrate/kg and 0.4g protein/kg.
- While many athletes think pre-competition nutrition should entail carb-loading or some other high calorie intake, these are unnecessary for grapplers. In grappling sports, there is only one goal – don't screw things up.

5

Supplements

If we were to wager a guess, we might presume the two chapters in this book you've most anticipated are; the cutting weight chapter (Chapter 8) and this one, the supplement chapter. Nowadays, everyone wants to hear about supplements, and we don't blame them. We can't even resist the idea that there might be some supplemental pill, powder, or potion that can give us an extra edge when we're consistently training hard and eating well.

Sure, some folks will mock this as a lazy, magic pill fantasy. But those of us who know better realize that certain supplements, when taken as part of an excellent training and nutrition program, do give us a measurable boost in performance – and can even boost our health. Wanting this edge, as long as it's a safe and legal edge, isn't lazy or foolish – it's completely rational. Seriously, it makes good sense to seek out things that give us an advantage. What makes no sense is to ignore strategies that can improve the output of our hours spent in the gym.

But, before you go thinking that Dr. Berardi and Coach Fry are 100% in favor of supplements, listen up. We're only in favor of supplements under 3 conditions:

1. To gain our approval you've gotta use your supplements as an adjunct to a committed training and nutrition program. Remember, supplement means to add to – not to replace.
2. Only use supplements that have been proven to be safe and effective – and while the manufacturers would have you believe otherwise, there are very few safe and effective supplements out there. Even fewer than you think.
3. You use supplements that are legal according to your sport's governing body.

Supplements as Part of Your Complete Program

As mentioned, you've gotta have your nutritional house in order before adding supplements to the mix. Simply put, supplements are not and never were intended to be substitutes for hard work in the gym and smart work in the kitchen. That's right, half hearted attempts at training and nutrition can never be salvaged with the magic supplement pills. An equivalent analogy would be putting expensive gas into a car up on blocks. No matter how good the gas, that car isn't going anywhere.

So, to get the most out of supplements, you can't stumble into a supplement store, pick up some pills, and start taking them. Do that and you might as well burn up some of your money; again, supplements in the absence of a

good nutrition plan are useless. Rather, you have to use the ideas laid out in this book so far, you've gotta choose the right amounts of food to eat, the right types of foods to eat, and the right time to eat these foods. Then, and only then, can you pick up your supplements and begin to introduce them into the plan. Need proof of just how true this is? Consider what we do with most of our clients when they first come to us.

When clients come to us frustrated with their training and body composition, the first thing we examine is their current supplement and food intake as well as their supplement and grocery bills. What usually comes to light is the fact that they're often spending more money on supplements than they are on good food. In other words, they're focusing their energies on their supplement plan and neglecting the nutrition plan – a huge mistake.

After we reduce their supplement bills, using the supplement money they've saved to buy groceries and a just few basic, effective supplements (those discussed in this chapter), they end up making the kind of progress they're looking for.

So one thing should be clear: the first thing to think of when considering supplements is your diet. If it's not in order, make it so. Then consider the supplements.

Safe and Effective Supplements

Once your diet is in order and it's time to introduce supplements, you'll likely have a lot of questions. This is no surprise as competing supplement manufacturers have done a great job of getting in our collective faces and convincing us that we absolutely need their products – creating a confusing situation. But the reality is this – most sports nutrition experts agree there are only a few basic supplements that are useful on a daily basis. The fancy, *everything's in it but the kitchen sink* supplements are often expensive and offer little in the way of additional benefits.

Therefore, in this section, we'll present the few supplements that we recommend to each and every one of our clients. While we call these supplements "the basics," don't make the mistake of thinking they're not "hardcore" or advanced. There really is no such thing as a beginner or advanced supplement. Rather, there are supplements that work and supplements that don't. The supplements listed below are the ones that work. They also happen to have the highest benefit to cost ratio. They're all safe, relatively inexpensive, and produce desirable results.

The Grappler's Guide Top 5 Supplements

1. Protein supplements
2. Greens supplements
3. Muscle Recovery/Workout Drinks
4. Creatine Monohydrate
5. Omega 3 Fish Oil Capsules

That's it – 5 staple supplements that every one of our clients takes. If you're wondering why we've forgotten the multi-vitamins, the nitric oxide stimulators, the L-carnitine, and the super-creatine products, with everything but the kitchen sink thrown in – we didn't forget them. They simply didn't make our list. They're not the regular supplement staples our clients take. So instead of obsessing about the supplements you thought you needed to take, let's delve right into these 5 supplements – the supplements you do need to take – and discuss what advantages they give you.

Get your nutrition right, get your training right, and get these 5 supplements right and you'll be light years ahead of most athletes – even those at the Olympic and professional levels.

1. Protein Supplements

Protein supplements are really just food – powdered milk protein, for example. So why use them instead of food? Well, you won't – unless necessary. You see, most of our clients find it difficult to eat whole food meals every 2-3 hours. Therefore, when they find it hard to eat whole food protein sources, they use protein supplements instead. In this way, we consider protein supplements more food than supplement. However, they are often "lower-quality" alternatives to whole food protein sources like beef, chicken, fish, etc. We say "lower quality" because they don't contain the other vitamins and minerals that beef, chicken, and fish contain. However, they still do provide a high-quality source of protein and in a pinch, they do just fine.

Walk into a supplement store and most of the protein supplements you'll find will be made up of milk protein. Whey protein, a popular supplement, makes up about 20 percent of the protein found in milk while casein protein makes up about 80 percent of the protein found in milk. These two components, whey and casein, have different properties in the body and if you're going to

use protein supplements, your best choice is to pick a milk protein blend or casein/whey blend.

Milk protein blends are best as they contain both slow and fast-digesting proteins. This combination has been shown to improve protein recovery and building as well as fat loss – the perfect combo for athletes. Just remember, the 10 habits dictate that you need to balance out your protein meals with good fats, veggies, fruits, etc. So don't just put your protein in some water or milk. Give our Super Shakes a try (below).

Super Shake Recipe

- 1 cup of water or iced green tea
- 1-2 scoops vanilla milk protein blend
- 0.5-1 cup of frozen berry blend
- 1 serving Greens+
- 1-2 tablespoons of ground flax seeds
- 2-3 tablespoons of mixed nuts
- 1 teaspoon creatine

Add all ingredients in blender and blend on high for 2 minutes. Drink along with 1-3 capsules of fish oil.

To be sure you're picking up the right kind of protein supplement, when shopping around, pick up the protein container, flip it over, and search for "milk protein isolate" or "milk protein blend." If you see either of these on the ingredients list (or simply, whey and casein as two of the top ingredients), you're in business.

Some of our favorite brands include Biotest Low Carb Grow, Met Rx Protein Plus, Dorian Yates' Approved Pro Peptide, and Cytosport Muscle Milk.

As mentioned above, although most of your daily protein should come from whole food protein sources, getting all of your protein in this way isn't always possible or practical. That's when the protein supplements should come into play. Yet milk protein supplements aren't the only type to choose from. Other protein supplements on the market are made from egg protein, soy protein, rice protein, and other foods. Although milk protein supplements are the most popular, if you have a milk allergy or milk proteins supplements make your stomach uncomfortable, try another type of protein supplement.

2. Greens+

The reality is that probably 99% of us don't get enough veggies in our diets. Heck, we recommend increasing veggie intake over, and over, and over

again, yet many of our clients still don't eat enough. And we understand why – it's difficult to get 10 servings of fruits and veggies a day; and that's what we want our athletes taking in. So, what can we do to ensure our athletes are getting enough? Recommend Greens+, that's what!

Greens+ is the vegetable equivalent of protein powder – it's a concentrated, potent blend of powdered veggies; so potent, in fact that one serving (1 tablespoon) is equivalent to about 6-10 servings of veggies. In addition, each serving of Greens+ contains a blend of antioxidants, enzymes, phytonutrients, vitamins, and minerals – all the good stuff we just don't get enough of in our daily diets.

Although there are a lot of greens-type products on the market, we recommend Greens+, since the folks at Greens+ have put their product to the test – allowing scientists to scrutinize it and ensure it does what they say it does. And under this scientific scrutiny Greens+ has held up well. It's been shown to improve health, to boost antioxidant defenses, to protect against certain cancers, to balance out dietary acids, and to preserve bone mass.

In the end, if you're not getting your 6-10 servings of fruits and veggies each day (and I only know a few athletes who actually are), you've gotta supplement your intake with something like Greens+. The best time to take your Greens+ is with your protein shakes (discussed above). Throw some Greens+ into each Super Shake and you've got your protein and veggies covered.

4. Muscle Recovery/Workout Drinks

As discussed in Chapter 4, workout nutrition is essential. Taking a liquid nutrition drink containing a 2:1 ratio of fast digesting carbs to fast digesting protein (0.8g/kg and 0.4g/kg respectively; plus some added amino acids such as glutamine, BCAA, and phenylalanine) during and after exercise can substantially increase protein synthesis, decrease protein breakdown, increase muscle carbohydrate recovery, and improve the anabolic to catabolic hormone ratio in the body.

As discussed earlier, the best recovery drink on the market is Biotest Surge. This product meets the criterion above and has been shown in research studies to offer recovery benefits.

Other good products on the market include 2 products by Pacific Labs - Countdown and Endurox; although we think the carbohydrate to protein ratio of these products is a bit high and Surge is a better choice.

4. Micronized Creatine Monohydrate

Creatine monohydrate increases muscle free creatine and phosphocreatine concentrations. These naturally occurring energy pools are responsible for replenishing the muscle's number 1 energy supply – ATP. By boosting free creatine and phosphocreatine with creatine supplements, not only is energy production and anaerobic power/muscle strength enhanced, muscles actually begin to “swell”. This “swelling” can lead to increases in muscle protein synthesis, muscle glycogen storage, and muscle size.

While some people may argue this point with us, we think that continual creatine supplementation is essential for good health as well as athletic performance. While creatine has been discussed in the athletic context quite extensively, it has some amazing regenerative effects on all tissues of the body, including the brain. That's right, even if you're not an athlete, you may benefit from creatine supplementation. Studies have shown that creatine supplements can improve the functional capacity of the elderly, reduce the loss of lean mass associated with age, and improve cognitive test scores.

Now, we know what some of you are thinking – what about all those reported effects and dangers? After all, the media has a field day with creatine. Well, these negative effects have been overstated. In fact, no scientific studies have found serious or lasting negative side effects associated with creatine supplementation. The only negative side effect associated with creatine supplementation that's been shown in a few studies is mild gastric distress; gastric distress which subsides after a few days of use.

Cramping – no.

Failed drug tests – no.

Cancer – no.

In fact, the only real “side effects” associated with creatine supplementation (besides an occasional stomach ache that goes away quickly) are bigger, stronger muscles, boosts in athletic performance, and boosts in cognitive performance.

And here's another way to think of it. Historically, we humans have had a relatively high creatine intake. This is due to the fact that many of our evolutionary ancestors consumed high meat diets, and meat contains creatine. From scientific data, it's clear that our bodies have adapted to this level of intake and like a higher creatine diet. How do we know this?

