

**TAKING IT TO THE MAT:  
THE WRESTLER'S GUIDE  
TO OPTIMAL  
PERFORMANCE**

Prepared for the NCAA  
by

**The Center for Nutrition in Sport  
*and Human Performance***

University of Massachusetts  
Amherst, MA

**The Center for Nutrition in Sport and Human Performance**

provides vision, education, and research in establishing sound nutritional and fitness practices associated with participation in athletic or related exercise programs.

For more information:

Stella L. Volpe, Ph.D., R.D., Director  
Robin Levine, M.A., R.D., C.D.E., Associate Director  
Priscilla M. Clarkson, Ph.D., Advisor to the Center  
Chenoweth Bldg.  
University of Massachusetts  
Amherst, MA 01003  
Phone: (413) 545-1076  
E-mail: [volpe@nutrition.umass.edu](mailto:volpe@nutrition.umass.edu)

Bryan W. Smith, M.D., of the University of North Carolina,  
contributed examples of determining body weight

**TAKING IT TO THE MAT:**  
**THE WRESTLER’S GUIDE TO OPTIMAL PERFORMANCE**

	Page
I. INTRODUCTION	4
II. ENDING DANGEROUS WEIGHT-CUTTING: THE NEW RULES	4
III. MAKING WEIGHT	5
A. WEIGHING THE OPTIONS: Determining Your Weight Class	5
B. A DELICATE BALANCE: Cutting and Maintaining Weight	7
Avoiding Unhealthy Weight-Cutting Practices	8
IV. ENERGIZING YOUR PERFORMANCE	9
A. FUELING UP: Using the Principles of Sports Nutrition	9
B. YE OLDE WATERING HOLE: Achieving Adequate Hydration	11
C. FACT OR FICTION: Being Smart about Vitamins, Minerals, and Other Supplements	12
D. BEFORE THE WHISTLE BLOWS: Preparing for Training	13
Eating For Competition	15
E. ROAD WARRIORS: Eating on the Road	16
V. QUICK TIPS	17
A. HIGH PERFORMANCE MEALS AND SNACKS	17
B. HIGH PERFORMANCE TIPS	18

## I. INTRODUCTION

Wrestling is a great sport with a long history dating back to prehistoric times. Cave drawings found in France depict wrestlers in various holds and leverage positions. Wrestling became part of the Olympic Games in Greece in about 708 B.C.

Wrestling is one of the few sports where men of all sizes can compete. The sport requires strength, concentration, coordination, skill, agility, and muscular endurance. Wrestlers often seek to improve their performance by using the many supplements available on the market or working-out in hot rooms. However, the scientifically proven way to achieve the most out of your practice is to work-out in a moderate to cool room. The sure way to energize your performance and competition is with the right eating plan over the entire season!

This booklet provides information on how to determine the appropriate body weight for you, why heat and dehydration work against you, and tips on how to achieve the optimal diet to unleash a championship performance!

---

## II. ENDING DANGEROUS WEIGHT-CUTTING: THE NEW RULES

In the fall of 1997, three collegiate wrestlers died in their quest to make weight for competition. The NCAA Committee on Competitive Safeguard and Medical Aspects of Sport, along with the NCAA Wrestling Rules Committee, worked together to develop new rules to ensure the health and safety of athletes. These rules will be monitored by the NCAA, so you should be familiar with them:

Artificial weight loss practices such as the use of laxatives, emetics, steam rooms, and hot practice rooms are banned.
Weight classes will be established at the beginning of the season by a physician or athletic trainer. Athletes can modify their weight over 8 weeks of the season but cannot lose more than 1.5% of body weight per week. Also, athletes cannot fall below their established minimum body weight.
For dual meets, weigh-ins will be 1 hour before the start of the first match. For tournaments, weigh-ins will be 2 hours before the start of the first match on the first day and 1 hour before the first match on subsequent days.
All wrestling coaches must be required to be certified annually in cardio-pulmonary resuscitation and first aid.
The new weight classes are: 125, 133, 141, 149, 157, 165, 174, 184, 197, and 285 pounds.



### III. MAKING WEIGHT

#### A. WEIGHING THE OPTIONS: Determining Your Weight Class

Competitive equity in wrestling requires that similar sized individuals compete against one another. Many wrestlers feel that they need to lose that extra body fat to cut down to a lower body weight and have used unhealthy and potentially dangerous weight loss methods. The following procedures were developed to prevent risk to health. These procedures are based on measurement of your body composition so that if you want to lose weight, it will be fat weight - not water and not muscle (which are both important for optimal performance).

Your body is composed of fat tissue as well as lean tissue which includes muscle, bone, and water. The best way to lose weight and not impair performance is to lose fat tissue and maintain lean tissue. The American College of Sports Medicine and The American Academy of Pediatrics have set 5% as the minimum percent body fat for males to insure good health. Having less than 5% body fat can lead to serious health consequences and impaired performance.

