



## Maximizing Performance: Food as Fuel

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### The most critical nutrient for growth, development and health?



Dehydration leads to increased core body temps, decreased muscle strength and endurance, increased glycogen (stored energy) utilization, a slowed metabolism, and altered central nervous system function (slowed reaction time and degraded cognitive function). Together, this equates to an incremental direct decline in performance with increasing levels of dehydration.

**When Does Dehydration Affect Performance?** As little as 2% dehydration can cut your strength-training workout by as much as 21% and aerobic power by 48%. For example, if you weigh 150 lbs and you lose 3 pounds of water weight, your performance will start to decline.

At 4-6% dehydration, an athlete will become progressively more weak, tired and mentally drained. Many wrestlers pride themselves on how much weight they lose in a particularly hard practice. This is counterproductive thinking. This same wrestler should consider how much harder they could have worked and how much more effective practice would have been if they had been able to stay hydrated.

What about aggressive dehydration to make weight? Can a wrestler simply rehydrate after weighing in and expect performance to not be affected? Unfortunately, your body typically takes 24 to 48 hours to recover fluid balances and replenishing the body's energy stores might take as long as 72 hours.

### What about very low calorie diets?

While low-calorie diets will lead to weight loss, they will not lead to **effective** weight loss. Your body will respond to a low calorie diet with a diminished response to exercise, a decline in endocrine and immune system function, and a lowered basal metabolic rate. Crash dieting will lead to loss of fat, fluid **and** muscle. Aerobic power and strength are ultimately sacrificed. In other words, if your goal is to have your body in peak condition for maximizing your performance on the mat, very-low calorie diets are entirely counter-productive.

### How should wrestlers think about “cutting weight”?

Making weight is obviously an important and necessary part of wrestling and there are some benefits to the discipline required to keeping your weight in check. On the other hand, many wrestlers place too much emphasis on cutting weight and lose sight of the greater goal of maximizing performance. For most wrestlers, weight loss will likely be a by-product of making healthy food choices and working hard throughout the season. For some wrestlers, an alteration in body composition through gaining or maintaining muscle, while burning fat, can lead to **effective** weight loss.



*“Cutting weight doesn’t make you a better wrestler or give you a better chance to win.  
Get big, strong, and technical. That’s what wins!”*

– Jordan Burroughs



### How can wrestlers use nutrition to maximize performance?

There is no other sport that combines the need for peak explosion and power with incredible muscle endurance and aerobic capacity. Optimal nutrition will help the body to build and maintain muscle, lose fat, maximize training effects, recover efficiently, and prevent injury and illness. Food should be seen as the fuel used to create a fat-burning, muscle-building metabolism that is capable of running at peak efficiency.

### What are the dietary components that must be balanced?

Nutrients, including proteins, carbohydrates, and fats are metabolized along with vitamins, minerals and water to produce energy, allowing the body to work and build.

### What is the role that each of these components play?

**Protein-** The builder- constructs and repairs muscle tissue after exercise. Proteins produce heat (thermogenic) and lead to a more full feeling. In this way, they promote weight loss relative to carbohydrates.

**Carbs-** The most powerful nutrient for affecting energy levels- affects muscle building and fat burning power while sparing proteins from being used as fuels (breakdown of muscles). Carbs are the rapid fuel needed for sustaining bursts of all out energy expenditure.

**Fats-** The right kinds of fats can have a profound positive effect on weight management, mood and overall health.

### How and why should wrestlers balance these nutrients?

First, there is no clear cookie-cutter diet that wrestlers should follow. Each body type is different and goals and needs may vary widely. Secondly, the key word is **balance** as each of these nutrients play a critical role in providing adequate fuel for wrestlers.

**Proteins-** In general, based on the amount of high intensity force production and energy expenditure that is required throughout the season, wrestlers should look to consume 30-35% of their calories from protein. That is around 1gram per pound of body weight per day. This will be critical for maintaining, and possibly building lean muscle mass. Start paying attention to food labels and determine how much protein is consumed with various servings of meat or nuts. You will soon realize that is a fairly significant amount of protein that you may not be used to consuming. A small pre-exercise meal and a small post-exercise meal that contains some protein is generally a good idea. Remember- no extremes! Your body will eventually start to store excess proteins as fat. Stored body fats do very little for improving your performance.

**Carbs-** In general, wrestlers should look to consume 40-45% of their calories from carbohydrates. A very low carb diet will lead the body to break down muscle for energy. High carb diets are stored as fat. Remember that carbs are not your enemy when it comes to weight loss- eating too many calories is your enemy. Carbs should be carefully consumed as a key fuel for maximizing your performance.