Well, first of all, most of us have storehouses of creatine in our muscles that are only about 70% full. Secondly, when we supplement with creatine and top off our creatine stores, we do better – cognitively and athletically.

Since creatine supplementation boosts creatine capacity to 100% and offers a host of performance and health benefits, we argue that most people – unless they eat a high creatine diet – are in a state of sub-clinical deficiency. To prevent this “deficiency,” we usually recommend 3-5g of micronized creatine (1 teaspoon) per day, every day.

Using this amount of creatine should increase power output by about 10%. For youngins, this means heavier loads in the gym, more explosive lifts, and increased athletic performance. For older folk, this means more daily functional capacity. Throw this creatine (AST or MetRx make good micronized creatine products) in with your Super Shakes (above) and you're now putting all the basics together.

5. Omega 3 Fish Oil Capsules

As part of the 10 Habits, we recommended adding healthy fats into your daily plan. Omega 3 Fish Oil Capsules are probably as healthy as they come.

Omega 3 Fish Oil Capsules are rich in a specific group of fatty acids (omega 3 fatty acids) that are commonly missing the North American diet. When added to the diet, these fats (especially the DHA and EPA components) have been shown to improve insulin sensitivity in muscle cells while decreasing it in fat cells. As a result, nutrients are more likely to be shunted toward muscle instead of adipose tissue. In addition to improved carbohydrate storage, fish oil may improve the efficiency of protein storage, increase metabolic rate, and increase lean mass.

Although fish oil has the great body composition benefits listed above, it also can improve your health profile including reducing cardiovascular disease risk, cancer risk, and diabetes risk. As a result of this long list of benefits, it should be clear that fish oil is essential for exercisers and non-exercisers alike.

When choosing a fish oil supplement, be sure the oil comes from one of the following fish (or a combination of them): salmon, sardine, anchovy, or menhaden. Why these fish? Well, all the aforementioned fish are rich in DHA and EPA, the fats most often associated with all the benefits discussed above. And remember this, cod liver oil doesn't count – you're looking for EPA and DHA rich marine oils.

When looking for fish oil, it's important to know there are many brands that offer high quality product and these brands can be found in a variety of stores. Supplement stores, grocery stores, drug stores, and even price clubs (Sam's and Costco) now carry fish oil. The one thing you should make sure of is that the fish oil you buy is concentrated to between 30 and 60%. Therefore when flipping the bottle and looking at the label, you should see 300-600mg of combined EPA and DHA per 1000mg of oil.

Legal Supplements

In the 2003 Sports Nutrition Position Paper, the IOC stated the following:

“Athletes are cautioned against the indiscriminate use of dietary supplements. Supplements that provide essential nutrients may be of help where food intake or food choices are restricted, but this approach to achieving adequate nutrient intake is normally only a short term option.”

“The use of supplements does not compensate for poor food choices and an inadequate diet. Athletes contemplating the use of supplements and sports foods should consider their efficacy, their cost, the risk to health and performance, and the potential for a positive doping outcome.”

Up until this point in the chapter we've discussed the supplements that offer the best safety, cost, and effectiveness profiles. In this section, let's talk drug testing.

The NCAA, IOC, and other sports governing bodies have strict rules prohibiting the use of certain drugs and supplements during an athlete's competitive career. Often, with drugs, it's pretty clear what's right and what's wrong. But with supplements, it's tougher to judge, especially with the potential for contaminated products.

In 2001, several research teams went out and collected over 600 random nutritional supplements in a variety of countries across the world. Of these 634 supplements, none – according to label claims and ingredient lists – were supposed to contain any banned substances. Interestingly, however, of these supplements, 94 actually did contain banned substances while 66 more contained substances that could convert to banned substances in the body. In the end, 160 of the 634 tested supplements contained banned ingredients.

Now imagine you picked up a supplement at the local GNC, a new, fancy supplement that claimed to make you 80% stronger and 50% leaner. Also

imagine testing positive for a banned substance a month or two later – effectively ending your competitive career. That's what's at stake here. That's what's happened to a number of athletes in the last few years. And that's what we'd like to help prevent from happening to you.

So what options do you have with these inherent supplement risks?

1. **Take no supplements at all.** This, of course, is the safest option although you don't get the benefits of a good supplementation regimen.
2. **Establish relationship with nutrition coach (like Dr Berardi) and obtain supplements direct from the manufacturer.** This is a great option, but is best for teams as you have to buy in bulk.
3. **Take only basic supplements made by reputable companies.** This option is probably the most feasible for an individual user as it's relatively safe although it's not without risk.
4. **Pick up supplement from local sports nutrition distributor.** This is the riskiest as that's exactly what the researchers above did. Choose this and, according to the statistics, you're likely to get burned about 25% of the time.

We'll admit it; making sense of supplementation can be confusing at times. Supplement manufacturers are constantly bombarding the magazines (and you) with pseudoscientific ads promoting the quality and effectiveness of their latest and greatest products. So with all these supplement ads and choices out there, it's easy to get frustrated. Remember this – stick with the basics. Even our highest level athletes use the basic 5 supplements listed in this chapter and not much else. Stick with the same prescription and your supplement needs will be taken care of while minimizing your potential risks.

wrap-up

- Dietary supplements are to be used as supplements to a solid training and nutritional plan – not in place of.
- Sports nutritionists often agree there are a few basic supplements that actually help improve the diet and offer health, body composition, and performance benefits – these include: protein supplements, greens supplements, workout nutrition, creatine, and fish oil.
- Although there are always new supplements being released, your best bet is to stick with the basics listed here – as many of our high level athletes do. There's no need to risk your health or your eligibility on supplements that might not even offer a significant edge anyway.

6

Sample Menus

Now it's time to get practical. This chapter is designed to provide you some example eating plans based on the guidelines laid out previously in the book. We've categorized the eating plans according to a few criteria.

First, we've provided eating plans that have been designed for athletes trying to gain muscle mass in the off-season as well as support training during the competitive season. Also, we've provided eating plans designed for athletes trying to lose weight and fat mass for competition.

Further, we've provided higher carbohydrate and lower carbohydrate menus for your selection. The higher carbohydrate menus are more suitable for every day use while the lower carbohydrate menus are best saved for cutting weight (as discussed in the weight-cutting chapter; Chapter 8) the last few days before competition.

Keep in mind, these are not the end-all, be-all of good nutrition; rather, they're a few examples of nutrition plans we've previously recommended to our athletes. If you're interested in following any of these plans, go for it. Just be sure to use the outcome based strategies previously discussed in order to evaluate what changes should be made to the plans.

Grappler 1, 140lbs (Muscle Gain/Performance Support)

Feeding #1:

1 cup egg whites with 1 cup spinach and 2 servings of veggies (e.g. peppers and onions)

1/3 cup oats with 1 serving fruit

1 fish oil capsule

Feeding #2

1 cup iced green tea or water with 1 scoop milk protein blend, 1 serving Greens+, 1 cup frozen mixed berries, 1 tablespoon mixed nuts, 1 tablespoon ground flax seeds and ½ cup fat free plain yogurt

1 fish oil capsule

Feeding #3

6oz extra lean meat (beef or chicken)

2oz (dry weight) whole wheat pasta

3 servings of your favorite veggies

1 fish oil capsule

Feeding #4

1 cup iced green tea or water with 1 scoop milk protein blend, 1 serving Greens+, 1 cup frozen mixed berries, 1 tablespoon mixed nuts, 1 tablespoon ground flax seeds and ½ cup fat free plain yogurt

1 fish oil capsule

Feeding #5

6 oz extra lean meat (chicken or beef)

½ cup lentils or beans

3 servings of your favorite veggies

1 serving fruit

1 fish oil capsule

Grappler 1, 140lbs (Higher Carbohydrate Weight Loss)

Feeding #1

1 cup egg whites with 1 cup spinach and 2 servings of veggies (e.g. peppers and onions)

1/3 cup oats with 1 serving fruit

1 fish oil capsule

Feeding #2

1 cup iced green tea or water with 1 scoop milk protein blend, 1 serving Greens+, 1/2 cup frozen mixed berries, and 1/2 cup fat free plain yogurt

1 fish oil capsule

Feeding #3

4oz extra lean meat (beef or chicken)

1oz (dry weight) whole wheat pasta

3 servings of your favorite veggies

1 fish oil capsule

Feeding #4

1 cup iced green tea or water with 1 scoop milk protein blend, 1 serving Greens+, 1/2 cup frozen mixed berries, and 1/2 cup fat free plain yogurt

1 fish oil capsule

Feeding #5

4 oz extra lean meat (chicken or beef)

1/2 cup lentils or beans

3 servings of your favorite veggies

1 serving fruit

1 fish oil capsule

Grappler 1, 140lbs (Low Carbohydrate Diet for the Last Few Days before a Competition)

Feeding #1

1 cup egg whites with 1 whole egg mixed in and 1 cup of spinach
1 serving Greens+

Feeding #2

1 cup low fat cottage cheese
1 tablespoon ground flax seeds
½ oz almonds
3 fish oil capsules

Feeding #3

4oz extra lean meat (beef or chicken)
2 cups spinach
2 servings of other veggies
½ oz walnuts
1 tablespoon olive oil and 2 tablespoons vinegar

Feeding #4

1 cup iced green tea or water with 1 scoop milk protein blend, 1 serving Greens+, 1/4 cup frozen mixed berries, ½ oz cashews
3 fish oil capsules

Feeding #5

4oz extra lean meat (beef or chicken)
2 cups spinach
2 servings of other veggies
½ oz walnuts
1 tablespoon olive oil and 2 tablespoons vinegar

Grappler 2, 170lbs (Muscle Gain/Performance Support)

Feeding #1

1 cup egg whites with 1 cup spinach and 2 servings of veggies (e.g. peppers and onions)

1/3 cup oats with 1 serving fruit

1 fish oil capsule

Feeding #2

1 cup iced green tea or water with 2 scoops milk protein blend, 1 serving Greens+, 1 cup frozen mixed berries, 2 tablespoons mixed nuts, 2 tablespoons ground flax seeds, and ½ cup fat free plain yogurt

1 fish oil capsule

Feeding #3

6oz extra lean meat (beef or chicken)

2oz (dry weight) whole wheat pasta

½ cup of lentils or beans

3 servings of your favorite veggies

1 fish oil capsule

Feeding #4

1 cup iced green tea or water with 2 scoops milk protein blend, 1 serving Greens+, 1 cup frozen mixed berries, 2 tablespoons mixed nuts, 2 tablespoons ground flax seeds, and ½ cup fat free plain yogurt

1 fish oil capsule

Feeding #5

6 oz extra lean meat (chicken or beef)

1 sweet potato

½ cup lentils or beans

3 servings of your favorite veggies

1 serving fruit

1 fish oil capsule

Grappler 2, 170lbs (Higher Carbohydrate Weight Loss)

Feeding #1

1 cup egg whites with 1 cup spinach and 2 servings of veggies (e.g. peppers and onions)
1/3 cup oats with 1 serving fruit
1 fish oil capsule

Feeding #2

1 cup iced green tea or water with 1 scoop milk protein blend, 1 serving Greens+, 1 cup frozen mixed berries, 1 tablespoon mixed nuts, 1 tablespoon ground flax seeds, and ½ cup fat free plain yogurt
1 fish oil capsule