Your body fat will be assessed at the start of the season using either skinfold measures or hydrostatic weighing. A skinfold is the layer of fat over your muscles. Skinfold measurements will be taken from 3 sites on your body, and the measures will be entered into an equation that will predict your percent body fat. Hydrostatic weighing is a technique where you are actually weighed under water. The principle behind this measurement is that different materials (like fat and muscle) will displace water differently. Using hydrostatic weighing, an estimate of body fat can be obtained. Hydrostatic weighing is more accurate than skinfold measures.

The following methods were put in place to establish a weight class that you can comfortably maintain over an entire season. This method is based on determining your minimal safe and healthy body weight at a percent body fat no lower than 5%. **However, it is important for you to note that there is no scientific evidence that you will perform any better at 5% body fat than at 8% or 10% body fat.**

During the first week in October, you will have your body weight and body composition determined. First you must provide a urine sample that will be tested for specific gravity. This is a measure of how concentrated your urine is. A very concentrated urine indicates dehydration. If your urine sample indicates you are dehydrated, you will have to drink fluids until your urine indicates that you are adequately hydrated. After you are properly hydrated, as measured by another urine sample, you will be weighed.

Next, you will have your percent body fat and fat free weight (lean body weight) determined. Your minimal body weight will be established using the following equation:

$$\text{Minimum weight} = \text{Fat-free weight} \div 0.95$$

You will be allowed to lose no more than 1.5% of your original hydrated body weight per week for the next 8 weeks. You cannot go below your established minimum weight.

**Here are a few examples:**

**1) Wrestler #1**

Using the hydrostatic weighing technique, Wrestler #1 was determined to have 12% body fat. If he weighs 168 lbs, then the amount of fat he has is 20 lbs. By subtracting 20 lbs of fat from his total body weight (168 lbs), he is determined to have 148 lbs of lean tissue (fat-free weight).

His minimal body weight would be determined by taking the weight of his lean tissue and dividing by 0.95 (because the minimum percent body fat is 5%)..

Percent body fat = 12%

Fat weight =  $0.12 \times 168 \text{ lbs} = 20 \text{ lbs}$

Lean tissue weight =  $168 \text{ lbs} - 20 \text{ lbs} = 148 \text{ lbs}$

**Minimum weight =  $148 \text{ lbs} \div 0.95 = 156 \text{ lbs}$**

Now, Wrestler #1 has 8 weeks to lose weight but he cannot lose more than 1.5% of his original weight (168 lbs) per week. This equals 2.5 lbs per week but he cannot lose weight below 156 lbs.

In two months, he returns to have his weight class established. His urine will be tested once again to see if he is hydrated, and if so, he can weigh-in. His body weight is now 156 lbs and his weight class is set at 157 lbs for the entire season.

**2) Wrestler #2**

Wrestler #2 has a hydrated weight of 168 lbs and his body fat is 6%.

Fat weight =  $0.06 \times 168 \text{ lbs} = 10 \text{ lbs}$

Lean tissue weight =  $168 \text{ lbs} - 10 \text{ lbs} = 158 \text{ lbs}$

**Minimum weight =  $158 \text{ lbs} \div 0.95 = 166 \text{ lbs}$**

Therefore, he would already be at his lowest wrestling weight class and could not drop a weight class. He would still have his hydration level measured and be weighed-in 8 weeks later.

**3) Wrestler #3**

Wrestler #3 weighs 225 lbs and his body fat was determined to be 18%.

Fat weight =  $0.18 \times 225 \text{ lbs} = 40.5 \text{ lbs}$

Lean tissue weight =  $225 \text{ lbs} - 40.5 \text{ lbs} = 184.5 \text{ lbs}$

**Minimum weight =  $184.5 \text{ lbs} \div 0.95 = 194 \text{ lbs}$**

Over 8 weeks he cannot lose more than 1.5% of his hydrated body weight ( $0.15 \times 225 \text{ lbs}$ ) which is 3.4 lbs per week. This amounts to 27 lbs in 8 weeks. 225 lbs minus 27 lbs is equal to 198 lbs. Therefore he must compete at the 285 lb weight class.

## B. A DELICATE BALANCE: Cutting and Maintaining Weight

The amount of calories each person needs is quite variable and based on a person's body weight and energy expenditure. In general, you should not go below 1600 calories per day. Going below 1600 calories per day will not provide you with the appropriate amount of nutrients your body needs and will lead to loss of lean body mass (LBM) or muscle mass. You will also feel weak and not be able to perform at your best, both in competition as well as scholastically. Remember, 1600 calories is the **absolute minimum** amount of calories your body needs; it is not the calorie intake you should strive for.

Any attempt at losing fat weight should start well before the start of the wrestling season. A weight loss of no more than 2 pounds per week will ensure that you will not lose body water and LBM, which is so critical for your performance and maintenance of your metabolic rate. In addition, by losing weight before the season's start, you will not deprive yourself of nutrients, be better able to keep the weight off that you lost, and perform better in practice and competition, as well as scholastically.

Here is a formula you can use to estimate your caloric needs:

*Take your body weight and multiply it by 10:*

Example

If you weigh 125 lbs

$$125 \text{ lbs.} \times 10 = 1250$$

*Multiply the number you get by 1.7:*

$1250 \times 1.7 = 2125$  calories per day you will need to maintain a body weight of 125 pounds (Remember, this is an estimate, and you may need more than 2125 calories to maintain your body weight at 125 pounds.)

