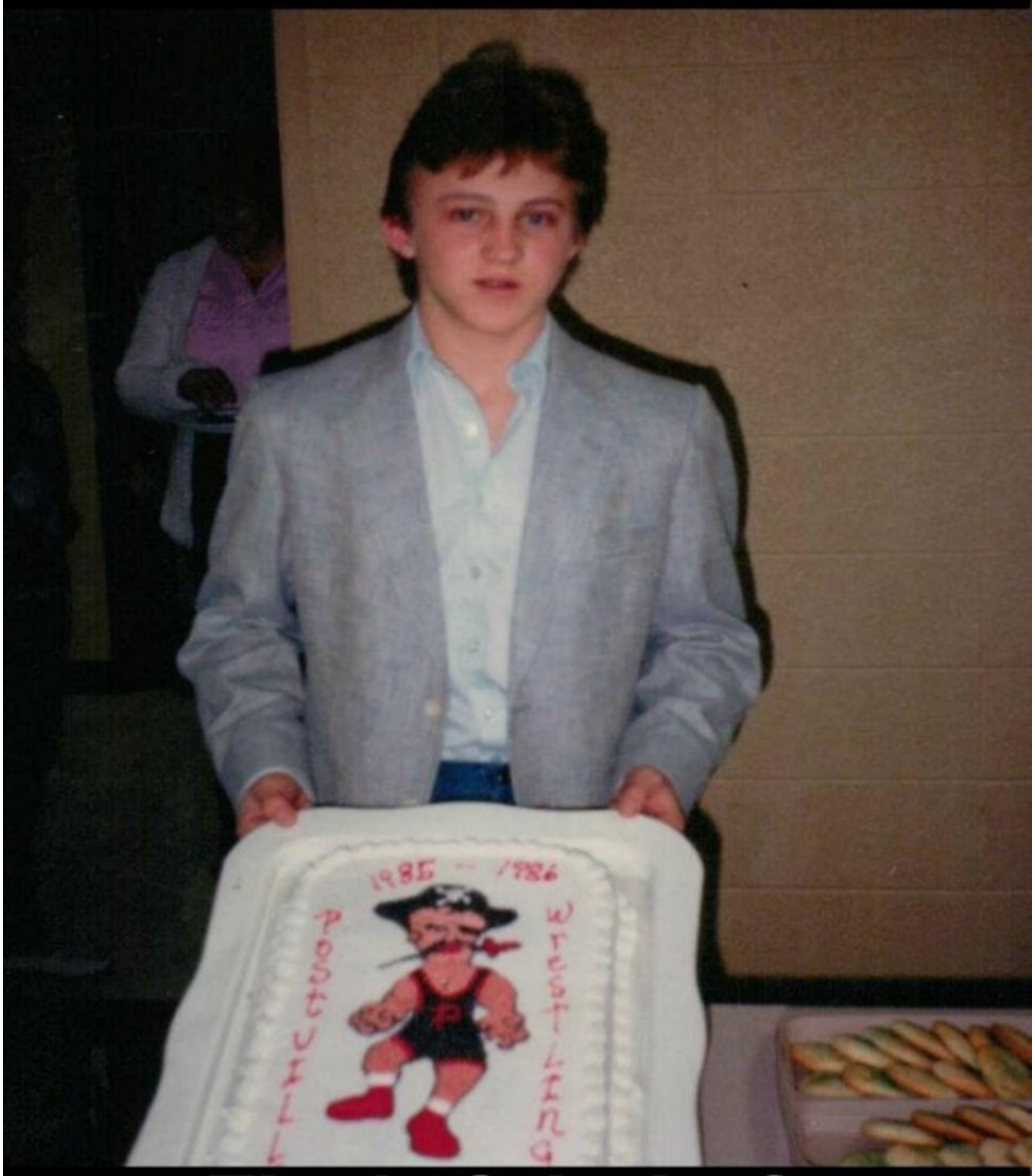
The Wrestler's Guide to Nutrition and Weight Loss



Tharin Schwinefus

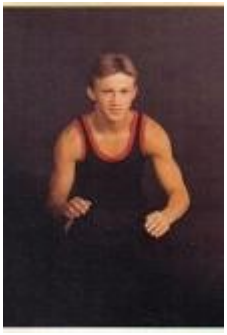
The Wrestler's Guide to Nutrition and Weight Loss

The information contained in this guide is for informational purposes only.

I am not a professional. You should always seek the advice of a professional before acting on anything that has been published in this e-book.

This e-book will cover some material that I have posted on my blog at http://wrestlingforglory.blogspot.com and on my website at http://essentialwrestler.webs.com.

This e-book will cover some basic information about nutrition and weight loss as it pertains to the sport of wrestling.



About the Author

Tharin began his wrestling journey in the fifth grade. Tharin's father had been a high school wrestler and Tharin wanted to follow in his father's footsteps by also becoming a wrestler. Tharin was a four year letterman at Postville High School in northeast Iowa. Tharin attended Wartburg College in Waverly, Iowa.

Tharin's most notable accomplishments include:

- Voted Most Dedicated Wrestler during his junior year of high school
- Conference Champion his senior year of high school
- Sectional Champion his senior year of high school
- District Champion his senior year of high school (thereby qualifying for the 1986 Iowa State High School Wrestling Tournament)
- Voted Team Captain his senior year of high school
- Voted Most Valuable Wrestler his senior year of high school
- Team member of the 1984-85 Postville High School Wrestling Team that was inducted into the Postville Pirate Athletic Hall of Fame in 2010

As you can see I have never been an Olympic Champion, World Champion, NCAA Champion, or even a State Champion. But, I wrestled from fifth grade through my senior year of high school. I even wrestled a few matches at Wartburg College in Waverly, Iowa which has become a NCAA Division 3 powerhouse in collegiate wrestling.

I continue to study many aspects of wrestling from technique and conditioning to nutrition and mental toughness. This e-book can help you become knowledgeable regarding nutrition and weight loss. This knowledge in turn may help you to become a better wrestler.

Introduction

“I'll be fine if I lose ten pounds in my sleep over night.” I used to say this jokingly to my younger sister while wondering how I was ever going to make weight for my next wrestling competition. During my sophomore and junior years of high school, I experienced the detrimental effects of starvation diets and dehydration that often accompany cutting weight. Cutting weight was a wretched experience physically, mentally, and emotionally. I would start out the season strongly and enthusiastically but see my performance drop toward the end of the season. I didn't win the conference tournament during either season and I never qualified for the state tournament.

During my senior season, however, I took a different approach to weight loss and the results were markedly better. I was a conference, sectional, and district champion that season. By winning the district tournament, I qualified for state which was a pretty big deal at the school I attended. Now some people might argue that I was a senior and that my years of wrestling experience finally paid off. Some might argue that I was just lucky that season. Perhaps no one would attribute my success that season to improving my diet and weight loss skills. But, I would. I have no doubt that learning to lose weight in an efficient manner had a big impact on my performance.

Maybe this book is unnecessary, perhaps even pointless. With guidelines in place to protect young wrestlers like preseason hydration and body composition assessments, perhaps a book on weight loss seems unwarranted and archaic. If that's the case, then I am happy.

Nonetheless, virtually every competitive athlete is concerned with his or her physique. Some athletes want to gain weight. Some want to lose weight. Some want to gain weight but only if it's muscular weight. Some athletes want to be lean even at the sacrifice of some muscle. A marathoner doesn't likely have the same physique goals as a football player. An athlete participating in a sport that has weight classes is undoubtedly concerned with his weight.

A high power-to-weight ratio can indeed be beneficial in a sport such as wrestling. Therefore, building muscle size and strength while reducing body weight through the loss of excess body fat can be advantageous.

However, most wrestlers seem to be more interested in “cutting” weight than in body composition. Cutting weight usually refers to the quick loss of weight in a few days or even hours through crash diets, sweating, and other methods. On the other hand, changing body composition (gaining muscle and/or losing fat) is a process that can take weeks or even months.

Wrestling, more than any other sport, seems especially entwined with weight loss. Some wrestlers cut weight because they believe they'll have a competitive advantage. Others wrestle at a particular weight to help out their team or because there is an open spot at a certain weight on the varsity squad.

Unfortunately, many wrestlers cut weight even though the benefit of doing so is questionable. Some experts believe cutting weight is detrimental to performance and dangerous, Sadly, the attempt to lose weight rapidly resulted in the deaths of three collegiate wrestlers in 1997. No amount of wrestling success is worth endangering one's health over. Currently high school wrestlers are required to observe certain body fat and hydration requirements. In addition, they may lose only a certain amount of weight per week. Of course, some wrestlers try to get around these rules by losing weight before the season begins.

Being a former wrestler myself, I know about the pain and discomfort of cutting weight.

Cutting weight to compete in high school wrestling was one of the worst experiences of my life. I didn't have to cut weight my freshman year. I wrestled in the 98 lb. division and that's about what I naturally weighed. However, I decided to also wrestle at 98 pounds during my sophomore season when I weighed about 110 pounds. I had to cut twelve pounds while having no idea how to go about it. I thought it would be easy. I figured I just wouldn't eat or drink much and that I'd wear several layers of clothing during practice.

