

Aaron Brock September 14, 2009



Photo: USA Volleyball/Julian Baum

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Aaron Brock MS, ATC, PES  
Director of Sports Medicine and Performance to the U.S. National Teams  
USA Men's Olympic Volleyball Team  
E-Mail: [aaron.brock@usav.org](mailto:aaron.brock@usav.org)

If you haven't given nutrition much thought, you may want to start... now!

Research clearly demonstrates the beneficial effects of optimal nutrition on athletic performance. While many factors need to be considered when discussing an athlete's performance - nutrition is among the most important variables.

As the Head Athletic Trainer (ATC) for the Men's Olympic Volleyball Team, I oversee the nutrition of elite athletes on a daily basis, and now I am passing along my knowledge onto you:

Proper nutrition can make you a better player by giving you an edge. It can make the difference between winning and losing.

Whether you earned a gold medal at the 2008 Olympic Games in Beijing, a high school or college athlete, or an active adult, these tips can make a difference in your performance and overall well-being.

Here are 10 simple concepts to apply to your daily life.

### 1. Devour Breakfast!

Your mother was right: breakfast is the most important meal of the day. Don't start the day with an empty fuel tank. The Men's Olympic Volleyball Team practices every morning and lifts weights in the afternoon – if they don't eat an adequate breakfast, they will not have enough energy for a quality practice.

Replenish your energy stores to ensure adequate fuel for competition or training. Be sure to have both carbohydrate and protein in your breakfast. Protein will help maintain your glucose levels throughout the morning and stave off hunger, while carbohydrates will provide needed energy.

Pancakes with syrup, whole grain toast with jam, and orange juice are quality breakfast choices, but add low fat yogurt, skim milk, lean sausage, eggs, or egg whites to obtain protein.

Other healthy options include:

- Low fat yogurt and fresh fruit
- Smoothie made with fruit and low fat yogurt
- Whole grain cereal with skim milk and fruit
- Vegetable omelet with whole wheat toast and orange juice
- Scrambled eggs and one-half of whole wheat bagel

### 2. Smart Pre-Workout Nutrition

This concept goes hand in hand with the importance of eating breakfast, depending on the time of day you practice. If training is in the afternoon, perhaps several hours after your last meal, your pre-workout nutrition becomes even more vital.

Don't begin practice with a carbohydrate deficit or you may experience slower reflexes, reduced stamina, weakened muscle response and loss of focus. (For volleyball players, this translates into a slow arm swing, lower vertical jump, and poor reaction time.)

Plan ahead. Keep snacks high in carbohydrates and light on protein and saturated fat handy:

- Any fruit: banana, apple, applesauce, pear, orange, melons, berries, grapes, tomatoes, smoothie.
- Light sandwich: turkey (hold the mayo), chicken, peanut butter & jelly, etc.
- Grains: cereal, bagel, English muffin, tortillas, pita pocket.
- Sports drinks: Gatorade, PowerAde, light fruit juice.
- Energy bars such as Cliff and Powerbar:

- All energy bars have varying amounts of carbohydrates, protein and fat, so look at the label and know what you're consuming. Also, consider drinking a full glass of water to help break down nutrients and aid absorption.
- If you eat energy bars often, consider varying the brands so you don't tire of the same bar and find yourself skipping food all together.
- Remember, energy bars are not candy bars, so don't expect them to taste like such, although many do taste good. The point is - sometimes you need to disregard your taste buds for the good of your nutrition!
- Other: skim milk, low fat yogurt, graham crackers, pretzels

### 3. In-Workout Nutrition

If your workout or competition lasts more than one hour, carbohydrate consumption during activity may help your stamina if you begin to feel sluggish or fatigued.

I provide some light carbohydrate options for consumption during competitions to ensure adequate energy for maximal jumping and spiking, but of course, the extra boost of energy will help you in whatever sport you play.

Good carbohydrate options include:

- Sports drink
- Small portions of carbohydrate-rich energy bars, and carbohydrate gels like Powergel and GU.

Always pay attention to how your body feels. Although many variables may play into this "feeling," nutrition is often a contributing factor, and one that can easily be addressed at the time.

### 4. Manage Your Post-Workout Recovery

After a workout or competition, it is essential to replenish your energy stores!

Consume enough carbohydrates to replace that day's depletion and prepare for your next training session; add a sufficient amount of protein to help muscle and tissue repair.

Since cells are more receptive to carbohydrates and protein during the 60 minutes immediately after exercise - don't wait too long to indulge. Depending on your body weight, you should consume between 50 -75grams of carbohydrates and 10-20 grams of protein within that first hour after training.

First, establish a habit of consuming carbs and protein immediately after your workout before being concerned with the specific amounts.

## 5. Hydration

Proper hydration is key to good nutrition. The body needs water to function - especially during intense training or exertion.

Dehydration of as little as 2% body mass can:

- Decrease muscular strength
- Decrease muscular endurance
- Decrease anaerobic work capacity

Dehydration of 3-5% can result in increased risk of muscles cramps and heat exhaustion. Be sure you start practice and competition with optimal fluid levels to help delay or minimize dehydration.