Feeding #3

4oz extra lean meat (beef or chicken)
1oz (dry weight) whole wheat pasta
½ cup of lentils or beans
3 servings of your favorite veggies
1 fish oil capsule

Feeding #4

1 cup iced green tea or water with 1 scoop milk protein blend, 1 serving Greens+, 1 cup frozen mixed berries, 1 tablespoon mixed nuts, 1 tablespoon ground flax seeds, and ½ cup fat free plain yogurt
1 fish oil capsule

Feeding #5

4 oz extra lean meat (chicken or beef)
1 sweet potato
½ cup lentils or beans
3 servings of your favorite veggies
1 serving fruit
1 fish oil capsule

Grappler 2, 170lbs (Low Carbohydrate Diet for the Last Few Days before a Competition)

Feeding #1

1 cup egg whites with 2 whole eggs mixed in and 1 cup of spinach
1 serving Greens+

Feeding #2

1 cup of iced green tea or water, 2 scoops milk protein blend, 1 serving Greens+, ½oz almonds, 1 tbsp of ground flax seeds
5 fish oil capsules

Feeding #3

6oz extra lean meat (beef or chicken)
2 cups spinach
2 servings of other veggies
½ oz walnuts
1 tablespoon olive oil and 2 tablespoons vinegar

Feeding #4

1 cup iced green tea or water with 2 scoops milk protein blend, 1 serving Greens+, 1/4 cup frozen mixed berries, ½ oz cashews
5 fish oil capsules

Feeding #5

6oz extra lean meat (beef or chicken)
2 cups spinach
2 servings of other veggies
½ oz walnuts
1 tablespoon olive oil and 2 tablespoons vinegar

Grappler 3, 200lbs (Weight Gain/Performance Support)

Feeding #1

1 cup egg whites with 1 cup spinach and 2 servings of veggies (e.g. peppers and onions)
1/3 cup oats with 1 serving fruit
2 fish oil capsules

Feeding #2

1 cup iced green tea or water with 2 scoops milk protein blend, 1 serving Greens+, 1 cup frozen mixed berries, 1/3 cup oats, 2 tablespoons ground flax seeds, 2 tablespoons mixed nuts and ½ cup fat free plain yogurt
2 fish oil capsules

Feeding #3

8oz extra lean meat (beef or chicken)
1 sweet potato
½ cup of lentils or beans
3 servings of your favorite veggies
1 serving fruit
2 fish oil capsules

Feeding #4

1.5 cup low fat cottage cheese
2 scoops milk protein blend
1/2 cup muesli cereal
1 serving fruit
2 fish oil capsules

Feeding #5

8 oz extra lean meat (chicken or beef)
2 cups spinach
2 servings of your favorite veggies
1 serving fruit
2 tbsp vinegar
2 fish oil capsules

Grappler 3, 200lbs (Higher Carbohydrate Weight Loss)

Feeding #1

1 cup egg whites with 1 cup spinach and 2 servings of veggies (e.g. peppers and onions)
1/3 cup oats with 1 serving fruit
2 fish oil capsules

Feeding #2

1 cup iced green tea or water with 2 scoops milk protein blend, 1 serving Greens+, 1 cup frozen mixed berries, 2 tablespoons mixed nuts, 2 tablespoons ground flax seeds, and ½ cup fat free plain yogurt
2 fish oil capsules

Feeding #3

6oz extra lean meat (beef or chicken)
1 sweet potato
½ cup of lentils or beans
3 servings of your favorite veggies
1 serving fruit
2 fish oil capsules

Feeding #4

1 cup low fat cottage cheese
1 scoop milk protein blend
1/3 cup muesli cereal
1 serving fruit
2 fish oil capsules

Feeding #5

6 oz extra lean meat (chicken or beef)
2 cups spinach
2 servings of your favorite veggies
1 serving fruit
2 tbsp vinegar
2 fish oil capsules

Grappler 3, 200lbs (Low Carbohydrate Diet for the Last Few Days before a Competition)

Feeding #1

1 cup egg whites with 2 whole eggs mixed in and 1 cup of spinach and 1oz cheese
1 serving Greens+

Feeding #2

1 cup of iced green tea or water, 2 scoops milk protein blend, 1 serving Greens+, ½oz almonds, 1 tbsp of ground flax seeds
6 fish oil capsules

Feeding #3

6oz extra lean meat (beef or chicken)
2 cups spinach
2 servings of other veggies
½ oz walnuts
½ oz pumpkin seeds
1 tablespoon olive oil and 2 tablespoons vinegar

Feeding #4

1 cup iced green tea or water with 2 scoops milk protein blend, 1 serving Greens+, 1/4 cup frozen mixed berries, ½ oz cashews
6 fish oil capsules

Feeding #5

6oz extra lean meat (beef or chicken)
2 cups spinach
2 servings of other veggies
½ oz walnuts
½ oz pumpkin seeds
1 tablespoon olive oil and 2 tablespoons vinegar

Other Food Planning Strategies

Now, if you're the type of person that isn't interested in being told what and when to eat, here's another way to plan your eating. Earlier in the book we presented the 10 habits and the 20 super foods that best fit into those 10 habits. Well, by using the rules laid out in the 10 habits and eating between 3-5 servings of each of the super foods every week, you'll be able to support your ideal body composition, health, and performance.

Below we've included a chart of the 20 super foods with 5 check boxes next to each food. Print out this list and post it in a visible place. Then, each time you eat one of the super foods, place a check mark in the relevant box. Your goal, if you're looking to lose fat, is eat around 3-4 servings of each food every week. And if you're looking to increase muscle mass or fuel your high intensity training, shoot for 4-5 servings of each food every week.

Superfood Checklist

Check a box next to each food every time you eat it. For fat loss, eat 3-4 servings of each food every week; for muscle gain and during periods of high intensity training, eat 4-5 servings of each food every week.

Protein Foods

Lean Red Meat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Salmon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Omega 3 Eggs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plain Low-Fat Yogurt (lactose free if possible)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Protein Powder (milk protein isolates, whey protein isolates, or rice protein isolates)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Carbohydrate Foods

Spinach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tomatoes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Broccoli, Cabbage, Cauliflower	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mixed Berries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oranges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mixed Beans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Quinoa	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Large Flake Whole Oats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Fat Foods

Mixed Nuts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avocados	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extra Virgin Olive Oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fish Oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flax Seeds/Flax Oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Liquid Drinks

Green Tea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liquid Exercise Drinks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

wrap-up

- There are many ways to schedule a good eating plan. You can either follow a pre-established eating schedule (as provided in this chapter) or you can make sure you eat from a list of foods suited toward helping you achieve your goals (also provided in this chapter).
- Be sure to take the feeding strategies outlined in this chapter, copy them, and put them in a visible place. Also, use some sort of recording strategy to make sure you're doing a good job following your plan. Remember, perfection isn't necessary, but you should strive for 90%.

part 3



Weight Management

Weight Management

Earlier in the book, we discussed nutrition in very practical terms – from the 10 Habits to the specific foods that fit into these habits. However, some individuals like to go a bit further, learning more about calories, proteins, carbohydrates, and fats. That's what this chapter is about. In it we'll discuss calories and the macronutrients. By the end, you'll understand more clearly how important it is to avoid the low calorie diets prevalent in grappling sports.

Calories and Energy Balance

Let's start at the beginning – what's a calorie? Well, for starters, a calorie is equal to the amount of energy required to raise one liter of water one degree Celsius. So the energy contained in an apple (about 100 calories or so), for example, could raise the temperature of 100-liter jug of water by one degree C, or raise the temperature of a one-liter jug of water by 100 degrees C. Simply put, calories are units of energy or heat (in science the two – heat and energy – are often synonymous).

So why are calories so important? Well, it's these units of energy that provide the physiological currency for everything from movement to pumping blood to digesting our food. Without the energy contained in calories, none of us would be alive. So when you think calories, think energy, and think life.

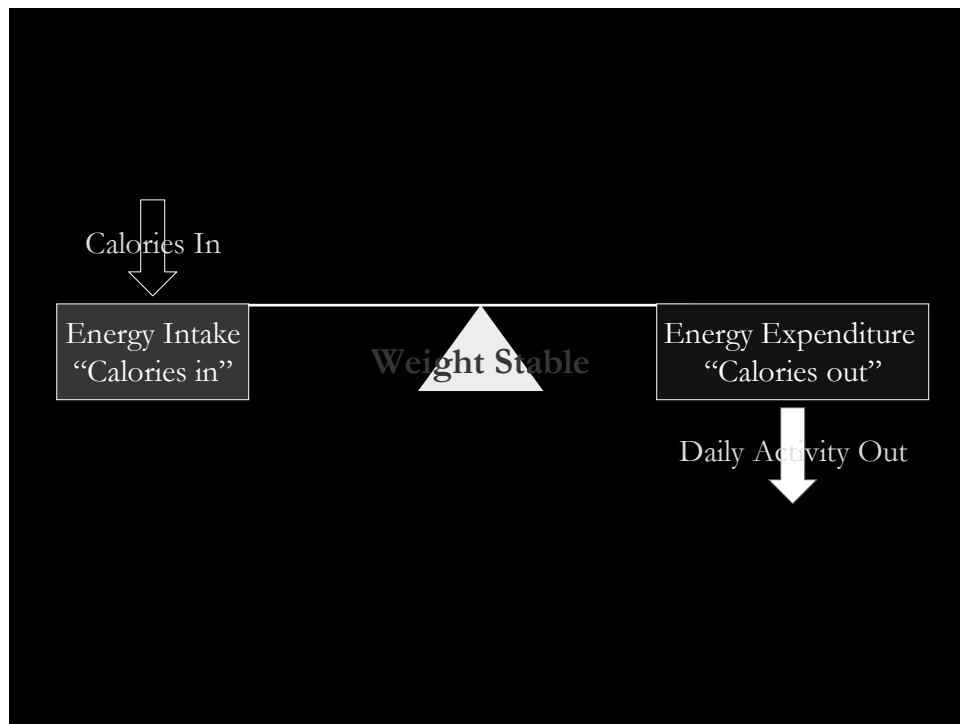
Unfortunately, when most people think of calories they don't think energy and life, they think of weight gain. This is unfortunate as calories are NOT inherently bad. Sure, the inefficient use of them does make us hold onto body fat, but calories are the currency of health and physical performance. In other words, calories are good; that is, if you consider having energy to stay alive, get out of bed in the morning, move around all day, and dominating an opponent all good things.

In sports performance, calories are important for two reasons. First, they are important in fueling your training and competitive energy needs. Eating too few calories is the ultimate training and performance killer (not to mention the fact that it does a real number on your physique, removing not only fat, but also stripping you of your hard-earned muscle, metabolism, and muscle strength). Secondly, calories determine your body composition, that is, your ratio of muscle mass to fat mass. Eat too many calories and you'll carry too much fat. Eat too few and your strength to power ratios and muscle mass to fat mass ratios will be suboptimal. But it's not just calorie intake alone that's important. There's a whole other side to the equation – calorie expenditure. Therefore, with respect to both reasons listed above, the balance between energy intake (what you eat) and energy output (what you burn) is critical. So let's talk about this energy (or calorie) balance.