But, it was not easy. I knew little about calories or proper nutrition. I had no idea how detrimental crash dieting and dehydration could be. I hated cutting weight. I was always hungry, dehydrated, and weak. I'd never felt so weak in my life. I essentially had to keep losing those same twelve pounds over and over. After making weight, I would gorge myself and feel overly full with an upset stomach.

Amazingly, I actually started my sophomore season strongly, winning matches and tournaments. But, by the end of the season I didn't care much about qualifying for state. I was so sick of cutting weight. I was seeded first in the sectional tournament but ended up placing third.

I cut about ten pounds during my junior year and followed almost the same path as the year before. I placed second in the conference and qualified for districts that year. I could have won districts but I ran out of gas. And, I was emotionally depleted as well. I ended up placing third after losing a match to an opponent I had beaten easily the week earlier at sectionals.

I cut about twelve pounds during my senior season. But, I had finally had enough of starvation, dehydration, and losing crucial matches. I learned to count calories and lose weight slowly. I maintained my competitive weight easily throughout the season. It was still hard at times. I was still hungry sometimes. But, I never had to go a single day without water or food that season. Did it pay off? I was conference champion, sectional champion, and district champion at 112 pounds that season. I had finally qualified for state and had done it in commanding fashion. I think that learning about nutrition and how to diet properly made all the difference that season.

Even if a wrestler isn't concerned with weight loss he should still be aware of the role nutrition can play in his performance. You may have heard the analogy that your body is like a car and it needs the right fuel to perform optimally. But, what does optimal nutrition entail?

Why are wrestlers so inept at making wise nutritional and weight loss decisions? I suppose a lot of it has to do with tradition. We see other wrestlers doing things and we copy them. Or, we hear or read advice that has no basis in science and yet follow it anyway. Also, it takes a lot of discipline to watch one's diet year round and to begin a weight loss regimen early enough to avoid the pitfalls of rapid weight loss. This needs to change.

As I mentioned, I hated cutting weight. But, over the course of those years I learned a lot about nutrition and weight loss. That first hand knowledge has been accompanied by many years of personal research. I have always wondered how I could have handled my nutrition and weight loss for wrestling more effectively. I have continued to study books and articles over the last several years. When it comes to nutrition and weight loss I know plenty.

The mission of this book is to help young wrestlers understand the importance of sound nutrition and the drawbacks and dangers of rapid weight loss. This book is designed to answer your nutrition and weight loss questions so that you can be healthy and at your competitive best. I want wrestlers to know what to eat before and after practice and competition. I want wrestlers to know what foods can help and hinder performance. Above all, I want wrestlers to know how to lose weight safely if that is the route they choose. If a wrestler makes the choice to cut weight he needs to do it safely. What is the best diet for weight loss? Can a wrestler lose weight rapidly and safely? How dangerous is dehydration?

According to the Iowa High School Athletic Association, “The best weight for wrestlers, or anyone for that matter, is one that is safe and can be comfortably maintained by eating a healthy, balanced diet. Wrestlers should be able to concentrate more on developing wrestling skills, than on maintaining, or losing, weight. Those who spend more time thinking about food than wrestling are probably trying to lose too much weight and/or eating the wrong foods.”

I agree. Personally, I think young wrestlers should essentially eat whatever they want and simply wrestle at their natural weight. But, I know that's not always feasible. So, at least lose weight safely and with as little pain and discomfort as possible.

You may be wondering why you should listen to me. I'm not a doctor or a registered dietician. I'm certainly not a world class athlete. Well, I don't think you should blindly follow any concepts discussed in this book or any other book for that matter. Do your own research. Look at the literature. You can read books and articles and decide for yourself whether you want to try a particular strategy.

This isn't a book book with rules and a generic plan that everyone should follow. This book doesn't tell you what to eat. This book doesn't have recipes. This book provides an overview of concepts and strategies that *may* help you improve your health and athletic performance. In addition, this book provides strategies that *may* help you lose weight if that is your goal.

Please bear in mind when reading this book that I am not a medical professional. I am not a certified personal trainer or registered dietician. I am not a doctor, scientist, or professor. I am not a world class athlete. **You should consult a physician before starting any dietary or exercise regimen. This book is for informational purposes only.**

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Chapter 1: Nutritional Primer

What is a Nutrient?

My first exposure to nutritional advice was learning about the four basic food groups as outlined by the USDA when I was in grade school.

The four basic food groups were:

- Meat – including poultry, fish, eggs, beans, peas, and peanut butter.
- Milk – as well as cheese.
- Breads and Cereals – including rice and pasta.
- Fruits and Vegetables

The USDA would later introduce the Food Guide Pyramid in order to show the recommended servings of each food group. For example, individuals were encouraged to consume 6 to 11 servings of bread, cereal, rice, or pasta daily. An updated pyramid was called MyPyramid and the current nutrition guide is called MyPlate.

What is a nutrient? Nutrients are substances that provide our bodies with energy. Nutrients also supply material to promote growth, repair of body tissues, and regulate bodily functions.

The six essential nutrients are carbohydrates, proteins, fats, vitamins, minerals, and water.

These six essential nutrients can be divided into two categories: *macronutrients* and *micronutrients*.

Macronutrients include carbohydrates, proteins, fats, and water. Some experts consider water to be in a category of its own. Micronutrients consist of vitamins and minerals and are different from macronutrients because they are needed in only small amounts.

The macronutrients (carbohydrates, proteins, and fats) are often discussed in relation to weight loss. These nutrients make up the bulk of your diet and provide energy. In *The Diet Docs' Guide to Permanent Weight Loss*, the authors stress that understanding the macronutrients and how they work in your body is a key aspect in the quest to lose weight.

Carbohydrates

Carbohydrates are the body's primary source of energy. Examples include fruits, breads, grains like rice and corn, pasta, potatoes and other starchy vegetables, and sweets like cookies.

According to Joe Klemczewski, PhD, “All carbohydrates, whether classified as sugar, starch, or fiber, end up being digested into glucose, the smallest form of sugar possible, which the body then uses for energy.”[1]

Simple and Complex Carbohydrates

You may have heard carbohydrates referred to as simple and complex. Simple carbohydrates contain one or two sugars while complex carbohydrates contain three or more sugars. Complex carbs are sometimes referred to as starches. So, the classification has to do with the chemical structure of a food.

Simple carbs are found in table sugar, honey, fruits, and foods like candy and soda. These foods are often said to contain “empty calories” because although they provide energy they do not contain nutrients like vitamins and minerals.

Complex carbs are found in breads, cereals, legumes, potatoes, pasta, and rice. Sometimes complex carbs are refined and enriched like white bread and white rice. However, you can also find minimally processed whole foods like brown rice and whole grain breads.

Generally speaking, complex carbs take longer to break down and digest causing less of an insulin response. On the other hand, simple sugars can cause a dramatic rise in blood sugar levels and a corresponding spike in insulin. Ingesting simple carbs may cause you to feel hungrier sooner than if complex carbs had been consumed. This is because surges in blood sugar cause insulin to be released which in turn brings your blood sugar down. The blood sugar and insulin response is slower when complex carbs are consumed.

Of course, complex carbs are not always better than simple. Fruit is loaded with nutrients while white bread is not. And, some refined carbs like white bread can also cause a rapid rise in blood sugar.

Therefore, it's best to choose unrefined carbohydrates (whether simple or complex) like fruits, vegetables, legumes, and whole-grain breads and cereals.

Fiber

Dietary fiber is a type of carbohydrate that makes up the indigestible part of fruits, vegetables, and grains. You may have seen advertisements for high-fiber cereals or powders containing psyllium. Perhaps you've heard that eating salads or prunes can help keep you “regular.”

Fiber comes in two forms: soluble and insoluble. Soluble fiber absorbs water and forms a gel during digestion. It has been touted to help control cholesterol and blood glucose levels. It may help keep you feeling full longer. Insoluble fiber does not dissolve in water and typically speeds the movement of food through your digestive tract.

Some fiber acts as a prebiotic promoting the growth of healthy bacteria in your gut. Prebiotics feed our friendly gut flora.

Therefore, fiber is generally considered an integral part of a healthy diet.

Dietary fiber can be found in wheat bran, oat bran, beans, nuts, seeds, fruits, vegetables and various other foods.

Resistant Starch

Resistant starch (RS) is another type of dietary fiber. Resistant starches are starches that resist digestion in the small intestine. Similar to other fibers, resistant starch can act as a prebiotic in the large intestine feeding healthy gut microbes. Resistant starches are fermented in the large intestine (colon) producing short-chain fatty acids (SCFAs).

Resistant starch has been touted to aid in colon health, lowering cholesterol, weight control, insulin sensitivity, and glucose control. The aid in weight control may have to do with RS increasing satiety.

Some foods containing resistant starch include slightly green bananas, oats, puffed wheat cereal, corn tortillas, sourdough bread, pearl barley, white beans, chickpeas, peas, lentils, and cooked and cooled potatoes. When potatoes are cooked and cooled they contain more resistant starch than if eaten hot. The same is true of cooked and cooled rice and pasta. Just what you wanted, huh? Green bananas and cold potatoes. Hummus (made from chickpeas) or some healthy cold potato salad or chilled potato soup might be good though.

A product called Hi-maize can be used as a flour replacement or added to other foods to increase one's intake of RS.