*If you need to decrease your body weight:*

Decrease your caloric intake from 250 to 500 calories per day. You will be able to safely lose 1 to 2 pounds per week, be able to maintain your body weight, and maintain optimal performance.



## Avoiding Unhealthy Weight-Cutting Practices

In the past, there have been unhealthy practices that wrestlers used to lose body weight. Most of these methods included rapid weight loss. These unhealthy weight-cutting practices often result in impaired performance and health, and **can even lead to death**. Some of these practices are now banned by the NCAA, and others should be discouraged by all those involved in the sport of wrestling.

<p><i>Yo-Yo Dieting:</i></p> <p>By having cycles of fasting then eating (typically binge-eating), your body will store more body fat, and it will be more difficult to lose body weight. Additionally, it places a great stress on your body every time you starve it then re-feed it with great quantities of food.</p>	<p><i>Dehydration:</i></p> <p>Dehydration is a result of not taking in enough fluids. Wrestlers who cut weight improperly are typically dehydrated.</p> <p>Dehydration has a number of negative effects, which include: decreased muscular strength and endurance, decreased blood flow in your body, and a decreased ability to regulate your body temperature.</p>
<p><i>Starvation/Fasting:</i></p> <p>When you fast, or do not eat at all, your body uses your muscle mass first, <b>not</b> your fat mass, which leads to impaired performance. In addition, with each fast, your body actually gets better at storing fat in order to prepare itself for your next fast. So, starvation not only leads to muscle loss, impaired performance, and increase fat mass deposition, but also leads to a lower metabolic rate, which makes it more difficult to lose body weight with each cycle.</p>	<p><i>Dehydration is often a result of:</i></p> <p>Spitting</p> <p>Diuretics ("water pills") - which can impair the proper functioning of your heart and kidneys</p> <p>Sitting and/or exercising in a steam room or sauna/exercising in plastic suits - can cause very rapid dehydration, leading to heat stroke, electrolyte imbalances, heart failure, and even death</p>
<p><i>Diet Pills/Laxatives:</i></p> <p>Use of diet pills, which can contain products that increase your heart rate and blood pressure to dangerous levels, are not safe and should be avoided. Furthermore, laxatives have a dehydrating effect and are not safe and should also be avoided.</p>	

## IV. ENERGIZING YOUR PERFORMANCE

### A. FUELING UP: Using the Principles of Sport Nutrition

Based on the amount of calories that you require (see page 7), you now need to determine the amount of calories you should get from carbohydrates, protein, and fat. All three of these "macronutrients" are important for your performance. Too many wrestlers focus on consuming carbohydrates and protein. However, cutting out fat from your diet will impair your performance, since it is used as an energy source as well as in many other functions of your body.

<i><b>Carbohydrates (CHO)</b></i>	<i><b>Glycemic Index</b></i>																											
<p>Carbohydrates are used for energy even when you are not exercising. For optimal performance, it is important that your glycogen stores (stored form of carbohydrate in your body) are replenished after each work-out. The optimal time to replenish your glycogen stores is during the two hours following a practice. This is not to say that you should only eat after practice, but, that after practice, high carbohydrate foods will help to give you that edge of increased glycogen stores and prepare your body for your next work-out or match.</p> <p>The amount of carbohydrates you typically need is about 60% of your total caloric intake. For simplicity, if you ate 2,000 calories a day, 60% of that is 1,200 calories from carbohydrates, which is equal to 300 grams (g) of carbohydrates (there are 4 calories of carbohydrate per gram; thus, <math>1200 \div 4 = 300</math> g of carbohydrate per day). The list below provides you with examples of some good sources of carbohydrates.</p> <p>Electrolyte/carbohydrate drinks, gels, and sports bars help provide your body with quick energy. Just remember that you need to drink plenty of fluids if you consume the gels and/or sports bars!</p> <p>Good Sources of Carbohydrate Include:</p> <p>-----</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">CHO</th> <th style="text-align: left;">Amount</th> <th style="text-align: left;">Approx. Grams</th> </tr> </thead> <tbody> <tr> <td colspan="3">-----</td> </tr> <tr> <td>pasta, cooked</td> <td>1 cup</td> <td>40 g</td> </tr> <tr> <td>potatoes, mashed</td> <td>1 cup</td> <td>32 g</td> </tr> <tr> <td>bread, whole wheat</td> <td>2 slices</td> <td>24 g</td> </tr> <tr> <td>cereal, dry</td> <td>1 cup</td> <td>20 to 80 g</td> </tr> <tr> <td>fruit, fresh</td> <td>1 med. piece</td> <td>15 g</td> </tr> <tr> <td>100% juice</td> <td>8 ounces</td> <td>15 g</td> </tr> <tr> <td>skim milk</td> <td>12 ounces</td> <td>18 g</td> </tr> </tbody> </table>	CHO	Amount	Approx. Grams	-----			pasta, cooked	1 cup	40 g	potatoes, mashed	1 cup	32 g	bread, whole wheat	2 slices	24 g	cereal, dry	1 cup	20 to 80 g	fruit, fresh	1 med. piece	15 g	100% juice	8 ounces	15 g	skim milk	12 ounces	18 g	<p>The glycemic index refers to the effect foods have on your blood sugar (glucose) levels. The faster and higher a food makes your blood sugar rise, the higher its glycemic index. Maintaining an adequate blood sugar means that you will have optimal energy and maintain and/or improve your ability to focus. Adequate blood sugar levels mean adequate energy for performance.</p> <p>High glycemic index foods may enhance performance in athletes and can be useful during and after work-outs or competitions. Low glycemic index foods may be helpful prior to sports activity. If you want to "experiment" with different types of carbohydrates, do so during practices, not competition. Here is a list of some high glycemic index foods: waffles, bagels, white bread, rice cakes, graham crackers, Rice Krispies*, Cheerios*, watermelon, baked potatoes, mashed potatoes, carrots, jelly beans, Life Savers*, honey.</p> <p>Here are some moderate glycemic index foods: orange juice, Gatorade*, rice, oatmeal, Grape Nuts*, wheat crackers, whole wheat bread, pineapple, raisins, banana, grapes.</p> <p>Here is a list of some low glycemic index foods: pasta, peas, chick peas, lentils, baked beans, peanuts, pears, oranges, sweetened yogurt, apple juice, skim milk.</p> <p>Depending on digestibility, low glycemic index foods may be consumed 30 to 60 minutes before you work-out.</p> <p>Remember, if you are going to experiment with high and low glycemic index foods, do so at practices, not during competition.</p>
CHO	Amount	Approx. Grams																										
-----																												
pasta, cooked	1 cup	40 g																										
potatoes, mashed	1 cup	32 g																										
bread, whole wheat	2 slices	24 g																										
cereal, dry	1 cup	20 to 80 g																										
fruit, fresh	1 med. piece	15 g																										
100% juice	8 ounces	15 g																										
skim milk	12 ounces	18 g																										