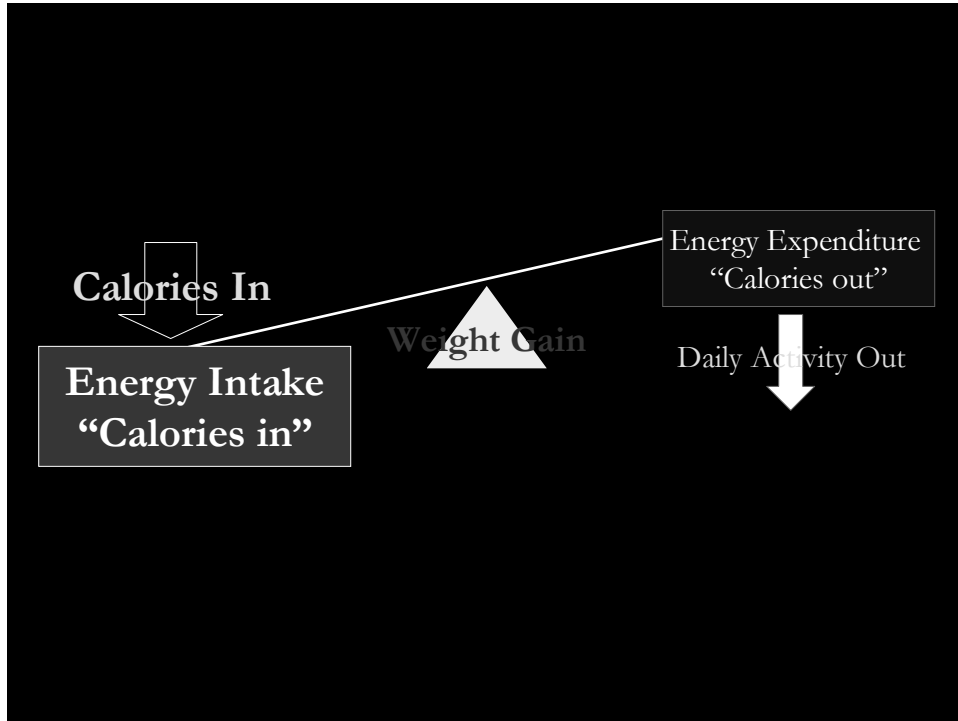
For starters, energy balance is the relationship between energy intake and energy output. Seems simple, right? Well, not so fast! Calorie balance is incredibly complex. We'll try to clear up some of this complexity for you here. Unfortunately, it's the simplification of this relationship between energy in and energy out that leads to all sorts of misinformation and unhealthy practices; low calorie dieting being only one example. But wait, you thought cutting calories was a great way to lose fat. What's going on here?

Well, let's start out with a few pictures illustrating the current view of energy balance, or, at least, how most people view the relationship between "calories in" and "calories out."

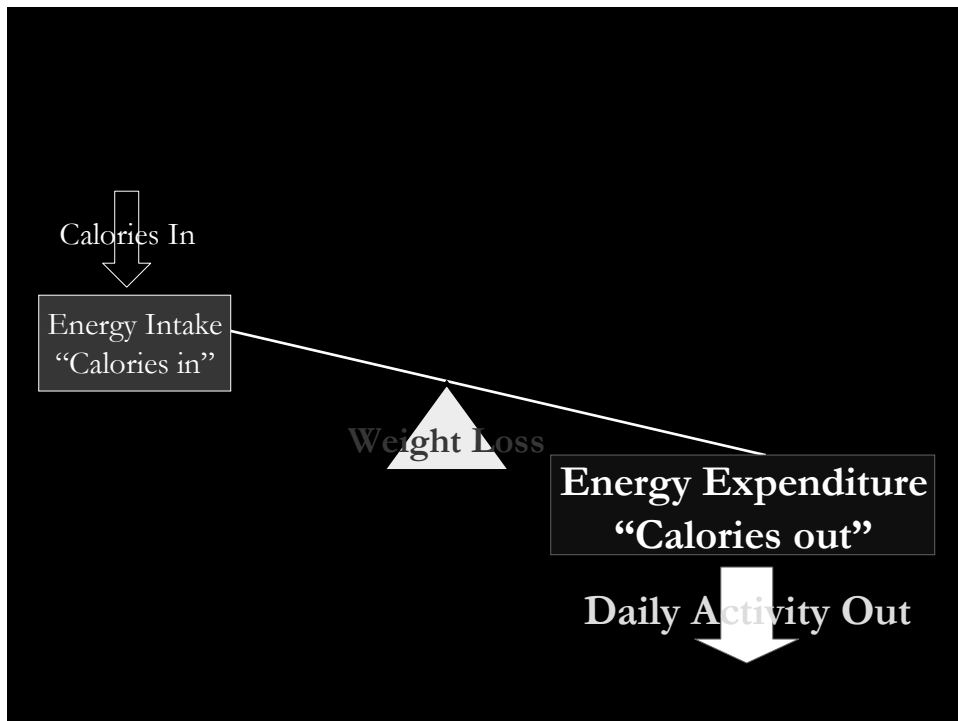
The first image below represents how most people perceive the energy balance equation during weight maintenance. As the diagram represents, when "calories in" are equivalent to "calories out," body mass should remain constant.



The next image below represents the conventional view of the energy balance equation during weight gain. As the diagram represents, when "calories in" exceed "calories out" body mass should be gained.



The next image below represents the conventional view of the energy balance equation during weight loss. As the diagram represents, when "calories out" exceed "calories in," body mass should be lost.



Now, while the energy balance models above seem to make complete sense, they are really oversimplified versions of the truth. And it's these simplifications that cause problems and lead to many individuals completely missing the boat nutritionally.

The Case Studies

Let me demonstrate why they've missed the boat here, with a few case studies. In these case studies, check out column 1 to learn a bit about the athlete and what was accomplished. Then check out columns 2 and 3 to check out what their exercise expenditure and energy intake was like before and after nutritional intervention.

Case Study 1:	
National Level Cross-Country Skier, Female, 20y, 5'6"	
Before (September 2002)	After (December 2002)
Weight: 160lb Body Fat Percentage: 22% Lean Body Mass: 125 lbs Fat Mass: 35 lbs Exercise Expenditure: ~1200 kcal/day Energy Intake: ~2500 kcal/day 15% protein 65% carbohydrate 20% fat	Weight: 135lb Body Fat Percentage: 9% Lean Body Mass: 123 lbs Fat Mass: 12 lbs Exercise Expenditure: ~1200 kcal/day Energy Intake: ~4000 kcal/day 35% protein 40% carbohydrate 25% fat
Net result in 12 weeks:	
25 lbs lost (23 lbs fat mass, 2 lbs lean body mass)	

Now, in case study #1 you should understand that for this athlete's sport, she was both overweight and overfat. Most of her competitors were competing at body weights of 130-140 at body fat percentages in the 10-12% range. At 160 lbs and 22% fat, it was clear that she needed to lose weight and fat, and that's what happened. She lost 25 total lbs.

What might appear most shocking about this case study is that most folks would have decreased her energy intake to promote fat loss. But we didn't. Note that we increased her energy intake by a whopping 1500 calories per day while exercise expenditure remained the same.

Although you might have expected this increase in calories would lead to weight gain, in the face of this increase she lost 25lbs (while preserving most of her muscle mass). If this flies in the face of your understanding of weight gain and loss, you've got a bit to learn about energy balance. Pay close attention to this chapter.

Now on to case study #2:

Case Study 2:	
Novice Weight Lifter, Male, 23y, 5'6"	
Before (August 2003)	After (October 2003)
Weight: 180 lbs Body Fat Percentage: 30% Lean Body Mass: 126 lbs Fat Mass: 54 lbs Exercise Expenditure: ~200 kcal/day Energy Intake: ~1700 kcal/day 21% protein 57% carbohydrate 22% fat	Weight: 173 lbs Body Fat Percentage: 20% Lean Body Mass: 138 lbs Fat Mass: 34.5 lbs Exercise Expenditure: ~600kcal/day Energy Intake: ~2200 - 2400kcal/day 35 - 40% protein 30 - 35% carbohydrate 30 - 35% fat
Net result in 8 weeks:	
7 lbs lost (-19.5 lbs fat mass, +12.5 lbs lean body mass)	

Notice that in case study #2, we increased energy intake by between 500 and 700 per day while increasing exercise expenditure by about 400 per day. Again, since the lifter was weight stable in June, prior to hiring us, you might have expected him to have gained weight or at least remained weight stable during this 8 week program. After all we increased his energy intake more than his exercise expenditure. However, as you can see, he lost 7 lbs. But that's not the most interesting story. During the 8 weeks, he lost almost 20lbs of fat while gaining almost 13 lbs of lean mass.

Now on to case study #3:

Case Study 3: Mixed Martial Arts Athlete, Male, 35y, 5'10"	
Before (June 2004) Weight: 179 lbs Body Fat Percentage: 19% Lean Body Mass: 148.6 lbs Fat Mass: 30.4 lbs Exercise Expenditure: ~300 kcal/day Energy Intake: ~1100 - 1500kcal/day 48% protein 25% carbohydrate 27% fat	After (August 2004) Weight: 187 lbs Body Fat Percentage: 9% Lean Body Mass: 170.2 lbs Fat Mass: 16.8 lbs Exercise Expenditure: ~600kcal/day Energy Intake: ~2400 - 2600kcal/day 26 - 38% protein 28 - 42% carbohydrate 22 - 34% fat
Net result in 8 weeks: 8 lbs weight gain (-13.6 lbs fat mass, +21.6 lbs lean body mass)	

Notice that in case study #3, we increased energy intake by between 1100 and 1300 per day while increasing exercise expenditure by only about 300 per day. Again, since the athlete was weight stable in June, prior to hiring us, you might have expected him to have experienced a large gain in mass as well as significant muscle and fat gains. However, as you can see, he gained 8 total lbs, having lost almost 14lbs of fat while gaining nearly 22lbs of lean mass.

While the energy balance equation might have predicted weight gain, it's unlikely that it would have predicted the radical shift in body composition seen in this individual.