A couple of books addressing resistant starch foods include *The Carb Lover's Diet: Eat What You Love, Get Slim for Life* and *The Skinny Carbs Diet: Eat Pasta, Potatoes, and More! Use the power of resistant starch to make your favorite foods fight fat and beat cravings*.

I want to mention that resistant starch has its critics. Resistant starches are not a ticket to overindulge. Calories always matter. Some authors contend that resistant starch is nothing special and that an individual can obtain beneficial short-chain fatty acids by eating other sources of soluble fiber.

One of the beneficial short-chain fatty acids produced by the fermentation of resistant starch or soluble fiber in the colon is butyric acid. Butter is also a rich source of butyric acid. But, whether butyric acid ingested in the form of butter is better than butyric acid produced by the fermentation of resistant starch in the colon is up for debate. Some experts believe that both options are good.

Can resistant starch help a person burn fat? Maybe. The effect that resistant starch has on satiety (i.e. feeling full) may be one of its greatest weight loss benefits.

Protein

When you here the word protein, you may imagine biting into a thick juicy steak. A three ounce serving of T-bone steak might supply about 20 grams of protein. And, the protein would be made of smaller building blocks called amino acids. Some amino acids are considered essential because they cannot be made by your body and must be supplied by your diet.

Some amino acids, such as glutamine, arginine, and leucine have become popular with athletes. Bodybuilders seem especially interested in branch-chained amino acids (BCAAs) which can provide energy for workouts as well boost muscle growth. They can provide fuel for workouts because they can be oxidized in the cell's mitochondria.

Protein is an integral part of an athlete's diet. Many experts believe that an athlete's protein needs are higher than that of the general population because they are more active. An athlete seeking to optimize his performance may be encouraged to consume 1 gram of protein per pound of body weight, at least as a starting point. So, if a wrestler weighed 150 pounds he would consume 150 grams of protein per day. If an athlete is dieting he may be advised to consume even more (e.g. 1.5g/lb.).[2]

Protein's main responsibility is the building and repairing of body tissues. Bodybuilders, for example, are interested in building muscle mass. In addition, protein plays a major role in supporting skin, nail, and hair health. Moreover, many hormones in the body are made from protein.

Dietary proteins used to be considered complete (containing all of the essential amino acids) or incomplete. As it turns out, almost every food source contains all of the amino acids. However, some vegetable sources of protein contain what is called a limiting amino acid. This is the reason that pairing beans and rice works well. The amino acid profiles of the two foods complement each other well.

Different methods can be used to assess the quality of any particular protein source. For example, biological value (BV) is a commonly used measure. Another way of rating protein quality is by using the protein efficiency ratio (PER). Other methods for assessing protein quality exist as well. Most so-called quality proteins are from animal sources such as eggs and milk although soybeans are also considered a high quality protein depending on the method of measurement used.

Sources of protein include meat, poultry, fish, eggs, dairy products, beans, nuts and nut butters, and soy foods such as tofu.

Fats

Many people think that dietary fat is bad. But, they're wrong. Fats (lipids) play important roles in our bodies. Lipids are commonly made from smaller building blocks called fatty acids. Fat, of course, is a source of energy. In addition, steroid hormones (such as testosterone) are made from cholesterol which is, of course, a lipid. In fact, according to Dr. Eric Serrano, "Almost every hormone you have is cholesterol-based except for protein-based hormones like insulin and growth hormone."[3] Moreover, a class of lipids called phospholipids are the major building block of cell membranes.

Did you know your brain is 60% fat? Did you know that certain fatty acids promote eye health? The retina of the eye contains a high concentration of the fatty acid DHA.

You may have heard of saturated, monounsaturated, and polyunsaturated fat. You may have also heard of omega-3 and omega-6 fatty acids. The omega-3 and omega-6 are considered essential fatty acids (EFAs) because they must be acquired through your diet as your body cannot make them.

Saturated fat is generally considered bad while monounsaturated and polyunsaturated fats are generally considered good. For example, you may have heard that olive oil (monounsaturated) is good for you. In addition, you may have heard of the health benefits associated with flaxseed oil and fish oil (polyunsaturated) consumption. However, some people consider coconut oil (saturated) to be healthy as well. Coconut oil contains a significant amount of medium chain triglycerides (MCTs) and has been touted as a weight loss aid.

Trans fatty acids are generally considered the unhealthiest fats of all. Trans fatty acids are generally found in many types of margarine, baked goods like donuts and cookies, fast food, and snack foods. Trans fats have been implicated in impairing cardiovascular health as well as promoting inflammation, obesity, and insulin resistance. Key words to look for on food labels include "partially hydrogenated vegetable oil" and "vegetable shortening." Individuals are advised to avoid trans fats as much as possible.

Interesting Fats

Conjugated linoleic acid (CLA) is both a "trans" fatty acid and a "cis" fatty acid found primarily in the meat and dairy products of ruminants although CLA supplements are marketed as well. CLA has been promoted for its disease fighting and fat reducing properties. It has also been touted as an aid for increasing muscle mass. Grass-fed meat and dairy products are an excellent source of CLA. Interestingly, a product called Cheez Whiz contains a fair amount of CLA. Even though CLA is a trans fatty acid, it is not generally considered to be dangerous like synthetic trans fatty acids.

Cetyl myristoleate (CMO) is a fatty acid ester often sold in supplement form and promoted as a treatment for conditions such as fibromyalgia and arthritis.

Health experts usually recommend limiting saturated fats and trans fats while consuming more healthy monounsaturated and polyunsaturated fats.

Sources of fat include meat, dairy products, avocados, olive oil, coconut oil, and nuts.

Even though some fats can harm the body, fats are an important part of a healthy diet.

Dr. Eric Serrano sums it up best by stating, “Fats are amazing substances.”[4]

Vitamins and Minerals

Vitamins are compounds which are needed in small quantities to sustain life. You may have heard of the various B vitamins as well as vitamins C, A, D, E, and K. Perhaps you've heard the story of how sailors cured and prevented scurvy by eating citrus fruits containing vitamin C. Vitamins can be categorized as water-soluble (B vitamins and vitamin C) or fat-soluble (A, D, E, and K).

Minerals, like vitamins, are essential to bodily functions. However, vitamins are organic while minerals are inorganic. Some minerals you may have heard of include iron, calcium, magnesium, potassium, sodium, and zinc. For example, we've all heard that calcium helps build strong bones.

I'm not going to go into detail concerning vitamins and minerals. You can get them by eating a healthy diet. Supplements should only be used if recommended by a medical professional. Although they are important, it is possible to do your body harm by getting too much of certain vitamins and minerals. Many articles are available concerning vitamins and minerals if you want to learn more.

“Vitamins and minerals are considered essential nutrients – because acting in concert, they perform hundreds of roles in the body. They help shore up bones, heal wounds, and bolster your immune system. They also convert food into energy, and repair cellular damage.”[5]

In short, vitamins and minerals help the human body to work properly.

Water

The human body is approximately two-thirds water. Water aids in many bodily functions. Water helps transport nutrients throughout the body as well as remove waste products from the body.. Water also acts as a lubricant cushioning joints and other structures. In addition, water helps regulate body temperature. Moreover, water aids in digestion and in most of the metabolic reactions in the body. The amount of water a person needs daily depends on factors such as age, health, and activity level.

Chapter 2: Optimal Nutrition for Athletes

A Brief History of Sports Nutrition

The wrestler Milo of Croton is one the most legendary athletes of the ancient world. He was a six-time Olympic champion. Legend has it he consumed 20 pounds of meat, 20 pounds of bread, and 3 pitchers of wine a day.

Legendary bodybuilder and trainer Vince Gironda advocated a diet of steak and eggs to get cut for a contest. He was also a proponent of raw milk, milk and egg protein powder mixed with cream, butter, various amino acid tablets, desiccated liver tablets, kelp, glandulars, and green vegetables.

The legendary martial artist Bruce Lee usually avoided dairy, flour, and sugar while finding value in fruit and vegetable juices as well as protein drinks. He took some of the popular supplements of the day such as bee pollen, royal jelly, ginseng, wheat germ oil, and brewer's yeast. He mainly considered food to be fuel for the body and had little interest in eating for pleasure. He stated, “When you are a martial artist, you only eat what you require and don't get carried away with foods that don't benefit you as a martial artist.”[6]

The Gracie family is known for their expertise in the discipline of Brazilian jiu-jitsu (a popular form of grappling). What most people don't know is that a special diet was developed by Carlos Gracie. This method of eating involves proper food combining, avoidance of pork and sweets, and a fondness for fruits and greens.

So, am I suggesting that meat is the best food a wrestler can consume? Should you eat like Milo of Croton or an old school bodybuilder? Of course not. But, protein is certainly an important part of a wrestler's diet which I will elaborate on later.

Am I suggesting that Bruce Lee or the Gracie family have all the answers when it comes to proper nutrition? Not necessarily, although it is interesting to consider their dietary preferences. Bruce Lee was ripped (defined, cut, and muscular) and the Gracie family has produced some of the best grapplers in history so it's at least worth considering their dietary approaches.

Sports nutrition is a specialized branch of nutrition that studies nutritional practices in relation to athletic performance. Sports nutrition is concerned with improving an athlete's training, recovery, and performance.

An interesting example from the history of sports nutrition is the development of Gatorade at the University of Florida in the 1960s.