## ***Protein***

Protein is another important macronutrient which is also involved with providing you with energy. Protein is what mostly makes up your muscle mass, but is also important for metabolic functions in your body. If you eat too little protein, a lot of negative consequences can occur to your health and definitely to your performance.

A typical amount of protein required for an athlete is about 0.5 to 0.9 g protein per pound of your body weight. So, if you weigh 140 pounds, you will require anywhere from 70 g to 126 g of protein per day. You can also figure out your protein needs as a percentage of your total caloric intake. So, for example, if you consume 2,000 calories, 15% of 2,000 is 300 calories, which is 75 g of protein (there are 4 calories of protein per gram; thus,  $300 \div 4 = 75$  g of protein per day).

The list below provides you with examples of some good sources of foods high in protein.

Protein	Amount	Approx. Grams
eggs, scrambled	2 large	12 g
skim milk	12 ounces	8 g
cheese, American	2 slices	13 g
chicken breast, baked	3 ounces	25 g
fish, flounder, baked	3 ounces	21 g
hamburger, fried	3 ounces	21 g
tofu	3 ounces	12 g
vegetarian burger	1 patty	18 g
peanut butter	2 tablespoons	8 g
hummus	½ cup	6 g
beans (black, kidney)	½ cup	8 g
bagel, med.	1 whole	7 g
pasta, cooked	1 cup	6 g
cereal	1 cup	1-15 g

## ***Fat***

Fat has been given a bad rap in the last few years. Too many people have become "fat phobic." They believe that if low fat is recommended, then no fat is better. This is definitely untrue! Fat is required for a number of metabolic processes in your body and is especially important in supplying energy. Also, fat provides taste to foods and helps you feel less hungry later. So, some fat with each meal is important in helping you achieve your performance goals.

The amount of fat you need is about 20% to 30% of your total caloric intake. If you are consuming 2,000 calories, then your fat intake range would be: 400 to 600 calories per day from fat. This is about 44 to 67 g of fat per day. (There are 9 calories of fat per gram; thus,  $400$  to  $600 \div 9 = 44$  to 67 g of fat per day).

Remember: Watching your portion sizes at all meals will help you to stay within your caloric requirements.

For health reasons, the best choices of fat are monounsaturated, like using olive or canola oils. The second best choices are polyunsaturated fats, like soybean and safflower oils. Finally, consume saturated and trans fats the least in your diet; these include, palm oil, butter, palm kernel oil, coconut oil, and hydrogenated oils of any kind. Saturated fats increase the cholesterol in your blood. Below is a list of the grams of fat in oils and some foods. Note, some high protein foods also contain fat.

Fat	Amount	Approx. Grams
olive oil	1 tablespoon	14 g
canola oil	1 tablespoon	14 g
soybean oil	1 tablespoon	14 g
safflower oil	1 tablespoon	14 g
peanut butter	2 tablespoons	16 g
lean beef, broiled	3 ounces	9 g
1% milk	12 ounces	7 g

**Getting the right balance of carbohydrates, protein, and fat  
is important for peak performance!**

## B. YE OLDE WATERING HOLE: Achieving Adequate Hydration

Water is the most important nutrient. If the body becomes dehydrated, the metabolic processes slow down and don't work as well. When you are dehydrated, an exercise or practice will "feel" difficult.