Explaining the Case Studies

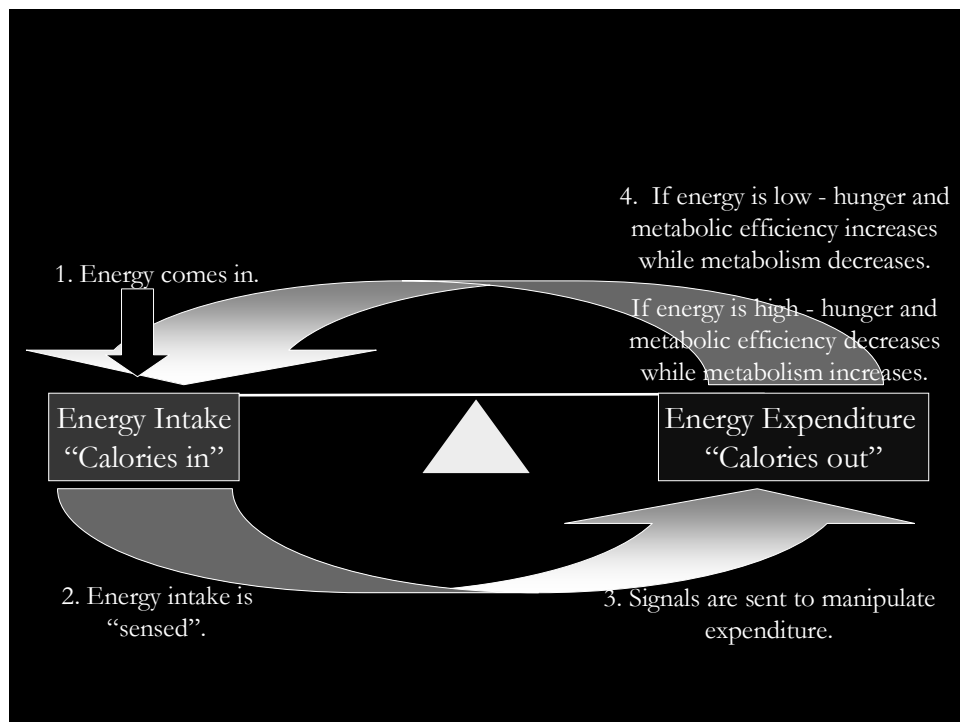
Ok, you must be pretty confused now. What's going on? How can we bump up energy intake (calories) and still see large drops in body fat and, in two of the case studies, body weight? Since everything you've ever been taught flies in the face of these studies, let me do some explaining as there are several things at work here.

1. For starters, all three athletes, despite being overfat, were actually underfed and undernourished. Yes, it's possible to be fat and underfed; in fact, much of North America experiences this phenomenon. In the case of these athletes, they were taking in too few calories (and too few micronutrients). Since energy expenditure (metabolism) "chases" food intake (see below for a complete description of this), the athletes had depressed metabolic rates. By feeding them more, their total expenditure (total metabolism) increased and led to body composition changes.
2. Muscle is calorie-costly; therefore when decreasing calorie intake, the body will dump some of that energy-hungry muscle in an order to stay alive. After all, the body thinks it has to adjust to this low calorie environment to survive; it doesn't know you'll eventually come off your diet. Since calorie restriction (dieting) is likely to decrease muscle mass, in addition to the depressed metabolic rate that comes as a result of eating too little energy, there is a secondary decrease in metabolism due to the loss of muscle mass. In 2 of the 3 case studies above, it's likely that as we increased calorie intake, the subjects saw metabolic increases due to the higher energy intake as well as the increase in muscle mass.
3. In addition to getting the amount of food intake all wrong, these athletes were getting the types of food all wrong. This also required a change; and the dietary shifts we made with them included: a) a reduction in sugar intake and a replacement of this sugar with low glycemic, micronutrient, and fiber rich carbohydrates, b) adding more protein to the diet, and c) balancing out their saturated fats with monounsaturated fats and polyunsaturated fats. These changes likely improved something called nutrient partitioning. By eating the right foods, the energy (calories) you take in are more likely to go toward building muscle vs. building fat. In other words, the nutrients are partitioned toward muscle cells, leaving the fat cells alone.
4. By increasing their protein intake, these athletes likely got extra boosts in metabolic rate and nutrient partitioning. As you'll read about below, protein is the most metabolically costly of the nutrients and offers significant metabolic benefits to athletes, like grapplers, who need a high muscle to fat ratio.
5. Finally, in addition to changing food amounts and types, we also changed food timing. During certain times of the day the body

handles nutrients in different ways. For example, during and after exercise, carbohydrate tolerance is high and, therefore, carbohydrate intake is best received. For the rest of the day, however, when carbohydrate tolerance is diminished, it's better to eat fewer of them. In the athletes discussed above, using the concept of nutrient timing (discussed in the next chapter), contributed to their success.

So, as you can see, the common belief that eating less leads to weight loss and eating more leads to weight gain isn't always accurate, especially in athletes. Therefore, when trying to manipulate body composition, it's important to understand there's more to the eating equation than food amount. Food type and food timing are also very important. But even when dealing with food amount, it's important to understand that energy intake and expenditure are related. As a result, conventional, oversimplified ideas about food amount have to be revamped.

As mentioned above, energy expenditure chases food intake. If that concept eluded you earlier, here's a picture of how that works.



According to this picture above, when you eat less and the body senses this decrease in intake, the metabolism is adjusted downward. Energy efficiency also increases. And while we usually think of efficiency as a good thing, when it comes to weight loss, we want to be inefficient. We want to waste calories,

thus burn fat! As a result of this increase in energy efficiency and metabolic slow down, one of two things can happen. Either your fat loss stops altogether or your fat loss is accompanied by muscle and strength loss.

Since eating less means depriving your body of performance-boosting energy (calories) and micronutrients (vitamins and minerals), we hope it's now clear that low calorie diets are NOT the answer for body composition change - in any athlete. This, of course, is an important message for grapplers to understand, especially considering the fact that many grapplers attempt foolishly to starve themselves into lower weight classes.

Now, we separate grapplers into two groups. The first group consists of already lean grapplers trying to make a weight class lower. If you're one of those individuals who are already lean, starving yourself means massive losses in muscle mass and strength. Instead of starving yourself to make a lower weight class, focusing on eating for strength and size as well as improving wrestling technique can ensure that you're successful at your more natural competitive weight. Of course, this doesn't mean that you'll be naturally fatter. Eat the way this book outlines (and train hard) and you'll slip comfortably into your natural weight class while still being less than 10% body fat. When up against weak, dehydrated athletes who've starved to get down into your natural weight class, you'll blow them away.

The second group consists of those grapplers who are overfat and need to lose primarily fat. If you're one of those individuals who is already overfat, starving yourself to promote fat loss is not only dangerous, it doesn't work. As you lose fat, you'll lose muscle, ensuring that your body fat percentage will stay relatively high. Further, eventually, your metabolism will slow down to the point that further fat loss is difficult. By using the off-season to follow the lessons taught in the 10 Habits above, you'll be able to lower body fat quickly and safely, bringing you into your season lean, muscular, and strong.

Ok, now that calories have been discussed, let's talk about the micronutrients: proteins, carbohydrates, and fats.

Protein

Amino acids are the building blocks of protein, as they join together to form peptides, which, in turn, join together to form protein. So the formation of a protein looks like this:



There are 20 amino acids, 9 of which are essential or indispensable, meaning they're necessary in the diet. Simply put, the body can't make them so we've got to eat them or we'll suffer from malnutrition. Because of the essentiality of these amino acids, it's important that we eat a certain amount of protein each day to prevent malnutrition.

How much protein is this? Well, this amount of protein (along with a small amount of extra protein added in just to be safe) has been established at 0.8g protein per kilogram of body mass (this is called the RDA, or recommended dietary allowance, for protein). Therefore if you're a 220lb individual (100kg), according to the RDA, you'd need 80g of protein each day to prevent protein deficiency.

One question that should come up in your mind is this: Is 80g of protein all the protein you'd need to eat for optimal performance? The answer: probably not. Some researchers have suggested that athletes may need much more protein than the RDA (up to 2.0g protein/kg body mass or 200g for our 100kg individual above).

Whether or not this is true and athletes actually need more protein (to prevent protein wasting and malnutrition) has been studied and debated extensively and inconclusively. Scientists, based on all the available data, just can't seem to come to a consensus.

However, more important for sports nutrition is the question of optimization. For athletes, who cares how much they need to prevent malnutrition? What's important in this population is what intake (when combined with a sport-specific training program) produces ideal body size and composition for the athlete's particular sport. Therefore, rather than focusing on the prevention of a protein deficiency, sports nutritionists should place their emphasis on optimization of an athlete's health, body composition and performance (the "intersection," discussed earlier).

To this end, it's important to come right out with it – in some cases, when trying to optimize health, body composition, and performance, athletes should eat more protein.

I know, I know, we just pissed off about 75% of the world's dietitians and coaches. For years they've been sold on the idea that you don't need more protein to get huge. And guess what, they're probably right. (And as a grappler, you don't necessarily have to be huge). So we're not arguing that more protein will make you huge and strong. Rather, we're arguing that there are other benefits associated with an increased protein intake that make eating more protein important. These benefits may include:

1. Increased Thermic Effect of Feeding.

While all macronutrients require metabolic processing for digestion, absorption, and storage or oxidation, the thermic effect (metabolic effect) of protein is roughly double that of carbohydrates and fat. Therefore, eating a higher protein intake (relative to the RDA) may actually promote fat burning and a higher metabolism. Just be sure to get that protein every 2-3 hours.

2. Increased Glucagon.

Protein consumption increases blood concentrations of a hormone called glucagon. Glucagon is responsible for greater fat movement out of fat cells. Also, glucagon decreases the amounts and activities of the enzymes responsible for making and storing fat in adipose and liver cells. As a result, increased protein intakes may decrease daily fat balance, leading to fat loss and an increased muscle: fat ratio.

3. Increased IGF-1.

Protein and amino-acid supplementation has been shown to increase the IGF-1 response to both exercise and feeding. IGF-1 is a hormone related to muscle growth. Therefore another advantage associated with consuming more protein may be more muscle growth when overfeeding and/or muscle sparing when trying to lose fat.

4. Reduction in Cardiovascular Risk.

Several studies have shown that increasing the percentage of protein in the diet (from 11% to 23%) while decreasing the percentage of carbohydrate (from 63% to 48%) lowers "bad cholesterol" and triglyceride concentrations in the blood while increasing "good cholesterol" in the blood.

5. Improved Weight-Loss Profile.

Researchers have demonstrated that reducing the carbohydrate ratio from 3.5:1 to 1.4:1 increases body fat loss, spares muscle mass, reduces triglyceride concentrations, improves satiety, and improves blood glucose management during fat loss diets.

6. Increased Protein Turnover.

As discussed in the introduction, all tissues of the body, including muscle, go through a regular program of turnover. Since the balance between protein breakdown and protein synthesis (building) governs muscle protein turnover, increased protein turnover may best improve muscle adaptations to training. By increasing protein synthesis (building) and protein breakdown, a diet high in both protein and energy intake may help break down muscle more rapidly. While this might not sound good at first glance, think about it this way. If you're breaking down muscle faster, training hard, and eating properly, you'll actually build that broken down muscle back up faster. This means that your

body will become better adapted to your training and this will happen much more quickly.

7. Increased Provision of Auxiliary Nutrients.

Although the benefits mentioned above have related specifically to protein and amino acids, it's important to recognize that we don't just eat protein and amino acids — we eat food. Therefore, higher protein diets often provide other nutrients that could enhance performance and/or muscle growth. These nutrients include creatine, branched chain amino acids, conjugated linoleic acids, and/or additional nutrients that are important, yet remain to be discovered.

8. Increased Satiety.

Protein foods are more filling than other foods. When someone increases their protein intake, they tend to reduce their chances of overeating on other foods. This considerably helps out with body weight management.