Bodybuilders, of course, have always been interested in nutrition. They didn't wait for a discipline called sports nutrition to come along to tell then what to eat. They learned a lot about gaining muscle and reducing fat through trial and error. Many athletes have learned

this way.

One of the first popular books on sports nutrition, entitled *Eat to Win: The Sports Nutrition Bible*, was written by Dr. Robert Haas and published in 1983.

In *Eat to Win* he states, "First I'll show you how to increase your energy, endurance, and sports performance to peak levels, far beyond what you could hope to achieve by following the traditional steak-and-eggs high-protein diets that have long been recommended by the established order: coaches, trainers, dietitians, and team physicians."[7]

In *Eat to Win*, he recommends a diet comprised of 60 – 80% complex carbohydrates, 10% simple carbohydrates (sweets), 10 – 15% protein, and 5 – 20% fats.

He likes to remind his readers that *fat burns in the flame of carbohydrate*. This has to do with your body's Kreb's cycle. He claims the Kreb's cycle would not burn fat efficiently without adequate carbohydrates in one's diet. Carbohydrates (glucose) must be present to burn body fat through the Kreb's cycle. I should note that other authors claim that eating sufficient dietary protein will also make this fat metabolism occur because amino acids can be converted into glucose (carbohydrate). In addition, your body can combine fatty acids to form "ketone" bodies to be used for energy when glucose isn't available. However, the brain and nervous system prefer glucose over ketone bodies for energy.

Haas states, "Complex carbohydrates are the best foods for peak performance because they are the only truly clean burning, readily available source of blood sugar. Complex carbohydrates such as brown rice and pasta are worth their weight in gold to professional athletes who make their living by winning; they are no less valuable to weekend athletes who want to excel at their favorite activities."[8]

Haas was a nutritional consultant to two tennis legends, Ivan Lendl and Martina Navratilova. Another tennis legend, John McEnroe, was asked if he'd ever tried the Haas diet. He said he preferred Häagen-Dazs.

Dawn Clayton of *People* writes, "Basically Haas' winning formula involves keeping fats and oils to a minimum, decreasing protein and increasing complex carbohydrates such as pasta, cereals and vegetables – and lots of water."[9]

In his books, Haas mentions that carbohydrates are protein sparing. This means that adequate carbohydrates in one's diet will help prevent muscle tissue loss while one is on a fat loss diet. The idea is that the protein you eat and even your muscle tissue will be used to provide energy for your body if dietary carbohydrate and fat consumption are too low. You ideally want protein to be used for growth and repair and other important processes as opposed to being converted into glucose.

In regards to the protein sparing action of carbohydrates, legendary bodybuilder Dorian Yates states, "Yes they are protein sparing and they let protein do the job it is supposed to do, which is tissue repair. Whereas if you don't have enough carbohydrates and fats for your energy requirements your body could start using the protein, which is not what you really want."[10]

Macronutrients

In chapter one I discussed carbohydrates, protein, and fat. But, how much of each macronutrient do we need in our diet? Well, I mentioned that Dr. Robert Haas believes in a high-carbohydrate, low-fat diet. Some experts believe in eating healthy whole foods and not worrying too much about calories or certain percentages.

Personal trainer Richard Rigor likes to divide an athlete's diet into thirds. One third of total calories is allocated to each macronutrient. Author Lyle McDonald likes to set protein calories first. For instance, an athlete may eat 1.5 grams of protein per pound of lean body weight. Then he may allocate 20 – 25% of calories to fat. Calories for carbohydrates would be whatever is left after subtracting protein and fat calories from total calories.

As a an athlete in a mixed sport activity like wrestling your carbohydrate requirements may be less than, say, a pure endurance athlete but higher than a pure strength/power athlete.

Vegan advocates like Dr. Joel Fuhrman may be more concerned about micronutrients than macronutrients believing that protein is over emphasized in most athlete's diets.

And, low-carb or paleo advocates may think that carbohydrates are over emphasized in most athlete's diets and may question the so-called high-carb paradigm that most athletes follow.

A conventional dietitian and many other experts will most likely continue to advocate that athletes eat a high-carbohydrate, moderate-protein, and low-fat diet.

In *The Athlete's Guide to Making Weight*, for instance, the authors set carbohydrate intake at 50 – 60 % of total calories.

The authors state, “One of the most important parts of every athlete's diet is sufficient carbohydrate daily because all athletes need to restore the glycogen that has been depleted by exercise.”[11]

In *The Grappler's Guide to Sports Nutrition*, the authors John Berardi and Michael Fry believe that athletes need to focus more on food than on macronutrient percentages. They do, however, stress the need for adequate protein and encourage athletes to consume some protein at each meal.

The authors state, “If you're still wondering how much you should be eating, here's a good rule of thumb. Begin by eating around 2.2g/kg body mass (or 1g protein/lb of body mass). To this, add carbohydrate and fat in order to meet total daily energy needs.”[12]

They set fat at around 30% of total daily calories. They believe that the type of carbohydrate and when it is consumed is a more important consideration than total carbohydrate amount.

The authors suggest that an athlete may try experimenting with different protein levels to see how their body composition and performance respond. Lyle McDonald has also noted that some athlete's fare better with higher carbohydrate intake while some fare better with lower

carbohydrate intake. Factors like an individual's insulin sensitivity can make a difference.

Meal Timing

Many experts continue to suggest that it's better to eat several small meals daily than three larger meals. Others, like personal trainer Jillian Michaels, believe it's better to eat in a more conventional fashion (e.g. three meals and a snack per day).[13] And still others believe in practices like intermittent fasting and carb back-loading (i.e. eating the majority of your carbohydrates in the evening).

Some experts suggest eating the majority of your carbohydrates after training. Eat fruits and vegetables (and slow-digesting carbs like oatmeal, whole wheat bread, brown rice, and sweet potatoes might be okay as well) during the day while saving foods like bread, potatoes, pasta, and rice for after workouts (e.g. oatmeal, an apple, or broccoli would be fine during the day but don't eat white bread, white potatoes, pasta, or other fast-digesting carbohydrates until after wrestling practice).

So, it's really about your preferences and what you find works for you. Some experts claim that eating several small meals a day has a metabolic advantage and others claim it doesn't. Also, I should note that your body is in a prime state to store carbohydrates as glycogen (stored fuel) as opposed to fat right after exercise which is why that period of time is an excellent time to consume fast-digesting carbohydrates. The rise in blood sugar levels and resulting insulin spike you may experience at that time may actually be beneficial.

Pre-workout and Post-workout Nutrition

Some experts suggest having some carbohydrates and protein just prior to workouts and fairly soon after workouts. A few even suggest ingesting some food during a workout depending on the circumstances.

You can purchase products designed specifically for post-workout consumption. Interestingly, some experts have suggested that a simple glass of chocolate milk is an inexpensive and satisfactory post-workout option. Others have suggested that a bowl of cereal (e.g. cornflakes and milk) can also provide adequate post-workout nutrition. Many bodybuilders consume a combination of whey protein and fast-digesting carbohydrates after working out. Still, others simply prefer to have a regular meal like a chicken breast and rice after working out.

During a workout, you want to have enough energy to fuel your workout. After a workout, you want to replenish glycogen stores and provide material for muscle repair and growth. And, of course, you want to be well hydrated going into workouts and competition.

You can find many articles on pre-workout and post-workout nutrition online.

The main consideration for pre-competiton nutrition is to abstain from doing anything out of

the ordinary. Don't try a “new” food before competition only to find out that it doesn't agree with you. Don't overeat before competition. I've done that. Don't eat things that could potentially disturb your stomach. I had a classmate who ate a few bowels of chili before a basketball game. He still played well, but it probably wasn't the best thing he could have eaten.

The best plan is to eat a small but adequate amount of easily digestible food before competition and to make sure you're hydrated.

Supplements

An athlete has many supplements he can choose from:

- Whey protein
- Casein protein
- Milk protein concentrates
- MRPs (meal replacement products)
- Glutamine
- Beta-analine
- Creatine
- BCAAs (branch-chained amino acids)
- Caffeine
- Fish oil supplements
- Greens supplements
- Pre-workout drinks
- Post-workout drinks
- Miscellaneous sports drinks and nutrition bars
- Waxy maize
- Superstarch

- Multivitamin/mineral supplements

I could write a book about supplements alone. As the name implies they should only be used as a supplement to a well designed training and nutrition program. Some supplements like protein powders seem fairly harmless and are basically just food. Other supplements are intended to enhance performance and yet they may have adverse side effects. Therefore, only use supplements that have been proven to be safe and effective. Financial and legal considerations need to be kept in mind as well.

Yes, you may have to do some research. For example, you may read that beta-analine can improve work capacity in wrestlers. But, perhaps it's expensive. Or, maybe it causes uncomfortable side effects in some people. Perhaps you're not even training and eating properly and supplementing with beta-analine would be an expensive and pointless endeavor. There's nothing wrong with wanting an edge and some supplements do have the potential to give us a performance advantage and even improve our health. But, there are no magic pills. Nothing will replace proper training and nutrition.