Wrestlers sometime confuse this feeling with having a "good" work-out. This is just the opposite of what really happens! Dehydrated body cells don't allow you to put forth your maximum effort. In fact, a 1% to 2% loss of body weight due to fluid loss can cause a 15% to 20% decrease in performance!

Signs of dehydration include rapid heart rate, weakness, excessive fatigue, and dizziness. **Dehydration can be dangerous.** Exercising or practicing in a dehydrated condition can lead to heat stroke, muscle breakdown, kidney failure, and even death.

### Here are some points to remember about hydration:

If you drink adequate amounts of water or other fluids, you will feel better and perform better.	Fluids should be ingested 2 hours before (20 oz) and during (8 oz every 15 to 20 minutes) practice for optimal performance.
Thirst is a late sign of dehydration. Your performance could decrease as much as 10% before you feel thirsty. Start drinking fluids even before you get thirsty.	Continue to ingest fluids after practice to rehydrate. Weigh yourself before and after practice; any decrease in body weight is due to a loss in water from the body. Drink 2 cups of fluid for every pound of body weight lost.
One easy way to monitor your hydration status is to check the color of your urine. Light yellow indicates good hydration, dark yellow indicates dehydration.	Avoid alcohol and caffeinated beverages because they will promote dehydration. Carbonated beverages will also decrease the amount of fluid you are able to consume.
Avoid soft drinks because the added sugar in the drinks will slow down absorption.	Cold drinks are absorbed faster and also serve to cool the body to promote optimal performance.
Avoid fruit juices in large amounts at one time because they can cause diarrhea. However, 100% fruit juices are a healthy drink and should be consumed as part of your fluid intake throughout the day.	Water is an appropriate fluid for hydration and rehydration. A sports drink is fine, and the small amount of carbohydrate in a sports drink can provide you with quick energy during long practices or competitions.

### C. FACT OR FICTION: Being Smart about Vitamins, Minerals, and Other Supplements

Many nutritional supplements are marketed to improve performance or to build muscles and lose fat. However, most of these supplements have never been proven effective and could be harmful to your health or performance. Nutritional supplements are often advertised using deceptive and/or misleading claims. They can be marketed without the Food and Drug Administration's (FDA) review of safety or effectiveness, so, many claims are actually unsubstantiated. The contents of these "so-called" performance boosters may not be represented accurately on the list of ingredients and can contain impurities or banned substances. These substances could cause a student-athlete to test positive on a drug test without the athlete even knowing he consumed a banned substance!

<p><b>Protein and amino acid supplements:</b> Athletes ingest a sufficient amount of protein to build muscle without taking these supplements. Ingesting more protein will <b>not</b> build more muscle, but will be metabolized by the body. Often these protein supplements are combined with special enzymes or special protein formulations, like whey protein. None of these additives have ever been proven effective, and they are expensive.</p>	<p><b>Selected amino acid supplements</b> are purported to increase growth hormone. However, studies have found that manufacture recommended doses do <b>not</b> increase growth hormone or muscle mass. Moreover, ingesting only selected amino acids can negatively affect the absorption of other essential amino acids, impairing health and performance.</p>
<p><b>Vitamin and mineral supplements:</b> Most scientific evidence shows that selected vitamins and minerals will <b>not</b> enhance performance. Moreover, megadoses of these selected micronutrients have been found to be harmful.</p> <p><b>Vanadyl Sulfate</b> (vanadium) is a non-essential trace mineral that has insulin-like effects. It has <b>not</b> been found to increase muscle mass. Furthermore, taking one mineral can negatively affect the status of other minerals in your body.</p>	<p><b>Carnitine, herbal extracts, and special enzyme formulations,</b> as well as other substances naturally occurring in foods, do <b>not</b> provide any benefit to performance. Some herbal supplements, like Ma Huang, contain ephedrine which is a drug banned by the NCAA. Ephedrine is a stimulant and is sometimes combined with caffeine and aspirin by athletes who want to lose weight. The FDA has warned that ephedrine has potentially harmful side effects such as tremor and disturbances in heart function. Combining ephedrine with caffeine and aspirin will increase the risk of these side effects.</p>
<p><b>Creatine</b> may enhance short term high-intensity exercise. However, the verdict is still out on the safety of creatine supplements, especially over long periods of time. Creatine can increase body weight, predominantly due to abnormal water retention, which would probably be disadvantageous for wrestlers who are trying to maintain a low body weight.</p>	<p><b>HMB</b> (beta-hydroxy-beta-methyl butyrate) is a metabolite of the amino acid leucine. Only one study found that HMB increased muscle mass and strength and reduced muscle breakdown during resistance training. Additional studies are needed to confirm the results of only one study. Possible long-term consequences are not known.</p>

**NOTE:** Many high-tech nutritional supplements may seem to be effective at first, but this is likely a *placebo* effect - if an athlete believes these substances will enhance performance, he may train harder or work more efficiently. In other words, it is the athlete's training and not the supplement that is responsible for enhanced performance. Ultimately, most nutritional supplements are ineffective, costly, unnecessary, and can be dangerous, and impair performance.