A good indicator of hydration is actually urine. Ideally, urine should be clear to light yellow (lemonade color). If your urine is darker yellow (apple juice color), it means you are dehydrated and need to replenish your fluids. You can also easily monitor fluid loss and adjust your intake accordingly by weighing yourself before and after exercise.

The majority of your hydration should come from water; however, sports drinks can help replace electrolytes which are lost during exercise.

## 6. Build a Strong Immune System

I travel around the world with the Men's Olympic Volleyball Team and I've found that the best way to prevent illness with such a rigorous travel and training schedule is to have a strong immune system. Eating appropriately can help accomplish that goal.

Stay healthy by stocking your diet with:

- Antioxidant-rich foods
- Vegetables, especially green leafy veggies and broccoli, cauliflower, asparagus and carrots
- Fruit, especially berries, apples and oranges
- Omega-3 and mono-unsaturated fats found in fish, nuts and seeds.
- Healthy fats. All fats are calorie-dense, so choose healthy fats such as avocados, olives, raw nuts/seeds, and ground flaxseed to meet your caloric needs.
- Lean proteins, including: chicken breast (skin removed), turkey breast (skin removed), egg whites, fish fillet, shellfish, lean beef (top round), tuna (canned in water), non-fat cottage cheese and beans (black beans, kidney, chick peas or lentils)
- Fish & seafood, eggs, lean meats, low-fat dairy, legumes/beans, nuts and tofu.

## 7. Eat Small Amounts More Frequently

Instead of sitting down for three large meals a day, you should break it up by eating 6 "mini-meals" throughout the day. Eating every 3-4 hours (starting with breakfast) can improve lean body mass and decrease fat.

Also, you can increase the intensity of your workouts and balance your metabolism by providing a steady amount of sugar – and this does not mean actual packets of sugar or sugar-rich candy! Instead try fruits, berries, or nuts.

## 8. Be Smart About Supplements

Take at your own risk – supplements are unregulated by the FDA so there is no guarantee that what is on the label is in the product or vice versa.

Manufacturers of these products often make unsubstantiated claims to entice athletes to use their product, so do your research before adding any supplement to your diet.

There are three certifications that supplements can obtain in order to boost their credibility (keep in mind, this still does not confirm ultimate effectiveness):

- USP: ([www.usp.org/USPVerified/dietarySupplements](http://www.usp.org/USPVerified/dietarySupplements))
- Consumer Lab: ([www.consumerlabs.com](http://www.consumerlabs.com))
- NSF: ([www.nsf.org/Certified/GMP/listings.asp](http://www.nsf.org/Certified/GMP/listings.asp))

A multivitamin is generally o.k., but don't "megadose" on single vitamins or minerals unless directed by your physician.

## 9. Carbohydrates are your friend!

Some people believe carbohydrates should be significantly reduced or eliminated due to the promotion of low/no carbohydrate diets – like Atkins. However, for athletes, carbohydrates are extremely important and should comprise 50-60% of your daily caloric intake. Explosive activities like volleyball, basketball, and football, to name a few, activate the creatine phosphate system, which is fueled by carbohydrates.

Not only are carbohydrates important for optimal physical performance, but they also help you to concentrate, focus, and stay mentally sharp.

You must consume enough carbohydrates to replace that day's depletion and to prepare for your next training session. Good carbohydrate choices include:

- Breads: bagel, dinner rolls, English muffin, pita pocket, sliced bread
- Cereals: bran, unsweetened, granola, oatmeal
- Grains: low fat muffin, pasta, pancakes, rice, crackers
- Vegetables: baked beans, corn, peas, potato

- Choose whole grains whenever possible. They are packed with vitamins, minerals, and phytochemicals that have powerful antioxidant properties that you won't obtain from white bread.

## 10. The Powerful Powers of Protein

Athletes need high levels of protein (15-20% of daily caloric intake) to help repair and rebuild muscles broken down by physical activity and to aid in carbohydrate storage.

An athlete's elevated protein requirements can usually be met by a well planned diet (supplements are not typically necessary):

- Excellent protein sources include: poultry, turkey, beef, pork, fish, low fat cheese, legumes (black, kidney, pinto beans, and chickpeas), egg whites, and soy products such as tofu.
- Although adequate levels of protein are important, keep in mind that excess protein is simply extra calories either burned for energy or stored as fat. When it comes to fuel, protein is less efficient than carbs. Get enough protein from your diet so your body doesn't break down muscle to use the protein for fuel.
- Protein from both food and supplements increases your need for water. Since your kidneys require more water for protein metabolism, individuals with liver or kidney problems are susceptible to negative effects of excessive dietary protein. Without proper nutrition, an athlete's body will eventually succumb to injury, illness, poor performance, and fatigue. You don't have to be a "health food nut" or nutrition expert, simply implement some of the above concepts into your daily routine and you'll begin to notice a positive difference in your energy levels and athletic performance.