The authors of *The Grappler's Guide to Sports Nutrition* state, “Simply put, supplements are not and never were intended to be substitutes for hard work in the gym and smart work in the kitchen.”[14]

Chapter 3: Weight Loss Options

Calories

Imagine dining on a cheeseburger, fries, and a soda at a fast food restaurant. It sounds good to me! I really enjoy cheeseburgers. But, a meal like that might contain 1200 calories and 50 grams of fat. On the other hand, for about *one third* of the calories and very little fat you could have a boneless skinless chicken breast, plain baked potato, green beans, and a glass of fat free milk. Or, to put it another way, you could eat approximately 10 (4 oz. portions) of boneless skinless chicken breast for that same 1200 calories. The calorie counts here may not be precise but are close enough approximations for me to make my point – calories matter.

I realize that for many of you a plain baked potato sounds unappetizing. A boneless skinless chicken breast may sound awfully bland as well. I'm just trying to illustrate the fact that many people are unaware of how many calories they consume. If you want to shed some body fat, you're going to most likely need to cut some calories.

I knew a wrestler in college who was trying to watch his weight. After practice one evening, he told the coach he was going to have a fish sandwich that night at a fast food restaurant. The coach thought that was a good idea and added that having a small salad with the sandwich would be a good choice as well. I have news for you – a deep-fried fish sandwich from a restaurant is not low in calories or fat. A sandwich like that could contain 400 calories and 20 grams of fat conservatively. Many people have some notion of what healthy food is and they're often wrong.

I consulted two books occasionally during my senior season. I believe one of those books was entitled *Better Homes and Gardens Diet Book* (1955). It had some amusing illustrations and offered advice on healthy eating as well as weight reduction. I think it contained calorie counts for various foods as well as sample daily meal plans for 1000, 1250, and 1500 calories.

I also had a calorie counting booklet like you would find at the checkout in a supermarket. This pocket guide cost only about 50 cents I would guess. These calorie count booklets would contain calorie counts for various foods as well as weight charts for men and women. Some of these booklets would supply calorie counts for brand-name foods including those from restaurants. Some booklets had calorie counts organized alphabetically by food type and some by food categories such as frozen dinners, soups, or vegetables for example.

These books came in handy during a time period when nutrition labels on food products weren't a requirement. I think the *Better Homes and Gardens Diet Book* may have mentioned that certain foods, such as green beans, could be eaten in unlimited quantities. I learned that coffee and ice tea had no calories as long as you added no milk, cream, or sugar. I found out that spices like salt, pepper, and cinnamon had no calories.

Many weight loss gurus recommend determining your daily caloric needs as the first step in a weight loss program. In some cases, individual athletes have been able to *add* calories to their diets and still lose weight by changing the macronutrient percentages. I have read articles claiming that macronutrient percentages make a big difference and other articles stating that it doesn't matter. If you're consuming 1,500 calories a day and trying to lose body weight, does it matter whether the percentage of carbohydrates from that 1,500 calories is 40% or 80%? Maybe. I guess it depends who you ask or what study you read. For instance, some experts claim that higher protein and lower carbohydrates in a person's diet can lead to faster weight loss even when calories are kept the same. This could be because protein has a greater thermic effect than the other macronutrients and because it stimulates the production of glucagon, a hormone that can play a role in fat loss.

Some claim that protein helps blunt hunger and is more satiating when faced with a caloric deficit. Just remember that calories matter. You can't gorge on protein or any macronutrient. The metabolic advantage of protein may indeed exist but that advantage may be modest.

I believe that anyone interested in weight loss needs to at least have some knowledge of calories. Calories are, of course, a unit of energy. Calories are not bad. They are simply a measurement of energy. Of course, if a person consumes too many calories and engages in little physical activity he or she may gain weight. You knew that already, right?

Various formulas can be found for determining how many calories one should consume daily to lose weight.

My favorite formula is this:

- If you want to lose weight, take your body weight times 10
- If you want to maintain weight, take your body weight times 15
- If you want to gain weight, take your body weight times 20

For example, if a wrestler weighs 150 and wants to lose weight then he would consume 1,500 calories daily (150 x 10 = 1,500).

Or, that same wrestler could take his weight times 15 to arrive at the figure of 2,250 (150 x 15 = 2,250). He could then subtract 500 from 2,250 to arrive at 1,750. I took his weight times 15 to figure out approximately how many calories he was eating to maintain 150 pounds. I then subtracted 500 from 2,250 to figure his daily caloric needs. He could eat 1,750 calories daily and expect to lose approximately one pound a week.

Why? Because a pound of fat is equal to approximately 3,500 calories. Therefore, if you cut 500 calories a day from your diet you will lose about one pound a week (500 calories x 7 days in a week = 3,500 calories).

So, with the first method I came to 1,500 calories and with the second method I came to

1,750 calories. Does it matter? The hypothetical wrestler may lose weight faster on the 1,500 calorie plan, but if he's not in a hurry then he may find that 1,750 allows him to eat more and allows him to feel better physically and mentally while dieting.

I've seen other experts suggest taking one's body weight times 12 as a starting point instead of 10.

At any rate, these formulas just give you a rough idea of how to determine the number of calories you're currently consuming and the number of calories to consume to initiate weight loss.

I also find it interesting that protein and carbohydrates have 4 calories per gram while fat contains over twice as much at 9 calories per gram. If you wanted to know how many calories in a certain food were fat calories you could simply take the number of grams in a serving times 9. So, if a serving of a particular food contained 5 grams of fat you'd know that 45 calories were fat calories (5 grams x 9 calories = 45 calories).

So, is it better to lose weight quickly or slowly? Assuming you actually have some body fat to lose and you're not just interested in short-term water loss, then it is usually better to lose weight slowly.

Joe Klemczewski states, “Peaking early is a great thing.”[15] He's talking about peaking for a bodybuilding contest, but I think it can apply to wrestling. If you reach your maintenance weight early, you have some options. For instance, you may find you can add more calories and carbohydrates and still stay near your ideal weight. At any rate, you have time to experiment a bit to see how your body reacts.

In an article, Klemczewski states, “If you want to lose body fat with good speed, it’s not rocket science to assume you need a high enough calorie deficit, but that creates a problem. The greater the deficit, the faster and sooner your metabolism shrinks. We want to lose at a strong pace, but we don’t want the ramifications of a crashing met rate.”[16]

Pro natural bodybuilder and nutrition guru Layne Norton echoes that viewpoint by stating, “Aim to diet as slowly as possible. The severity of your calorie deficit will, to a large extent, determine how much muscle you retain/lose.”[17]

You need to ideally use slow, conservative dieting to get to or close to your competitive weight. When you are at or near your competitive weight early you have time to fine-tune your food intake as opposed to dieting hard right before a competition.

Caloric Density

Caloric density refers to the number of calories in a specific amount of food. For instance, peanut butter is high in caloric density while broccoli is not. Potato chips are high in caloric density while a plain baked potato is relatively low. Whole kernel corn is much lower in caloric density than corn bread or corn muffins. You get the idea.

Caloric density is an important concept because when you're dieting you may find it helpful to feel fuller on fewer calories. Wouldn't you like to eat a large volume of food while at the same time reducing your caloric intake?

Most fruits and vegetables are low in caloric density. Some cereals (including hot cereals like oatmeal), low-fat dairy products, and legumes like beans and peas can be good choices as well.

Many animal products (e.g. bacon), fats (e.g. butter and oils), and dry items (e.g. crackers, chips, and pretzels) are high in caloric density and need to be eliminated or used sparingly if one is trying to lose weight.

A book you might want to read that discusses the concept of caloric density is *The Ultimate Volumetrics Diet* which is designed to control hunger and enhance satiety by allowing one to eat satisfying portions without too many calories.

Satiety Index

Satiety has to do with the feeling of fullness and the reduction of hunger. One of the factors that influences satiety is the type of food you eat. The satiety index was developed by Suzanna Holt and her fellow researchers at the University of Sydney. They found that foods that contain large amounts of water, dietary fiber, and/or protein do a better job of satisfying one's hunger than foods containing large amounts of fat, sugar, and/or starch.

So, an apple is going to be a better choice than a candy bar because it contains water and fiber. Similarly, carrots would be a better choice than raisins.

The satiety index has similarities to the concept of caloric density. For instance, both concepts advocate fruits and vegetables. However, the satiety index also recognizes the satiating effect of protein more so than the concept of caloric density. A serving of red meat may be relatively high in caloric density but may also be very satiating. Therefore, a serving of red meat occasionally might be a good choice. However, a serving of fish is likely to be even more satiating.

You can find articles as well as lists of foods in regards to caloric density and the satiety index online.

Interestingly, an author named Tim Ferriss promotes a regimen called the *Slow-Carb Diet* which involves eliminating starches while eating protein, legumes, and vegetables at every meal. It seems to me that this regimen would be low in caloric density and high in satiety.

Glycemic Index

The glycemic index has to do with how quickly various carbohydrate foods are converted to glucose in one's body. For instance, some foods like potatoes and white bread can cause a

more rapid rise in blood sugar levels than table sugar. Surprising, huh?

“Your body performs best when your blood sugar is kept relatively constant. If your blood sugar drops too low, you become lethargic and/or experience increased hunger. And if it goes too high, your brain signals your pancreas to secrete more insulin. Insulin brings your blood sugar back down, but primarily by converting the excess sugar to stored fat.”[18]

You need to remember that the glycemic index ranks foods in isolation. For example, a potato may be high on the glycemic index. However, if you consume that potato along with a chicken breast and some green beans it will affect your blood sugar levels less than if you'd eaten the potato by itself. Most people don't eat foods like potatoes or bread in isolation. The presence of fiber, fat, and other factors can influence your body's glycemic response to a meal regardless of any particular food. Nonetheless, the glycemic index is another valuable concept for an athlete to keep in mind when eating and planning his nutrition program.