## D. BEFORE THE WHISTLE BLOWS: Preparing for Training and Competition

Just as no two wrestlers perform exactly alike, so too, the optimal caloric need for each wrestler, even in the same weight class, may be different. Yes, caloric need depends on size, but there are many other physiological influences (e.g. resting energy expenditure, lean body mass, other daily activities in addition to wrestling, etc.) which affect caloric needs for optimal wrestling performance.

The sample training menus that follow are designed to meet the **minimum** caloric needs for each weight indicated; they provide approximately 0.86 g of protein per 1 pound of body weight. You are the best judge of your caloric needs based on your performance. Even at your lightest weight, you still need adequate energy, vitamins and minerals. So, if your work-outs are sluggish and training is taking a toll, leaving you feeling fatigued for the rest of the day, it may be that you are consuming too few calories.

### I. Sample Training Diets:

A. Sample Diet I – Wrestler of approximate weight of 125 lbs.

Approximately 2125 calories; 62% CHO (329 g); 20% protein (108 g); 18% fat (42 g)

<p><b>Breakfast</b></p> <p>1 ½ cups cold cereal 2- 8 oz. glasses skim milk* 1 slice whole wheat toast with 1 tbl. peanut butter and 1 tbl. jam 2- 12 oz. glasses water</p>	<p><b>Mid-morning</b></p> <p>8 oz. container low fat fruit-flavored yogurt 16 oz. water</p>	<p><b>Lunch</b></p> <p>2 oz. turkey, <b>or</b> roast beef, <b>or</b> ham, <b>or</b> tuna, <b>or</b> hummous sandwich with lettuce on multi-grain bread (no cheese; reduced fat mayo) Salad with nonfat dressing <b>or</b> carrot/celery sticks 2- 12 oz. glasses water</p>	<p><b>Pre-practice fuel</b> (about 1½ - 2 hours before practice)</p> <p>5 graham cracker squares 8 oz. orange juice 16 oz. water</p>
<p><b>Post-practice recovery</b> (within 15 minutes after practice ends)</p> <p>8 oz. pineapple juice or sports drink</p>	<p><b>Dinner</b></p> <p>_ cup beans ½ cup brown rice 1 oz. cheese 1 cup cooked vegetables 1 dinner roll <b>or</b> burrito wrap 8 oz. low fat chocolate milk 2- 12 oz. glasses water</p>	<p><b>Evening Snack</b></p> <p>2 fig bars 8 oz. skim milk*</p>	<p>CHO = carbohydrate tbl. = tablespoon</p> <p>*1% milk, low fat chocolate milk, lactaid milk, or soy milk may be substituted</p>

B. Sample Diet II- Wrestler of approximate weight of 157 lbs.

Approximately 2670 calories; 62% CHO (414 g); 20% protein (134 g); 18% fat (53 g)

<p><b>Breakfast</b></p> <p>¾ cup cooked, hot cereal with 1 tbl. raisins 2- 8 oz. glasses skim milk* 2- 12 oz. glasses water</p>	<p><b>Mid-morning</b></p> <p>1 bagel with 1 tbl. peanut butter 16 oz. water</p>	<p><b>Lunch</b></p> <p>3 oz. turkey, <b>or</b> roast beef, <b>or</b> ham, <b>or</b> tuna, <b>or</b> hummous sandwich with lettuce on multi-grain bread (no cheese; reduced fat mayo) Salad with nonfat dressing <b>or</b> carrot/celery sticks 2- 12 oz. glasses water</p>	<p><b>Pre-practice fuel</b> (about 1½ - 2 hours before practice)</p> <p>g bars 16 oz. water</p>
<p><b>Post-practice recovery</b> (within 15 minutes after practice ends)</p> <p>8 oz. pineapple juice or sports drink</p>	<p><b>Dinner</b></p> <p>3 cups cooked Pasta with ¼ cup meat sauce with ¼ cup grated cheese 1 cup cooked vegetables 2 slices Italian bread 2- 12 oz. glasses water</p>	<p><b>Evening Snack</b></p> <p>1 cup chocolate frozen yogurt 8 oz. skim milk*</p>	<p>CHO = carbohydrate tbl. = tablespoon</p> <p>*1% milk, low fat chocolate milk, lactaid milk, or soy milk may be substituted</p>

C. Sample Diet III – Wrestler of approximate weight of 197 lbs.

Approximately 3349 calories; 62% CHO (519 g); 20% protein (168 g); 18% fat (67 g)