In the end, any discussion of protein intake that begins and ends with a conversation about whether protein builds big muscles is incomplete. After all, with the powerful metabolic effects that protein promotes, protein intake needs to be examined for its ability to assist in body composition improvement — namely boosting metabolism and improving the muscle: fat ratio.

If you're still wondering how much you should be eating, here's a good rule of thumb. Begin by eating around 2.2g protein/kg body mass (or 1g protein/lb of body mass). To this, add carbohydrate and fat in order to meet total daily energy needs.

However, as discussed in the outcome-based decision making section (coming up in Chapter 9), this strategy should not be the end of the story. Truly, the best way to optimize your protein intake would be to experiment with a variety of levels of dietary protein (adjusting carbohydrate and fat energy to compensate for the increases or decreases in protein intake). Throughout your experiments, assess your personal performance and body composition in order to determine which intake creates the best response.

Carbohydrates

Dietary carbohydrate intake has become the source of much debate lately. Of course, the US Food Guide Pyramid and the Canadian Food Guide continue to recommend a high carbohydrate diet. However many experts have challenged these recommendations with research that demonstrates higher carbohydrate diets can lead to serious health problems and a difficult time with fat loss.

So, what should you do? Well, in sedentary folks, a lower carbohydrate intake has been shown to lead to weight loss, losses in body fat, a better preservation of muscle mass and favorable changes in triglycerides and "good" cholesterol. However, it's likely that athletes following a similar low carb diet would suffer impaired exercise performance, a reduction in work capacity, suppressed immune function, and an increase in perception of effort during normal exercise tasks. So, from this, it should be clear that mid- to long-term low carb diets are probably not the way to go for athletes.

However, this does not mean that athletes have to swing to the opposite side of the spectrum and eat high carb diets! High carb diets containing 70% carbohydrate may be too high for anyone, with the exception of endurance athletes.

As an athlete, if you put your main dietary focus on carbohydrate intake, you're likely to ignore the dietary proteins and fats essential for optimal health, body composition, and performance. Add to this fact the reality that most athletes choose high glycemic index carbohydrates (things like sugar, pasta, processed grains, cereals), and the typical high carbohydrate diet may make it difficult for athletes to achieve an ideal body composition for their sport. Therefore, for most athletes, grapplers included, it's more important to emphasize carbohydrate type and timing rather than simply carbohydrate amount.

Athletes, rather than simply ingesting large amounts of empty carbohydrate calories during the training day, should replace their high glycemic index, micronutrient devoid carbohydrate choices foods (candy; many breakfast cereals; sodas; juices; breads, cereals, and pastas made from highly processed grains, etc.). These foods should be replaced with lower glycemic, micronutrient rich carbohydrate choices (foods like beans; ancient grains; unprocessed breads, pastas, and other grains; fruits; vegetables; etc) that are digested more slowly and provide more continuous energy throughout the day. By substituting better carbohydrate choices, athletes will be better able to manage daily energy fluctuations, ingest their daily recommendation of fiber (something many athletes fail to do), lose fat while preserving muscle mass, and prevent the development of magnesium and other micronutrient deficiencies common in athletic populations.

However, there is still a place for higher glycemic index carbohydrates (sugars) in the daily nutrition plan. As will be discussed in the workout and post workout nutrition sections below, these types of carbohydrates can be ingested during and after exercise in order to promote rapid energy provision when it's most needed (during training and competition) and when the large insulin response that accompanies high glycemic carbohydrate ingestion can lead to an improvement in muscle recovery. So remember, almost all

carbohydrates can have a place in the athlete's diet. However it's critical to be sure that carbohydrates are included when they are most friendly to body composition and performance.

Fats

Dietary fat is absolutely essential to the athlete's diet. Despite years of being out of favor, research is clear that dietary fat is important. Seriously restricting dietary fat leads to some negative health, body composition, and performance consequences.

There are three main types of dietary fatty acids:

1. Saturated fatty acids.
2. Monounsaturated fatty acids.
3. Polyunsaturated fatty acids. (The often discussed omega 3 and omega 6 fats are both polyunsaturated fatty acids)

Each of these fats offers unique benefits.

In the past, a simplistic view of fat was adopted as coaches and athletes believed that fat made you fat. However, according to many current experts, eating fat will not necessarily make you fat. In fact, some fats can actually improve body composition by promoting fat loss. Furthermore, certain fats can improve training hormonal status, increase the body's ability to store glycogen (carbohydrate), increase the body's ability to burn fat, and improve overall health by providing anti-inflammatory, anti-cancer, and anti-oxidant effects. Thanks to new research, the word fat is no longer synonymous with fattening.

Athletes should ingest approximately 30% of their diets as fat; so long as the individual proportions of fatty acids are distributed appropriately (i.e. fatty foods are selected appropriately). An appropriate breakdown of fat intake would be about 1/3 of dietary fats coming from saturated sources (predominantly animal fats including red meat and dairy), 1/3 coming from monounsaturated sources (many vegetable fats especially olive oil), and approximately 1/3 coming from polyunsaturated sources (predominantly vegetable fats especially flaxseed and fish oils). Of the polyunsaturated fats, approximately 50% should come from omega 6 fatty acids and approximately 50% should come from omega 3 fatty acids. It's important to realize that the distribution of fatty acids in the diet is as important as the absolute amount of

fat, therefore athletes should pay attention to both. (See chapter 3 for listings of the different fats and which foods contain each).

Before moving on, however, here's an important note. According to the American Journal of Clinical Nutrition, over 30,000 deaths per year are attributed to the overconsumption of one specific fat; one fat that can be labeled as universally bad. These physiological evil-doers are called trans fats.

Trans-fats are man-made fats created when polyunsaturated vegetable oils (high in omega 6 fatty acids) are bombarded with hydrogen molecules. This process destroys the natural structures of these fats and leads to the creation of structures that aren't properly metabolized. Over consumption of these trans-fats can lead to blood lipid abnormalities and an increased risk of cardiovascular disease.

Unfortunately trans-fats are found in far too many foods in grocery aisles. To reduce the amount of trans-fats in the diet, one must eliminate foods that list hydrogenated or partially hydrogenated fats in the ingredients list.

wrap-up

- Most athletes are both underfed and undernourished. Calories aren't bad; they're energy and life. Athletes should never fear calories; they simply need to choose the right calories.
- Food amount, food type, and food timing are all important components of nutritional intake. Using the three of these to your advantage is the best way to optimize body composition, health, and performance.
- Calorie expenditure chases calorie intake; this is the reason most low calorie diets don't work and why some athletes can lose fat by *increasing* calorie intake.
- Most athletes would benefit from a shift in dietary intake by replacing some carbohydrates in the diet with protein.
- While a lot of athletes fear dietary fat, eating the right types of fat can help with fat loss and body composition.

Cutting Weight

Cutting weight is, without a doubt, the most controversial topic in grappling sports. On one hand, many coaches and nutritionists reject cutting weight as dangerous and ineffective. On the other hand, some coaches and athletes do successfully cut weight in preparing for competition (and they win!). So what gives? Why the controversy?

Well, we believe there are several reasons for the controversy surrounding cutting weight:

1. Different Techniques.

Cutting weight can be defined as dropping body mass quickly (prior to competition) in order to make a weight class lower than your natural body mass. Now, while cutting weight has a standard definition, the strategies some athletes use for doing so are too numerous (and, at times, odd) to mention. Amid these numerous strategies, some are safe and effective, others are dangerous, and others ineffective.

It's always easy to say "cutting weight works!" if your only experience has been with safe and effective methods. Likewise, it's also easy to say "cutting weight is dangerous!" if your only experience is with dangerous methods. In this chapter we'll help clear up some of this confusion by addressing a number of weight cutting methods.

2. Different Weigh-In to Competition Intervals.

Different grappling sports have different intervals between weigh-in and competition. For example, some mixed martial arts and submission type events allow for 24 hours between weigh-in and competition. However, some wrestling events only allow for an hour between weigh-in and competition. While certain strategies for cutting weight and rapid recovery work well when a 24 hour recovery period is allowed, these same strategies completely tank when only 1 hour is allowed. Therefore, weight cutting and replenishment strategies should be different based on how long an athlete has between weigh-in and competition.

3. Extreme Weight Cutting.

Some athletes, because of poor body composition leading up to competition or the extreme nature of their personalities, take cutting weight strategies too far, attempting to lose 20lbs or more within a few days prior to an event. This amount of weight loss (10% for a 200lb grappler), if done within the last week prior to a competition, exceeds the 2% body mass loss that leads to performance breakdown. In fact, it exceeds this threshold by a factor of 5. Indeed, with such a weight loss, performance isn't the only thing at risk. A 10%

loss in body water could be fatal. In fact, the loss of 3 wrestlers in the late 90's proved this theory correct.

Further contributing to the dangers of this water loss is the extreme exercise that often accompanies this loss. Many wrestlers exercise for long hours in extremely hot environments with sweat suits in order to provoke this loss. This increases the health risk of dehydration exponentially, as stress on the body is multiplied when an athlete is both dehydrated and exercising intensely. In the end, it should be clear that cutting weight quickly, and doing so using extreme exercise as well as sweat suits and hot environments, can not only kill performance, it can plain ol' kill.

A Step By Step Guide to Cutting Weight Safely and Effectively

So, how does one get down to competition weight safely and effectively? The following step-by-step guide should point you in the right direction. However, read through this section in its entirety. Ignoring any of the precautions contained here-in, doing things out of order, or skipping any steps can either reduce performance or, worse yet, be life threatening.

Also, keep in mind the outcome-based decision making strategies (discussed in Chapter 9) must be your sole criterion for effectiveness. Manipulate, measure, and repeat until you figure out what works for you.

Finally, be sure to check with your personal or team doc to figure out whether your unique physiology is ill-suited for the following manipulations. For example, diuretics can be very dangerous for those with certain heart conditions. So exercise caution and seek the monitoring assistance of a health professional before using these strategies.

Step 1: Enter into the season within 10lbs of competition weight.

Using the strategies laid out in this book (the 10 habits, workout nutrition, energy balance, nutrient timing, etc), enter into your competitive season within 10lbs of your ideal competition weight. Be careful though, this "ideal weight" has nothing to do with what weight class you think you should be competing in. On the contrary, it has to do with the weight at which your muscle to fat ratio is optimized as well as your power to weight ratio (hint, at this weight you should be somewhere in the neighborhood of 8-12% body fat). If you keep within 10 lbs of your ideal competition weight, you'll be within striking distance of every major competition you've got coming up.

Step 2: As your training volume increases, increase your food intake.

As the demands of your competitive season increase, increase your energy intake – but just slightly (by 200-400 calories per day). Your body likes routine

so you should be eating about the same number of feedings and the same amount of food coming into your competition season. Therefore, once your season begins, just add more food or an extra feeding into your nutritional plan. Since your energy expenditure will be much higher during your competitive season (because of your increased training volume), this small increase in intake will shift your body into fat-burning mode. This will allow you to maintain your body mass or even lose a few pounds of fat throughout the season. Essentially you'll grapple your way into competition shape without having to eat fewer calories.