Two popular books that utilize the glycemic index concept are *The South Beach Diet* and *Sugar Busters*.

Glycogen and Fat Loss

Glycogen is carbohydrates stored in muscle cells and the liver and often accessed for energy during exercise. According to Richard Rigor, “Fat loss is increased whenever muscle glycogen stores are lowered.”[19] If you consume excess amounts of carbohydrates and your glycogen stores are always full then your body has no reason to tap into its fat stores.

Chris Aceto states, “All carbohydrates will be stored as body fat when muscles are already full of glycogen.”[20]

In another article Aceto states a similar message, “When glycogen levels (the amount of stored carbohydrates located in muscles) fall, fat burn rises precipitously.”[21]

This is another reason to be careful about the amount of carbohydrates in your diet.

As a wrestler who is working out intensely and competing, you are depleting some glycogen on a daily basis. So, you probably don't need to be too concerned with this concept. Nonetheless, it's interesting to know that glycogen depletion tends to increase the use of fatty acids for fuel.

Ketones, Ketosis, and Low-Carb Diets

If cutting carbohydrates out of one's diet works so well, then why not just eliminate them altogether?

According to Joe Klemczewski, “Carbs are not your enemy; as a matter of fact, they are both what stimulate your metabolism the most and spare muscle the best. The goal is to use the

right amount to accomplish both. We're back to the same conundrum. We need to limit carbs to get lean enough soon enough, but we need carbs to spare muscle and keep our metabolism high."[22]

You may have heard of low-carb diets or even ketogenic diets. How do these diets work?

A ketogenic diet is very low in carbohydrates which causes blood glucose levels to fall and liver glycogen stores to be depleted. The body responds by converting fatty acids in the liver to ketones to be used as an energy source.

According to Layne Norton, "Ketogenic dieting refers to reducing carbohydrate intake to practically nothing, while simultaneously raising fat and protein intake. With little glucose for the brain to utilize for energy, the body will begin producing ketones. Ketones are by-products of fat oxidation and the brain can use ketones for energy. This does indeed have a potent fat burning effect, as insulin levels will be severely reduced due to lack of carbohydrate intake. Low insulin levels correlate with high rates of fat oxidation."[23]

A typical low-carb diet may not cause a person to enter ketosis. Nonetheless, some low-carb diets like *The Atkins Diet* may cause ketosis. Some people, including athletes, claim they feel and perform well on a low-carb diet. Some others claim low-carb diets are detrimental for athletes.

Physical conditioning specialist and author of *The Fat Loss Bible* Anthony Colpo states, "Activities like boxing, cycling, mixed martial arts, running and even high volume weight training are dependent on a steady supply of carbohydrate to replace the muscle glycogen that would otherwise be exhausted during these glucose-dependent activities. As research has repeatedly shown, low-carbohydrate diets are simply incapable of maintaining optimal glycogen levels and vastly inferior to high-carb diets when it comes to improving performance."[24]

Lyle McDonald believes it may depend on individual differences. Be careful and do some research before trying a low-carb diet or any other diet.

Mark Sisson from the website Mark's Daily Apple states in regard to ketosis, "For those looking to lose fat, this becomes an extremely effective tool. On the other hand, after spending a few days or weeks in a predominantly ketosis mode, it may behoove you to do an occasional higher carb day (maybe 250-300 grams) to simply readjust insulin sensitivity. This is particularly appropriate if you have achieved an ideal body composition (lean body mass and body fat) and don't need to lose more fat."[25]

Personally, I never worried about carbohydrates while cutting weight during high school. I just counted calories and didn't concern myself too much with macronutrient percentages. But, that's me. Someone else may find that they lose fat faster and feel less hungry while on a low-carb diet.

Hormones

Many hormones influence your body composition. They influence how much muscle you build, how much fat you store, and how that fat is stored. Some hormones that influence body composition include testosterone, growth hormone, insulin, glucagon, cortisol, leptin, ghrelin, thyroid hormones, CCK, PYY, adiponectin, AMPK, and others.

I want to discuss mainly insulin, leptin, and ghrelin.

According to Dr. Michael Eades, “Insulin is the body’s storage hormone: it puts fat in the fat cells, protein into muscle cells and glucose into it’s storage form, glycogen. Insulin, along with its counter-regulatory hormone glucagon (the Yin and Yang of metabolism), are involved in nutrient partitioning – the process of stashing nutrients away in different parts of the body and/or harvesting them for the body to use as energy.”[26]

Insulin levels have an impact on enzymes that control fat storage. If your insulin levels are constantly elevated it sends a message telling your body it has been fed and as a result fat burning is stopped. Elevated insulin can also clear out most of your blood glucose causing your energy level and to crash and your appetite to soar.

Of course, low-carb diet advocates believe that excess intake of carbohydrates leads to elevated insulin which ultimately leads to fat accumulation.

Carbohydrates and insulin are not bad. In fact, insulin helps bodybuilders to pack on muscle by allowing glucose and amino acids to enter muscle cells.

If you want to lose fat, then you may need to limit carbohydrates to some extent. In addition, eating carbohydrate foods with a lower glycemic index may be a good idea as well.

Leptin is a protein-based hormone released primarily from fat cells. Generally, the more bodyfat you have the more leptin you tend to have. In addition, the amount you eat can influence leptin levels as well.

According to Lyle McDonald, “Go on a diet and leptin levels will drop by nearly 50% within a week.”[27]

But, why does this matter?

According to nutritionist Sean Croxton “Leptin is in direct communication with a gland in your brain called the hypothalamus. When your fat stores are sufficient, your hypothalamus gets a phone call from leptin saying all is well and that making it through a food shortage won’t be a problem. As a result, the hypothalamus keeps your metabolism humming along and your appetite at bay since there is no need to store any additional fat.”[28]

You might think of leptin as an appetite suppressant.

Losing fat when you're already lean can be even harder.

Lyle McDonald states “Getting lean beyond a certain point, in the range of 10-12% bodyfat for men and maybe 18-20% bodyfat for women, causes levels of testosterone, growth hormone, thyroid and the other ’good’ hormones to crash. Levels of the ’bad’ hormones such as cortisol skyrocket. Appetite soars through the roof. Muscle loss accelerates and getting rid of that last little bit of fat is a total pain as your body fights to keep you alive.”[29]

Ghrelin is released mainly from the stomach and stimulates hunger. So, when you diet leptin goes down and ghrelin goes up. You get hungry. Your metabolism may slow down. Your body likes homeostasis (i.e. keeping things the same) and will try to keep your weight at a certain set point. At least that's the theory.

What can be done to control these hormones?

Some diet gurus recommend having periodic refeeds while dieting. Perhaps you may eat significantly more calories (especially carbs) for one meal a week or even an entire day to hopefully bump up your leptin levels and convince your body that everything is fine and you're not starving.

According to personal trainer Nate Miyaki, “Overfeeding, or a caloric surplus, has the exact opposite effects of chronic caloric restriction. A day of re-feeding can offset the metabolic downshift that occurs with chronic dieting. It can re-set leptin, testosterone, growth hormone, and thyroid to normal, pre-diet levels. It can re-sensitize the body to the fat loss process and help you break through a plateau.”[30]

It is best to emphasize carbohydrates (not fat) during refeeds. Also, try to avoid high fructose corn syrup and alcohol. Lyle McDonald has a lot of good advice about hormones and refeeds on his Body Recomposition website.

Some athletes like carb back-loading. This simply involves eating most of your carbohydrates during the evening. A study that is often cited involved Israeli police officers. Look it up. The test group that consumed the majority of their carbohydrates at night seemed to experience some hormonal advantages leading to greater appetite control and greater weight loss.

To learn more about carb back-loading you may want to check out *The Carb Nite Solution* or *Carb Back-Loading*, both by John Kiefer.

Intermittent fasting has become popular as well. Intermittent fasting (IF) involves abstaining from food for a set amount of time. That may involve not eating for 24 hours once or twice a week or simply skipping breakfast every morning. You may, for example, decide to eat only between 12:00 pm and 8:00 pm each day. This would be your eight hour “window” during which to eat each day. There are various ways one might practice intermittent fasting.

Proponents of intermittent fasting claim that IF may promote human growth hormone (HGH) production which increases fat burning. Fasting also increases catecholamines which help liberate fatty acids from fat cells so they can be burned as energy.

However, IF is probably not ideal for athletes with a heavy training load. Nonetheless, it's nice to know that missing an occasional meal isn't necessarily a bad thing.

I should note that some experts, such as Anthony Colpo, think IF is an overrated fad.

If you want to learn more about intermittent fasting you may want to check out *Eat Stop Eat* by Brad Pilon, *The Warrior Diet* by Ori Hofmekler, *The Renegade Diet* by Jason Ferruggia, and *Intermittent Feast* by Nate Miyaki. You can also check out the LeanGains website created by Martin Berkhan.