<p><b>Breakfast</b></p> <p>1 ½ cups cold cereal 2- 8 oz. glasses skim milk* 2 slices whole wheat toast with 1 tbl. peanut butter and 1 tbl. jam 2 scrambled eggs 1 banana 8 oz. grape juice 2- 12 oz. glasses water</p>	<p><b>Mid-morning</b></p> <p>1- 8 oz. container fruit-flavored yogurt apple 16 oz. water</p>	<p><b>Lunch</b></p> <p>3 oz. turkey, <b>or</b> roast beef, <b>or</b> ham, <b>or</b> tuna, <b>or</b> hummous "triple decker" sandwich with lettuce on multi-grain bread (no cheese; reduced fat mayo) Salad with nonfat dressing <b>or</b> carrot/celery sticks ¾ oz. pretzels 2- 12 oz. glasses water</p>	<p><b>Pre-practice fuel</b> (about 1½ - 2 hours before practice)</p> <p>1 cinnamon raisin bagel 8 oz. orange, apple, or any 100% fruit juice 16 oz. water</p>
<p><b>Post-practice recovery</b> (within 15 minutes after practice ends)</p> <p>16 oz. pineapple juice or sports drink</p>	<p><b>Dinner</b></p> <p>6 oz. chicken (about 2 pieces, no skin) 1 cup cooked brown rice or 1 cup mashed potatoes 1 cup cooked vegetables 1 cup salad with 2 tbls. Ranch dressing 1 dinner roll 2- 12 oz. glasses water</p>	<p><b>Evening Snack</b></p> <p>4 oatmeal cookies (medium size) 8 oz. skim milk*</p>	<p>CHO = carbohydrate tbl. = tablespoon</p> <p>*1% milk, low fat chocolate milk, lactaid milk, or soy milk may be substituted</p>



## II. EATING FOR COMPETITION

If there is insufficient gas, oil, or water in your car, it certainly isn't going to get you very far or provide maximum performance. In this same way, your body's engine needs to be well-fueled and well-hydrated to maximize your power, concentration, and overall potential on the mat. The following offers suggestions for a winning performance. See "FUELING UP" section (pages 9-10) for details on glycemic index categories and examples of food high in carbohydrate, protein, and fat.

Recommendation	Comment
<p><b>The Day Before a Match</b> Two Hours before bedtime (especially if there is no time for breakfast in the morning)     Drink 18-20 ounces of water or sports drink     Eat a performance snack consisting of low glycemic index carbohydrates <b>and</b> protein foods</p>	<p><b>Sample of Performance Snacks</b> A few graham crackers with peanut butter, or ½ turkey sandwich, or a package of an instant breakfast mix with skim milk.</p>
<p><b>Match or Training Day</b> 4–5 hours before: 600-1000 calories: eat high carbohydrate (120-200 grams), moderate protein (7-14 grams) and moderate fat (&lt;15 grams) foods  1½- 2 hours before: 250-350 calories: eat high carbohydrate (30-60 grams), low protein (&lt;7 grams) and low fat (&lt;5 grams) foods</p>	<p><b>Example:</b> <b>If Match is at 11 am, then:</b>     Breakfast (2–3 hours ahead):         Orange juice,         Bagel with jam         or         Cereal and skim milk and a banana <b>If Match is at 2 pm, then:</b>     Breakfast (4-5 hours ahead):         100 % fruit juice         Pancakes/waffles/syrup         Skim or 1% milk     Lunch (2-3 hours ahead):         Nonfat fruit-flavored yogurt         banana         100% fruit juice</p>
<p><b>From Weigh-in to Match</b>     Drink 8-12 oz. of sports drink  <b>Between Matches</b>     Eat high glycemic index carbohydrates</p>	<p><b>Sample of Between Match Foods:</b> dry cereal, bagel, jelly beans, graham crackers     Limit fat (&lt; 5 grams)     Limit protein (&lt; 7 grams)     Drink 8-12 oz. of water or sports drink</p>
<p><b>After the Match</b> The first 15 minutes after strenuous activity are the most critical for replacing carbohydrates and building glycogen stores.  Note: High fat, empty calorie foods and beverages like candy bars, pastries, carbonated beverages consumed immediately after an event may not supply the proper amounts of carbohydrates, vitamins, minerals, and fluids needed to enhance recovery. In addition, alcohol slows down the recovery process and may increase the risk of injury or fatigue.</p>	<p><b>Follow the three R's of Recovery:</b>  <b>Rehydrate:</b> your muscles with water <b>Replenish:</b> your muscles with carbohydrates like fruit juice or carbohydrate-loading beverages (0.2 to 0.7 grams carbohydrate/lb of body weight) <b>Repair :</b> your muscles to prevent injury by continuing to drink water or fruit juice and keeping the emphasis on eating high carbohydrate foods for the next 2 hours along with foods containing proteins and fats</p>

**F. ROAD WARRIORS: Eating on the Road**

Menus at Fast Food Restaurants are always changing. However, the following are your **BEST BETS**:

<p><b>Beverages</b></p> <p>Orange juice; low fat/skim white or chocolate milk; lemonade</p>	<p><b>Extras</b></p> <p>Bagels; English muffin with jelly; low fat fruit yogurt; Italian bread slices; salad; Italian dressing; salsa; barbeque sauce</p>
<p><b>Entrees</b></p> <p>Pancakes; scrambled eggs; cereals; turkey, ham, or roast beef sub (hero, grinder); <u>thick</u>-crusted veggie pizza; charbroiled chicken sandwich; chicken fajita; baked potato; chili; <u>plain</u> hamburgers; pasta with tomato-based sauce; <u>soft</u> taco (burrito) with rice and beans with either: meat sauce, <i>or</i> cheese, <i>or</i> sour cream</p>	<p><b>Omit</b></p> <p>Butter; hashbrowns; bacon/sausage; French fries; special sauces; cheese sauces; mayonnaise; creamy dressings; tuna subs (heros, grinders); extra cheese on sandwiches, subs, or pizzas.</p>
<p>Don't forget to include a couple of cups of water at each meal, as well!!</p>	<p><i>Note:</i> A, B, C's of baked potatoes:</p> <ul style="list-style-type: none"> <li><b>A.</b> the skin contains most of the vitamins and minerals</li> <li><b>B.</b> a large baked potato contains between 6 and 8 grams of protein</li> <li><b>C.</b> 1 <u>tablespoon</u> of sour cream has one sixth the fat of 1 <u>teaspoon</u> of butter/margarine.</li> </ul>

**Many fast food restaurants now have "lite" options which means they have reduced the fat used in preparation. These can also be good choices, so look for them on the menu!**

## V. QUICK TIPS

### A. HIGH PERFORMANCE MEALS AND SNACKS

#### *Choose from these foods*

#### *Slow down on these* <sup>⊗⊗</sup>

<p><b>Breakfast</b></p> <p>French Toast      Hot &amp; cold cereals  Pancakes            Fruit  Toast/Bread        100% Fruit juice  Bagels                Low fat milk (Chocolate ok)  Boiled egg</p>	<p>Donuts    Bacon  Pastries            Fried potatoes  Fried eggs        Soda/pop  Sausage            Coffee</p>
<p><b>Mid-Morning Snack</b></p> <p>Bagels            100% Fruit Juice    Fig Newtons*  Instant Breakfast*    Fruit                    Low fat milk  Pretzels            Gatorpro*            Bread  Low fat Yogurt    Power Bars*        Boost*</p>	<p>Pastries  High fat muffins</p>
<p><b>Lunch</b></p> <p>Sandwiches (make triple deckers - 3 pieces of bread, but <u>not</u> 2 servings of meat):</p> <p>Turkey            Hummous  Roast beef        Salad  Tuna salad        Baked potato puffs  Seafood salad    Extra bread  Ham                Low fat milk (chocolate ok)  Ham salad        100% Fruit juice  Fruit                Cheese (2 slices max)</p>	<p>French fries            Fish patties  Burgers                Deli meats  Hot dogs                Chips  Fried chicken patties    Soda/pop  Croissant sandwiches    Punch  Cheese sandwiches</p>
<p><b>Pre-Practice/Pre-Competition Snack</b>  <b>(2 hours before event)</b></p> <p>Pretzels    Gatorlode*    Low fat yogurt  Bread        Fig Newtons*    Power Bars*  Fruit        Bagels            Boost*  Instant Breakfast* (mixed in water)</p>	<p>Potato chips            Candy bars  Corn chips              Pizza slices  Cookies                 Soda/pop</p>
<p><b>Dinner</b></p> <p>Chicken, fish, lean beef      Tortillas/chapati  Red or black beans            Greens/salads  Rice                                Vegetables  Tofu or tempeh                Black-eyed peas  Pasta/noodles                 Potatoes  Yams                                Milk (low fat/chocolate)  Bread                                100% fruit juice</p>	<p>Chicken wings            Soda/pop  Steak/prime rib            Butter/gravy  Fried foods                Alfredo sauce  Subs/calzones             Cream sauces  Burgers                     Cheese sauces</p>
<p><b>Evening Snack</b></p> <p>The choice is yours! If you're going to eat low performance foods, this is the safest time of day to do it (providing that you don't have early morning practices).</p>	<p>Remember: Don't overdo it! This is not a substitute for dinner.</p>

<sup>⊗⊗</sup> These items are the LEAST HELPFUL in athletic performance. Limit how much and how often you eat them.

\* These are brand names, commercially available products.

## B. HIGH PERFORMANCE TIPS

<p>Post-event eating is just as important as pre-event eating to assure adequate recovery and decrease risk of fatigue and injury over the season.</p>	<p>Remember to drink water and 100% fruit juice throughout the day. Thirst is <b>not</b> the first indicator of dehydration. Your body can be dehydrated long before you ever <b>feel</b> thirsty.</p>
<p>Eat Power Bars* in place of candy bars.</p>	<p>Consume 100% <b>real</b> fruit juice in place of fruit juice drink, fruit juice cocktail, fruit drink, or fruit punch.</p>
<p>Eat fruit or pretzels in place of chips.</p>	<p>Drink water in place of soda or pop (sodas and pops, especially cola-types, may promote dehydration).</p>
<p>No time, not hungry, nerves before a big match? Avoid fatigue and poor focus by making it a habit to consume a liquid meal supplement like Boost*, Gatorpro* or Carnation Instant Breakfast* (mixed with skim milk or water) instead of skipping a meal or snack.</p>	<p>Water, Gaterlode* <b>and</b> oranges, bananas, or pineapple juice <b>within the first 15 minutes after practice/competition</b> help you rehydrate, re-energize your muscles, and decrease muscle fatigue build-up over the season.</p>

\* indicates brand names, commercially available products.