Step 3A (for sports with SHORT intervals between weigh-in and competition):

If you're in a grappling sport in which weigh-ins are very close to competition (i.e. a few hours), you should come into competition much closer to your weight class cut-off. To do this, reduce your energy intake about 2-3 weeks before your event (no starvation dieting here). This short period of negative energy balance should allow you to lean out a bit leading up to the competition. However, because you're not dramatically decreasing energy intake, you'll still be able to come into the competition strong, well-fed, and at your ideal weight (a bit leaner than you started the season).

Now, if you still haven't made your weight class with about 3 days to go, you should only be a few pounds off. If this is the case, you'll need to drop small amounts of weight from 2 different compartments of your body – 1) from waste materials in your gastrointestinal tract and 2) from water in your extracellular spaces.

As your GI tract can contain both feces and partially digested foodstuffs, you can typically lose a pound or two of non-functional weight with the use of additional dietary fiber and/or a mild laxative. Dietary fiber stimulates bowel movements and can help you drop a few pounds of waste material in a few short days. One great way to get more fiber is to add in a few tablespoons of ground flaxseeds per day during these last few days. Doing this will facilitate weight loss.

However, if this increase in fiber isn't enough, several laxative tea mixtures are available to gently stimulate your GI to expel feces and waste, creating a rapid weight loss that will not negatively affect performance – as long as you begin them 2-3 days out from your competition. With this 2-3 day buffer zone you can make the necessary changes to ensure the laxatives don't have a negative effect.

For example, if your laxative appears to be too strong (i.e. causes large weight loss or diarrhea), simply reduce your intake of it or stop altogether. The use of strong laxatives or the abuse of laxatives can lead to diarrhea, mineral, and water loss. As we've been talking about, too much mineral and water loss

(dehydration) can definitely reduce performance. Of course, competition-day diarrhea can reduce performance as well.

Also, at the same time you begin your fiber and/or laxatives, begin taking a natural herbal diuretic like dandelion root. Diuretics stimulate the kidneys to excrete more water than normal, leading to body water losses. Since dandelion root is a natural, gentle diuretic that slowly removes small amounts of water from the spaces outside of your cells, it's probably the safest diuretic. Dandelion can reduce water weight and total body weight without side effects and without reducing the water in your cells (as long as you start out well-hydrated before taking it). However, as with laxatives, if the diuretic proves to be too strong, stop taking it or reduce the dosage.

Finally, about 3 days out from competition, increase your water intake to about 2-3 gallons. Then, 2 days out, drop intake to about 1 gallon. Finally, on the last day before weigh-in, drink very little water. This strategy will trick the body into urinating more than usual. This leads to a relatively safe water loss.

In the end, remember, the goal here is to lose only 2-3 lbs (and no more) in the last few days before competition IF you have to make a weight class. If more weight is lost and you enter weigh-in dehydrated, there's absolutely no way to recover quickly. Since it's impossible to fully rehydrate within one hour's time, you'll enter your competition weak and compromised, with potential mineral imbalances. So don't go to the extreme, don't start exercising like crazy, and don't sit in the sauna all day!

Ok, now that the weight has been dropped what's next? It's time to begin sipping liquid recovery drinks containing fast digesting carbohydrates (and perhaps some protein) and electrolytes like sodium and potassium (Gatorade or Biotest Surge are good choices as they contain good nutrient mixes for rehydrating and refueling the body). Do this right up until it's time to compete.

But here's a caution! Be sure not to slam down a bunch of food or drink like crazy. This will slow gastric emptying and inhibit your ability to rehydrate. Since your body can only hydrate at a maximum rate of about 1.5L per hour (3.3 lbs per hour), you'll need to be sure to drink enough fluid to rehydrate without eating lots of food to slow this process down. And, because of this slow rehydration rate, you can now see why dehydrating by more than 2-3lbs isn't a good idea. If you can only replace a maximum of 3lbs of water in an hour and you drop more water than 3lbs, you'll enter your competition dehydrated (since you only have 1 hour from weigh-in to competition).

In the end, for competitors who have short time intervals between weigh-in and competition, the absolute best strategy is to avoid the use of any diuretics

or laxatives whatsoever. The best strategy is to enter your weigh-in lean, fed, hydrated, and strong – at the right body weight. This, of course, takes planning, a disciplined off-season, and support from coaches, parents, teammates. The key here is to not get discouraged. Athletes just like you are getting it done every single day and there's no reason why you can't be one of them.

Step 3B (for sports with LONG intervals between weigh-in and competition):

For those athletes who have some time between weigh-in and competition (i.e. 24 hours), using a proper weight-cutting (depletion) and rehydration/recovery strategy can allow you to compete at a weight much higher than the actual upper weight limit of your weight class. If you've ever seen 2 athletes in the same weight class squaring off on competition day and one looks at least 10-15 lbs bigger and stronger than the other, it's likely the bigger-looking athlete depleted himself for weigh-in, made the weight class, and then used the 24 hours between weigh-in and competition to refill with water, energy, and nutrients. This allowed him to weigh in at the upper limit of his weight class (198lbs for example), yet weight as much as 210-215lbs during competition. Of course, outweighing an opponent who's equally well-trained is a decided advantage. So here's how to seize this advantage.

What To Do Leading Up To Weigh-In:

Water Intake, Salt Intake, and Dropping Water Weight

First, 5 days out from the weigh-in, begin drinking 2-3 gallons of water a day and salting your food more than usual. Next, with 2 days out, begin cutting back on your water and salt. On this 2nd day drink only 1 gallon of water and eat no extra salt whatsoever. On the last day, drink no water at all until weigh in. Also, eliminate both extra salt and stay away from salty foods.

The logic behind this manipulation is that the initial huge amount of water and salt intake will stimulate the body to urinate often in order to maintain an appropriate water balance. This is good as you'll soon be cutting back on your water intake and salt intake dramatically – before your body has a chance to reduce urine volume. What this means is that you get rid of more water than you're taking in and you'll drop a significant amount of water weight.

Herbal Diuretics and Dropping Water Weight

On the day you begin your excess water intake (5 days out from the competition), begin to stimulate water loss by taking a mild diuretic like dandelion root. Diuretics stimulate the kidneys to excrete more water than normal, leading to body water losses.

Since dandelion root is a natural, gentle diuretic that slowly removes small amounts of water from the spaces outside of your cells, it's probably the safest diuretic, reducing water weight and total body weight without side effects (as long as you start out well-hydrated before taking it). Continue taking your herbal diuretic until weigh-in.

Carbohydrate Intake and Weight

Beginning 5 days out from weigh-ins, cut back on carbohydrate intake. Reduce the amount of fruits, complex carbohydrates, and sugars in your diet while increasing your protein and fat intake. As each gram of carbohydrate holds around 3-4 times its weight in water, by reducing carbohydrate intake you can reduce both the amount of carbohydrate weight in your body as well as the amount of water weight in your body.

Fiber and GI Waste

As your GI tract can contain both feces and partially digested food, you can typically lose a pound or two of non-functional weight with the ingestion of extra fiber. Adding a tablespoon of ground flax seeds to each of your feedings can increase your fiber intake and stimulate defecation, expelling extra materials from your GI tract. Start this 5 days out from weigh-in's and use up until you weigh-in.

Laxatives and GI Waste

If more GI waste needs to be cleared, the use of a mild laxative can help. Several laxative tea mixtures are available to gently stimulate your GI to expel feces and waste. Begin taking your laxative about 2 days out from your weigh-in (when you start to cut back on water intake). But be careful, use only mild laxatives. The use of strong laxatives or the abuse of laxatives can lead to a diarrhea that persists until competition day. So stick with the fiber and if you're still not regular, add in some laxative teas.

What To Do After Weigh-In:

As this process leading to weigh-in will induce weight loss, non-life threatening dehydration, and a low energy state, as soon as the weigh-in has been completed, it's time to begin the process of refueling and rehydrating.

Don't make the mistake that many athletes do and begin to pig out! Large feedings cause slow gastric emptying and this means

you'll ruin your chances of proper rehydration and refueling. Instead of pigging out, here's what to do.

First, stop your diuretic and laxative intake. Next, eat a small amount of food every hour or two leading up to the competition. Your feedings should consist of 8-10oz of fluid (usually a glucose electrolyte beverage such as Gatorade is a good choice and a better choice than water; Biotest Surge is also a good choice and better than water). The electrolytes and carbohydrates in these drinks accelerate rehydration and carbohydrate storage. By doing this, you should be able to replenish your water reserves by about 500ml-600ml (1.1lb) per hour.

During this time, you should also have some complex carbohydrates (such as a small baked potato or yam) and protein (protein supplements, perhaps added to your glucose electrolyte drink, or animal protein). These will help restore energy status AND help your body hang onto that fluid you're giving it.

Continue this strategy until competition, having your last feeding about 2 hours prior to competition. At this point, you should be 10-15lbs heavier with full muscles and lots of strength and energy.

Step 4: Record and Evaluate

As with the outcome-based strategies discussed in Chapter 9, it's critical to experiment, measure, and adjust. Not everyone will respond the same way to the strategies laid out above. So it's critical that you follow the plan, measure your outcomes, and adjust – if necessary.

And a dry run might also be necessary. Many of our athletes will actually practice these weight manipulation techniques during the pre-season or during less-important competitions; just to see how their bodies respond. This way, if the response is unfavorable and they don't compete well, they can alter their strategy for next time, a time when it does matter. The last thing you want to do is try out a weight manipulation strategy for the first time when competing for a national championship!

In the end, in grappling sports, where body weight is a critical part of the competition, it's impossible to avoid concern about making weight. Some health experts (doctors, nutritionists, etc) who don't understand grappling sports often suggest that all weight cutting strategies are bad and athletes

should just compete at their natural body weight. While this is good health advice, it doesn't always fit the demands of the sport. After all, there are times when a grappler simply needs to drop a bit of water (or other) weight quickly for an event. Therefore, this chapter was designed to show you the safest and most effective ways of doing so.

wrap-up

- Cutting weight using techniques such as eating and purging, extreme exercise in extreme heat, and overdosing on laxatives is extremely dangerous. Athletes using these techniques put themselves at risk for no good reason since there are safe weight loss techniques that can be used to drop weight quickly and effectively.
- The absolute best way to make weight for competition is to lose weight slowly, using the sound nutrition principles outlined in this book.
- If last minute weight loss is needed, a combination of lower carbohydrate diets, an increase in supplemental fiber, water and salt loading followed by short term water and salt restriction, gentle herbal diuretics, and gentle herbal laxatives can be used. Never use exercise to provoke rapid weight cutting. When using the strategies above, it's best to rest until you're rehydrated.
- If there's only a short time interval between weigh-in and competition (i.e. 1hr), it's important to only lose 2-3lbs in the last few days before competition. This is because you can only replace a maximum of 3lbs of water in the hour leading up to competition.
- If your sport allows a longer time interval between weigh-in and competition, using the strategies in this chapter you can quickly drop 10-15 lbs for weigh-in and replenish this weight within 24 hours.

part 4



Beyond the Grappler's Guide

Get Your Head Straight

In order to determine which training and nutrition program to use, many athletes follow what we call the Holy Grail approach. Throughout our years of consulting with thousands of athletes, we've learned that most people believe there is ONE perfect nutrition and training strategy out there, the Holy Grail of training and nutrition information. Folks also believe that when they find this Holy Grail program, they can follow it, with ultimate success, for the rest of their days.