Hormones, carb back-loading , and IF can be confusing. If nothing else, you may want to remember that your body has two phases: an absorptive phase and a post-absorptive phase. Experts used to recommend eating six small meals a day to continuously stimulate your metabolism. But, that may actually be a bad idea.

According to Johnny of The Simple Saloon, “The absorptive state is a *fed state*, when there’s food in your stomach and small intestine. During the fed state, the body draws fuel from mostly ingested calories. Excess is stored as glycogen, glucose, and fat.”

He adds, “The post-absorptive state is a *fasted state*, when there’s no food in your stomach and small intestine. During the fasted state, the body catalyzes and mobilizes stored glucose and fat for fuel.”[31]

In addition, personal trainer Jillian Michaels states, “By grazing around the clock, you’re preventing your body from burning fat. When you’re constantly eating, you’re consistently releasing insulin, which puts your body into its 'absorptive phase.' Basically what this means is that the insulin in your body is storing sugar — and not letting other enzymes in your body release sugar to break down fat. The goal is for your body to be in 'postabsorptive phase,' where it uses your energy stores for sustenance, and burns more fat.”[32]

It's nice to know that you can miss a meal and it won't necessarily be detrimental. It's also nice to know that if eating three meals a day is comfortable for you it may actually be a good thing for fat burning.

Personal Anecdote

Personally, I was never was too concerned with macronutrients when I was cutting weight in high school. I'm not sure I'd ever even heard the word. I was mainly concerned with calories. I'd never heard of leptin and all I knew about insulin was that diabetics needed shots because their bodies couldn't produce it. I'd certainly never heard of ketogenic diets, carb back-loading, or intermittent fasting.

I would guess my diet was about 80% carbohydrates when I was dieting.

I just counted calories to lose weight. I ate a lot of apples, oatmeal, dry cereal, whole wheat bread, rice cakes, baked potatoes, carrots, and green beans. I occasionally ate eggs, canned

tuna and other fish, diary products like milk, cheese and yogurt, raisins, broccoli, and canned mushrooms. I did use butter and peanut butter on rare occasions. I used jelly because it had about half as many calories per tablespoon as butter or peanut butter.

So, many of the foods I ate were high-carb, low-fat, low in caloric density, and high on the satiety index. I didn't necessarily set out to do things that way. But, I have always liked carbs more than protein foods. And, I didn't like being hungry. I was able to eat a lot of apples and green beans without taking in a lot of calories. I would have chosen three or four apples over a hamburger patty any day. My favorite protein sources were fish and poached eggs. We didn't have bags of boneless skinless chicken breasts during my high school years. I wish we would have.

Sometimes I would consume diet soda or other diet products. I usually had Diet Coke or Diet Pepsi but I once tried a product called Canfield's Diet Chocolate Fudge Soda. I sometimes drank something called Alba 77 Shake Mix which was sweetened with NutraSweet at the time and had only 70 calories per serving. It was like a low-calorie version of a milkshake. I usually had the chocolate flavor. Occasionally, I also would eat Nutrilite Meal Replacement Bars made by the Amway Company. I guess I wanted something sweet but low in calories at times.

I was eating about 1,200 calories a day until I reached 112 pounds (my weight class) and then added some calories slowly back into my diet over time. I didn't have any formula back then for determining maintenance calories so I was basically just guessing.

If I had eaten more protein and fewer carbs I may have retained more muscle. I guess I'll never know for sure.

I had a food scale and my calorie count books which came in handy. I used measuring cups and measuring spoons often. I kept track of every calorie at least during the first half of the season. During the latter half of the season, I was able to “wing it” a bit more and not worry quite so much about every calorie. Nonetheless, I still kept track every day of what I was eating.

So, the basic low-calorie, high-carbohydrate, low-fat diet worked for me. I made a caloric deficit so I lost weight. I may have lost more muscle and strength than I needed to but I guess I'll never know.

You may be different. You may feel better and lose fat easier on a low-carb diet. And, some of you don't care about losing fat at all. You may just want to lose some water weight quickly which I will cover in the next chapter.

Chapter 4: Rapid Weight Loss

Crash Diets and the Protein-Sparing Modified Fast

You may have heard the term “crash diet” before. Crash diets are also referred to as fad diets. These diets are a nutritional tactic used to lose weight rapidly and can involve severe deprivation. Crash diets often involve focusing on one food in particular. Anyone want to try the cabbage soup diet or the grapefruit diet? Crash diets are usually intended to be used on a short-term basis because they can be associated with health risks.

Wrestlers are often interested quick weight loss. I used to follow a crash diet at times during my high school years. It was called the eat-nothing-for-a-week-and-feel-terrible diet. Yes, I basically starved myself at times because I needed to lose weight quickly and didn't have a clue about how to do it. I put my health at risk through starvation and dehydration tactics.

Is it possible to lose weight quickly and safely? Perhaps.

I recently learned about an approach to weight loss called a protein-sparing modified fast (PSMF). This is a type of very low calorie diet that usually involves the consumption of lean protein, low-carbohydrate vegetables, and small amounts of carbohydrates and fat. Some diets that follow this type of approach (in some cases only loosely) include *The Dukan Diet*, *The Overnight Diet*, *The Radical Diet*, and *The Velocity Diet*. *The Rapid Fat Loss Handbook* by Lyle McDonald also discusses a PSMF type of diet.

The protein-sparing modified fast was introduced in the late 1970s by Dr. George Blackburn at the New England Deaconess Hospital in Boston. Around the same time, a similar program was being developed in Cleveland using a protein drink.

Optifast and Medifast were companies associated with the PSMF and programs were conducted through hospitals or clinics.

Interestingly, Dr. Eades (coauthor of *Protein Power*) had a book published in 1989 entitled *Thin So Fast* that offered people a method for conducting a PSMF without physician supervision. He instructed readers on how to make their own protein shakes and how to conduct a PSMF safely.

Dr Eades states, “In the late 1980s, there were almost no commercially available protein supplements. It’s difficult to imagine now when they are everywhere you look, but then protein powders were not common. There were a couple, but they were hard to find, usually sold only at health food stores (which, at that time, were also thin on the ground), tasted wretched, and were used mainly for supplementing other foods, not as a meal replacements. People then had no ready access to meal replacement protein powders – Medifast, Optifast and a handful of others were distributed only through physicians. I realized it was kind of a

racket, so I decided to write a book explaining how a PSMF could be safely done at home."[33]

The diet involved drinking four shakes daily as well as consuming one whole-food meal per day of meat and green vegetables. He preferred this approach over the consumption of five daily shakes and no solid food.

His shake recipe:

- Powdered skim milk (enough to make one quart)
- 4 tablespoons of protein powder with no added sugar
- 1 teaspoon of granulated fructose
- 1 teaspoon of salt substitute containing potassium

The above ingredients could be mixed with diet pop, coffee, water, or other non-caloric fluids and divided into four shakes.

Nowadays, you can simply find many inexpensive high quality low-carbohydrate protein powders and need not use skim milk.

The Dukan Diet, designed by French doctor Pierre Dukan, was published in 2000 although he had been promoting his diet and treating patients with it for many years.

The diet is divided into four phases: attack, cruise, consolidation, and stabilization.

The attack phase consists of eating unlimited quantities of lean meat, eggs, and nonfat dairy products. In addition, one is encouraged to drink one and half quarts of water a day. However, a person may drink tea, herbal tea, coffee, and diet drinks such as diet soda to help meet their water quota. The only carbohydrate allowed during the attack phase is one and a half tablespoons of oat bran. The oat bran can be combined with an egg and some nonfat Greek yogurt to make a pancake. The oat bran helps people feel full longer during the attack phase. You are allowed to use artificial sweeteners and spices like vanilla and cinnamon as well. On average the attack phase lasts five days.

The cruise phase adds certain vegetables.

In the consolidation phase one may add fruit , bread, cheese, and starchy foods in specific quantities back into the diet. In addition, one or two celebratory meals per week are allowed.

Stabilization involves continuing to have one pure protein day per week and continuing to consume oat bran daily. You can essentially eat what you want six days out of seven although the consolidation phase foods are an ideal base to use as a guide for your food choices during those 6 days.

The Rapid Fat Loss Handbook by Lyle McDonald also discusses a PSMF type of diet.

The problem with complete fasting (starvation) is that your body will obtain amino acids by breaking down muscle and organ tissue. That is not a good thing. So, even though total

fasting may produce fat loss it will also bring about muscle loss.

Is there a way around that problem? That's where the protein-sparing modified fast comes in.

If you consume enough protein your body can convert some of it to glucose to keep your brain happy and the rest can be used to conserve lean body mass. If you remove most of the carbohydrates and fats from your diet and consume only lean protein your body will tap into your fat stores for energy and you'll lose weight.

In Lyle McDonald's version of the PSMF, you would eat a certain amount of protein determined by bodyfat percentage and activity level as opposed to simply eating as much protein as you like and he doesn't really encourage drinking protein shakes like in *Thin So Fast*. You can consume essentially an unlimited amount of vegetables right from the start of the diet. He also encourages using fish oil or flaxseed oil daily as a source of essential fatty acids and a basic multivitamin/mineral supplement and a few other key supplements. Like Dr. Dukan, he encourages drinking plenty of water while doing a PSMF.

You don't want to stay on PSMF for long periods of time. You need to take breaks at times and move to a maintenance diet at some point.