**Fats-** That leaves the final 20-30% of calories to be consumed through fats. This may also seem like a higher number than you might expect, but fats are critical for many of the body's functions, such as maintaining a healthy immune system. Also, although it may sound counterintuitive, eating the right kinds of fats can actually help your body burn off stored fat. Remember, it's the stored body fat that is doing very little for you on the mat.



### In what form should these nutrients be consumed?

A good rule of thumb is to consume foods that are as close to the natural state as possible. Nutrients are absorbed better when they come from real food. For wrestlers, it's also a good idea to eat small amounts of food throughout the day. Crash dieters and dehydrators embrace the yo-yo effect. Neither the highs or the lows are effective in helping your body's efforts to reach peak performance.

The recommendations below are simply guidelines and suggestions, not a specific diet plan. Individualized meal plans depend on many factors unique to each athlete. I would be happy to direct you to one of our nutritionists at TCO for an individualized plan. This is a very worthwhile endeavor that many elite level wrestlers pursue.

**Protein-** Focus on eating chicken, fish, and lean red meats. Eggs are also a fantastic form of complete proteins. Whey proteins are digested and absorbed quickly, which is ideal for post workout consumption. If you are going to take proteins in a supplement form, I recommend using whey proteins.

Soy proteins are often found in bars and other "protein rich" processed foods. While soy protein is readily available and inexpensive, soy proteins are not as effective in stimulating muscle gains and have been shown to impact hormone levels in a way that may be unsafe.

**Carbs-** Carbohydrate calories should be consumed primarily through eating fruits and vegetables. Whole grain breads and pastas can also be an excellent source of carbs as long as they are not the only source. Optimal carb quantity is a critical factor for maximizing performance and altering body composition. Protein and fat needs stay more stable, while carbohydrate needs tend to fluctuate based on exercise habits and body composition goals.

It can be a real challenge to avoid the refined and processed carbohydrates. Avoid sugar, high fructose corn syrup, white flour, white rice, commercial baked goods, most packaged foods and alcohol. This may be your most daunting task as these substances are addicting, convenient and readily available at nearly all times. It may feel that your body is craving these sugars but these cravings will diminish with time.

**Fats-** Focus on eating more vegetable fats than animal fats. Use corn, safflower and walnut oils. Avocados, unsalted nuts and seeds can be a great source of quality fats and can also keep hunger at bay. Eating omega-3 fats from fish (also a great protein source) or from a fish oil supplement is a good idea.

Many fats that are found in processed foods are unhealthy saturated fats that the body is more likely to store. Once again, work toward avoiding processed foods as much as possible.

### What are some good foods to eat on match day?

In general, the same principles apply, but you will likely need to eat and digest quickly between matches on tournament days. You will also need to plan ahead and pack foods for traveling. Here are some suggestions.

- Fruits without peels- less fiber, easier to digest
- Whole grain bagel with cream cheese
- Oatmeal with dried fruit, brown sugar and milk
- Low fiber cereal with milk and fruit
- Breakfast shake
- Fresh, frozen, or dried fruit, fruit leathers, fruit bites, apple sauce
- Sandwich on the whole grain bread with deli meat, hummus, avocado or dressing
- Rice crispy treat or juice right before match
- Yogurt- top with low fiber cereal
- Chocolate milk
- Energy chew/gels
- Energy bars

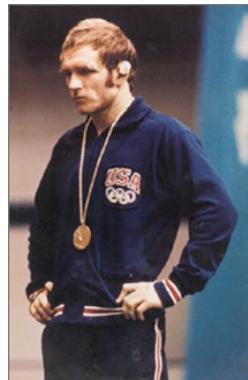


### Brief Summary

Ditch the yo-yo diet historically used by many wrestlers. Eat the right kinds of fuels in the appropriate proportions. Eat small meals throughout the day. Stay hydrated at all times. Work like crazy!

*"The obvious goals were there- State Champion, NCAA Champion, Olympic Champion. To get there I had to set an everyday goal which was to push myself to exhaustion or, in other words, to work so hard in practice that someone would have to carry me off the mat ."* Dan Gable

You can't outwork your opponent if you're dehydrated and starving your body of fuel or dumping in junk fuel! Have the discipline to use premium fuels to maximize your performance.



Making nutritional changes requires incredible discipline- in some ways this will be harder than waking up for an intense 6am workout. These changes start with knowledge but then have to be translated to behavior. Working with a registered dietitian may be the best way to link knowledge with behavioral change. I would be more than happy to refer any athlete looking to make these critical changes to one of our dieticians.