With respect to nutrition, we often joke with clients, chiding them for believing there's a panel of nutrition gods sitting atop Mt. Olympus with a tablet containing this Holy Grail strategy. (And when the gods so choose to send a messenger to share this strategy with them, the athlete can rest, assured that they are now in possession of the one, unalterable path to nutritional salvation.)

While this view is common, nothing could be further from the truth. The truth is this:

Establishing your best nutrition plan is a process.

It's like the old saying "life is not a destination, but a journey." The same is true for nutrition.

As your body changes, your nutritional intake must change to accommodate the needs of this changing body. If you've gained weight, you'll need to make a change; if you've lost weight, another change; if you've increased your training intensity, another change; if you're taking a rest week, another change. While this need for constant change often intimidates nutritional novices, it need not. After all, there is a very simple way of making these changes. It just requires a simple decision-making process. And we're about to teach you this process; it's called outcome-based decision making.

So what's this process? Well, outcome based decision making is a fancy phrase describing the use of the scientific method in helping people achieve results. In science, we're always testing and doing experiments. To test something, we need to establish what change we want to make (in science we call this an independent variable), what we think will happen when we make this change (the hypothesis), and the measurements we intend to make in order to see what's happened (the dependent variable). In nutrition, we need to do mini-experiments on ourselves, making changes, guessing what will happen, and measuring what does happen.

At this point, you might be wondering how you'll know what changes to make. We'll teach you that in this chapter. However, don't just leave it at that. Remember, we're not representatives of the gods on Mt. Nutrition. Our

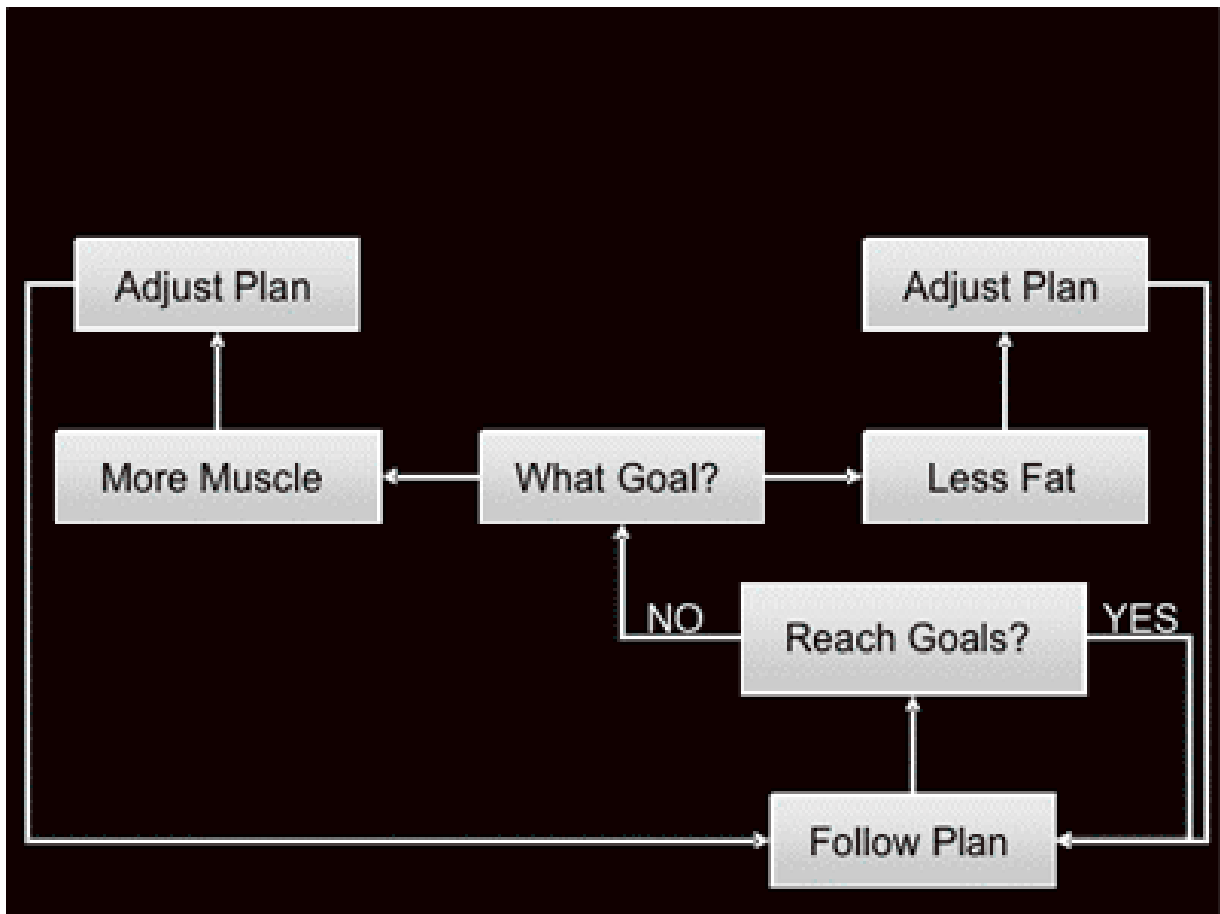
advice is sound, and gets results, time and time again. Yet even the most elite of athletes have to embrace the process of measuring and manipulating.

First, you've got to establish a set of measures you can regularly make (every few weeks - we suggest every 2 weeks for body composition measures, for example) to determine whether your plan is working or not. In order to measure health, you might have a routine blood analysis performed every few months or regularly assess how frequently you're getting sick; to measure body composition, you might have your body weight and body fat checked every 2 weeks; and to measure sports performance, you might choose a laboratory, gym, and or competition performance measure. Whichever measures you choose, make sure to select measures that are both reliable and consistent. Then keep tabs on whether or not your program is altering these measures in a positive direction. As a wise man once said, "however beautiful the strategy, you should occasionally look at the results." Make sure you're always looking at your results.

Of course, more important than simply looking at the results is altering your program based on the results. Many an athlete has grown frustrated when a nutritionist or coach has suggested a specific nutrition prescription and has failed to alter their prescription even in the face of negative results. So don't make this mistake. Continuing ineffective recommendations is unacceptable. Regularly monitoring your outcomes is the only way to ensure success.

To make it easy on you, I'd like to show you one way to visualize the steps you need to take to be an outcome-based decision maker (figure 1 below). In this figure, I've selected one type of goal (a body composition goal) although, of course, the same model can be used for all important outcomes including body composition, health, and performance.

Using outcome-based decision making means that in order to be sure your program is working, you've got to start your program (follow plan) and evaluate whether that plan is working (reach goals). We suggest that you evaluate every 2 weeks. If the plan is working, then the course of action is simple; keep following the prescribed plan. However, if the program isn't, the course of action is to figure out what exact goal you're trying to achieve (in this case, muscle gain or fat loss) and adjust the plan accordingly. Once this is done, repeat the "follow plan" process and see what happens. Keep adjusting until your goals are achieved.



Outcome-Based Decision Making For Body Composition Goals

While this outcome-based system may seem relatively simple, it's precisely the logical and systematic nature of this approach that makes it so effective. If more athletes were to apply this simple, systematic approach to all aspects of their eating and training, a huge amount of guess-work would be eliminated and effective programs could be arrived at quickly and efficiently.

Now, it's important to note, this book primarily focuses on the "follow plan" portion of this diagram. In it, we'll teach you how to best design a plan and how to follow it for your maximum chance of success. But don't forget to measure and adjust if it isn't working. Only with careful attention to what you're doing (follow plan) and what's happening (reach goals?) will you learn what to do next (continue to follow plan or adjust plan). If, after following the advice laid out in this manual, you get stuck, it's likely time to consult with a qualified sports nutrition professional with years of experience in working with a variety of different athletes and body types; especially one who has experience with sports (like grappling) in which power to weight ratios and muscle to fat ratios are very important.

wrap-up

- “However beautiful the strategy, you should occasionally look at the results.”
- There is no one, perfect nutrition plan. As your body changes, your nutrition plan must change to accommodate.
- The best way to know what's best for you is to follow a sound plan and evaluate your results every 2 weeks.
- If the outcome of what you're doing is positive, keep going. If it's undesirable, then make a change immediately. Evaluate that change again in 2 weeks to see how things are progressing.

Hopefully, at this point, you've read through the entire book and have learned a lot about good nutrition and supplementation. Rest assured, with the information contained herein, you've got everything you need. Armed with these resources, these secret grappling weapons if you will, all you've got to do is put the information into action for unbelievable results.

Remember this – if you apply this information correctly, you'll be stepping up to the circle hydrated, strong, lean, well-fed, and ready for business, while your opponents will be starving and dehydrating themselves on the way to the mat. There's no greater sense of power than knowing you're ready and your opponent is not.

At this point, we're coming to the end of this book. Before we close, however, we want to share with you some resources you may be interested in. After all, if questions arise, we want to point you to someone who can answer them. If you're looking for a great coach, we want to point you to the coaches that know how to get the job done. And if you want more great sports nutrition resources, we want you to know where to turn. So check out the following resources for your next step along the road to becoming a better grappler.

1. For more on grappling training including interviews, videos, articles, and books, check out Coach Fry's web site at www.grapplersgym.com.
2. For more on sports nutrition for a variety of goals, check out Dr Berardi's web site at www.johnberardi.com.
3. If you're interested in building muscle the natural way, check out www.scrawnytobrawny.com.
4. If you're interested in learning all about meal planning (including recipes) for sports nutrition, check out www.gourmetnutrition.net

About the Authors

John M. Berardi, Ph.D., C.S.C.S.

John Berardi is one of the world's foremost experts in the field of human performance and nutrition.

Dr. Berardi is an adjunct professor at the University of Texas at Austin, a prolific author, a sought-after speaker and a consultant to clients from all walks of life. Dr. Berardi's diverse clientele has included:

- US Bobsled Team
- Canadian National X-Country Ski Team
- Manitoba and Alberta Sports Centres
- Individual athletes in the NFL, NHL, NBA, MLB & more
- Individual athletes in Ironman Triathlon, Rugby, Cycling, Bodybuilding, Powerlifting, & more



Olympic, professional and elite athletes as well as executives and recreational weightlifters serious about achieving optimal results turn to Dr. Berardi when they need a trusted expert.

For more about John, his team, and the services they offer, visit www.johnberardi.com.

Michael Fry

Michael Fry is the owner and head coach of Grapplers Gym, a training center dedicated to the advanced training and conditioning of grapplers.

Grapplers Gym & www.grapplersgym.com offer the following services to clients:

- Grappling Instruction for Wrestling, Brazilian Jiu-Jitsu, Submission wrestling, and Mixed Martial Arts.
- Client consultation services including both team and one-on-one personal training and coaching.
- Educational products including e-books, videos, and DVDs covering a variety of training related topics.



Some of the best grapplers in the world turn to Michael and Grappler's gym when looking to take their game to the next level.

Visit Michael at www.grapplersgym.com for more.