Part of the reason you see dramatic weight loss with a PSMF is because of water loss.

Glucose is stored in your muscles in the form of glycogen. Each gram of glycogen is stored with about three grams of water. So, guess what happens if you deplete your glycogen stores through carbohydrate and calorie restriction? You can lose five to ten pounds fairly quickly. But, you may also feel like crap. So, understanding how to manipulate bodyweight intelligently and knowing what to expect is important.

The Rapid Fat Loss Handbook really explains the PSMF well. **You need to be careful if you're going to attempt a PSMF**. By the way, The Dukan Diet was voted the worst diet of 2011 by the British Dietetic Association. So, some experts are leery of diets like these. Ketosis is the aim of diets like these and you may need supplements and plenty of water because of dehydration and electrolyte (sodium, potassium, magnesium, calcium) concerns. Ketosis is a state in which the body can use ketones for energy instead of carbohydrates. While in ketosis, most people lose their appetite which is another benefit of a PSMF.

The attraction of these diets is getting some fairly dramatic quick weight loss which helps some people stay motivated. In addition, some groups of athletes are only looking for quick weight loss in the first place and don't expect to maintain this sort of diet as a lifestyle. A PSMF may help preserve lean body mass and suppress appetite while helping one lose body fat. But, as I mentioned earlier, you need to be careful.

I believe I should note that there is a condition called Rabbit Starvation Syndrome that can develop and be potentially fatal when one consumes a diet of consisting almost entirely of lean protein. So, you don't want to eat a diet that is excessively high in protein and devoid of fat and carbohydrate. Rabbit Starvation Syndrome is unlikely to occur, but I thought I should at least mention it.

Losing Water Weight

Bodybuilders, powerlifters, and mixed martial artists know a lot about losing water weight. Bodybuilders need to look ripped and defined while other athletes simply need to meet a certain bodyweight guideline in order to compete in a particular weight class. For instance, in mixed martial arts contests a male featherweight fighter may need to weigh between 135.1 and 145 pounds in order to compete in that weight class. So, if he normally weighs around 160 pounds he is going to need to cut at least 15 pounds before the weigh-in time in order to compete.

The advantage that these athletes have over a high school wrestler is that they don't usually need to make weight on a weekly basis. They may only need to make weight a few times a year. And, a bodybuilder may only have to peak for a couple of shows a year. Nonetheless, it may be interesting to discuss some of the methods these athletes use to cut weight.

A combat athlete (wrestler, fighter) is trying to meet a bodyweight requirement while a bodybuilder is usually attempting to look a certain way (defined, ripped) and isn't concerned about weight as such. They do use some similar methods even though their goals are different.

Interestingly, some of these athletes may begin *water loading* a few days before weigh-in. This may seem odd because most people associate cutting weight with limiting water consumption. However, the strategic manipulation of water intake from high amounts to low amounts can have an interesting hormonal effect. Drinking more water can lower aldosterone levels causing your body to retain less water (i.e. you may excrete more urine than usual). If you can influence aldosterone levels then you can affect how much water your body retains. Aldosterone levels can also be influenced by sodium (e.g. how much salt/sodium is in your diet at any given time). You need to use a specific protocol to manipulate aldosterone successfully.

Some athletes have used potassium-sparing diuretics to lose water weight such as dandelion root and caffeine.

Some have used a gentle, natural laxative (e.g. senna) the night before a weigh-in.

I've seen frequent but brief hot baths recommended as a good method for sweating out water the night before a weigh-in. The suggestion is to alternate between 10-15 minute sessions of total submersion (except for your mouth and nose) in a bathtub of very hot water with 5 minute breaks in a cooler (e.g. room temperature) location.

I am deliberately not going into detail regarding these methods. I don't advise any of these methods. A wrestler usually needs to make weight once or twice *per week* as opposed to the occasional contest . These methods can be dangerous especially without the guidance of a professional. I mention these methods for informational purposes only.

Dehydration can be dangerous.

Drastically limiting any one particular macronutrient from one's diet can also be dangerous.

Water loading can be dangerous as well. Water intoxication (hyponatremia) can cause your body's salt level to become too low. This condition is most likely to happen to athletes like marathon participants who become dehydrated and lose electrolytes in their sweat and then drink too much water to try to replace what they've lost.

Diuretics and laxatives of any type have the potential to be dangerous. Diuretics have been implicated in the deaths of fighters and bodybuilders.

I don't recommend rapid weight loss. Of course, I was never the kind of wrestler who could sweat off five to ten pounds during a practice or a workout. Perhaps some of you can. Be careful. Consider the consequences to your health and your performance.

Extreme rapid weight loss can lead to dehydration, hyperthermia, arrhythmia, and cardiac arrest.

One of the collegiate wrestlers who died in 1997 had a core temperature, after working out in a sauna suit, of 108 degrees at his autopsy.

Diuretics may have played a role in the death of MMA fighter Leandro Souza while trying to cut from 159 pounds to 126 in less than a week.

According to the Iowa High School Athletic Association, “Dehydration and excessively restricted food intake result in decreased strength, muscular endurance, stamina, and concentration. Dehydration is the most detrimental method of losing weight and causes the most rapid decrease in strength, endurance, and mental alertness. Research indicates that the loss of as little as 2% of one's body weight through dehydration can cause significant performance loss!”

Cutting weight is a double-edged sword. The argument for cutting weight is that by temporarily dehydrating your body you can make your required weight, then rehydrate and potentially have a size advantage at match-time. However, the benefits of the size advantage can be offset by the stress that dehydration causes your body, even for a brief period.

Former University of Iowa wrestler Bruce Kinseth could cut a lot of water weight. Other wrestlers, like the legendary John Smith, prefer using year-round discipline to always be near their competitive weight. In fact, some wrestlers like John and Ben Peterson have become Olympic medalists without cutting weight.

Restrictive diets and dehydration can be a hindrance to your performance and a very real threat to your health. Taken to the extreme, rapid weight loss through dehydration can be fatal.

An appropriate wrestling weight is one that can be maintained by eating a healthy, balanced diet.

Afterword

I wish that in high school I would've had the nutritional and weight loss knowledge I do now. I could have saved myself a lot of misery. Cutting weight affected me physically and emotionally. I believe it has affected my life even long after my wrestling career.

My digestive system never seemed to work quite right after high school. I struggled with digestive complaints throughout college and continue to now in my adult life. I was diagnosed with an eating disorder (anorexia nervosa) as a young adult after graduating from college. It may just be a coincidence that I cut weight during high school wrestling and developed digestive and emotional problems as an adult. I guess I'll never know for sure. I know I would trade any medals and accolades I collected during my wrestling career to be healthy and happy now as an adult.

I'm not trying to scare you or be melodramatic. As I stated, my physical and emotional problems may have nothing to do with cutting weight as a teenager. However, I do hope you will use caution and intelligence if you do decide to cut weight or follow some weight loss regimen. Dehydration is especially dangerous. Remember the three college wrestlers who lost their lives? You don't want to become a casualty for the chance of potential glory in a sport. It's not worth it.

Nonetheless, I realize that sometimes wrestlers will cut weight for different reasons and probably always will. So, be careful. Be smart about it.

Weight loss can seem like such a complicated mess. There are so many different diets, theories, and gimmicks out there that one could consider. And, you need to consider not just calories but hormones and other factors. So, weight loss can seem like a daunting and frustrating task.

Marion Nestle, a professor of nutrition, explains that you cannot see, taste, or smell calories. Most people know that calories are a measure of energy and yet don't have the best understanding of how calories affect weight. People do a miserable job of estimating calories. It's difficult to estimate calories when a nutrition label isn't readily available and when eating in restaurants where portion sizes are large. How many calories are in that casserole your mom made? How many calories are in that cookie you bought at the mall or that gigantic hamburger from the fast food outlet?

Reading nutrition labels can be a shock for some people. They start to realize how many calories can be packed into some foods. Marion Nestle recommends eating healthy foods in moderation including fruits and vegetables, lean meats, and whole grains. You need to limit junk food. She doesn't believe in avoiding any particular nutrient like carbohydrates, for example. This is some basic advice you have probably heard before.

Nate Miyaki, a certified specialist in sports nutrition and author of *Intermittent Feast*, seems to mirror some of the same beliefs as Nestle. He also believes in eating real, natural foods. He states, “The best fat burner is to stop eating crap.”[34] He also doesn't believe that there is one

right way or system that fits everyone, everywhere. It's important to find a structure that allows you to stick consistently with your plan. For instance, you don't have to eat six small meals a day or totally avoid carbohydrates.

Dietitian Kim Tiraplle states, “While making weight may be a wrestler's most pressing concern as it relates to nutrition, they should also be guided on implementing a more comprehensive weight management plan. This includes an off-season strategy for any major weight shifts and a preseason schedule for perfecting body composition.”

She adds, “The off-season is the best time for making any large-scale changes to an athlete's weight. Every team has wrestlers who want to move up or down a weight class, but waiting until preseason practices to do so can be too late.”[35]

Find what works for you.

So, we've come to the end of our journey together. We covered basic nutrition, sports nutrition, calories, hormones, rapid weight loss, and other topics. I don't believe in cutting weight but I hope you have the knowledge now to do it safely if you choose to do so. Thanks for taking this journey with me. Take care.

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