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# NUTRITION AND THE ATHLETE

## Overview

An overwhelming amount of information exists in the world of sports nutrition. At times it may seem like everyone around you is a self proclaimed “nutrition expert” and is more than willing to supply you with information that you may or may not be interested in. For a subject where so many opinions exist, it can be difficult to discern what information is accurate and what will benefit you, as an athlete, the most. It is important to remember that many sports nutrition practices are simply myths and that some may even be harmful. When used correctly, proper nutrition and fluid intake can help athletes to attain optimal health and athletic performance (1).

## Calorie Needs

Calorie needs vary by age, gender, weight, activity level, metabolism, etc. The easiest way to know if you are getting enough calories is to check your weight periodically. If you are maintaining the same weight, you are probably balancing your calorie intake with your activity level and should not need to change the amount of food you are eating. If you are gaining or losing weight, however, you are most likely taking in too many or too few calories. The key is to get a balanced variety of foods to meet calorie needs. Carbohydrates should comprise 55-60% of calories. Fat intake should not exceed 30% of calories and protein should take up the remaining 10-15% of calorie needs. The most important thing is to include a variety of foods from **ALL** of the food groups (2).

## Carbohydrates

You need them! As an athlete, carbohydrates are especially important because they supply the body with glucose. Energy for physical activity is obtained by the breakdown of glycogen (the storage form of glucose) in muscles. The body stores enough glycogen to provide energy for roughly 90-120 minutes of activity at a time. For this reason, it is not generally necessary to consume carbohydrates during athletic activity. Carbohydrate-containing food or beverages may, however, regulate blood glucose levels during long or strenuous activity (2).

## Protein

Protein is considered, by many, to be an almost miraculous source for building muscle mass and strength. Unfortunately, the only way to “build muscle” is through strength training paired with adequate, balanced food intake. Although surprising, most athletes need comparable amounts of protein to people who are less active. There are certain instances where protein needs are slightly higher for the athlete, but *slightly* is the key word (3). As a general guideline, two to three servings of protein (for a total of 6-7 ounces), as well as 2-3 servings of dairy will provide more than enough protein for athletes. Keep in mind that protein consumed in excess of needs can be stored as fat if not utilized for energy purposes (2). The safest and most cost effective way to get the protein you need is by eating the recommended servings of meat/beans/meat alternatives and dairy each day.

## Fat

Although many view fat as a cause for weight gain, fat is actually essential to many body functions. Among other roles, you are not able to absorb fat soluble vitamins (A, D, E, & K) or make necessary

hormones without fat. This is especially important for women whose menstrual cycle can even stop if they are not getting enough fat (3). The most important thing to keep in mind with fat intake is the type of fat. It is best to keep saturated fat intake low (less than 7% of fat intake) and to avoid *trans* fats as much as possible. Choose fat sources that are higher in poly- and mono-unsaturated fats, such as walnuts, salmon, olive oil and avocados (4).

**Hydration**

Proper hydration can help athletes perform at their best. Sports drinks can be helpful when performing in endurance events or during strenuous and lengthy training sessions, but for all other times, plain water is sufficient. Sessions lasting 90 minutes or longer are considered "lengthy" and may require sports drinks (5). Check out the "Okay, So What Should I Eat?" section for tricks to make water more appealing and for a homemade sports drink recipe (6). One way to determine how much fluid you should have after a practice or event is to weigh yourself before and after. Consuming 16 ounces of fluid for every pound of weight loss will help replenish any lost fluid (5).

**Supplements**

Performance enhancing drugs and other dietary supplements have flooded the market. In fact, some studies have even shown that 88% of athletes (at the university level) use supplements (7). It is especially important for athletes to exercise discretion when considering adding one of these items to a daily regimen. Many products may be harmful and/or contain ingredients that are prohibited by the NCAA (National Collegtiate Athletic Association). A complete list of substances not allowed by the NCAA can be found at: **http://www.ncaa.org/wps/wcm/connect/resources/file/eba7024a0e95dde/banned_drug_classes.pdf?MOD=AJPERES.** Always Research the supplement and compare. Don't ever assume that a supplement or over-the-counter medication is safe for you. For more information about dietary supplements, check out the UNT Dining Services "Dietary Supplements" pamphlet.

**Weight**

Many athletes are interested in either gaining or losing weight. This should, however, be done with caution and at a slow pace. Also, weight change during the competitive season is discouraged (8).

Weight Gain: Many sports encourage "bulking up" or gaining muscle mass. Contrary to common belief, eating large amounts of protein or taking protein supplements will not increase strength or the amount of muscle a person has. Adequate calorie intake, in addition to proper strength training, can help to increase muscle mass and overall weight. As much as 500-1000 calories can be added each day to aid in weight gain, but keep in mind that without ample strength training this increase in calories is likely to promote weight gain by way of excess fat (6).

Weight Loss: It is especially important to make sure that goals for weight loss are realistic. "Consultation with a registered dietitian trained in sports nutrition can help athletes maintain a healthful diet while reducing total energy intake to allow gradual weight loss (approximately 1 to 2 lbs/week or 0.5 to 1.0 kg/week). The process begins with the identification of what constitutes a realistic healthful body weight based on genetic, physiologic, social, sport, and psychological factors. A healthful weight is one that can be realistically maintained, allows for positive advances in exercise performance, minimizes the risk of injury or illness, and reduces the risk factors for chronic disease" (8). It is essential to focus on overall health, rather than a particular number on a scale. Restricting calories, protein or fat too much can impede athletic performance and cause a host of other problems, such as amenorrhea (lack of menstrual period) in women and/or lead to eating disorders (8).

**Okay, So What Should I Eat?**

In general, an athlete's day-to-day diet should focus on eating a variety of foods from all of the food groups. Each group provides essential nutrients that contribute to overall health. For a healthy eating plan that fits your specific needs, check out **www.mypyramid.gov** and talk with a **registered dietitian**. Stick to these general guidelines for before, during and after exercise (2, 3, 8):

Before

- Eating 1-4 hours prior to exercise can help keep blood glucose levels steady during activity. Try something that has a moderate amount of carbohydrate and, if you prefer, a small amount of lean protein. If you find that certain foods or eating too soon before an event causes GI upset or other problems, listen to your body. Everyone is different and for some, eating a small snack that is easy on the stomach may be the best choice.
- Try to eat foods with plenty of carbohydrates that can quickly supply the body with the glucose needed for energy. Fruits, juices, and whole grains (toast, bagels or cereal, etc.) are good options. If you would like to add a small amount of protein, try low fat cheese, milk or yogurt.
- Keep hydrated! Going into an event hydrated can help to prevent dehydration during exercise. Be sure to drink plenty of water, starting 24 hours before, in preparation for athletic training and events. Drink 400-600mL (about 14-20 ounces) of fluid 2-3 hours prior to the event.

During

- Drink 150-350mL (about 6-12 ounces) of water for every 15-20 minutes of exercise to prevent dehydration. Your needs may be greater depending on the weather and environmental conditions (i.e. very hot, humid or cold weather or high altitudes). If you don't prefer plain water, try adding fresh lemon or lime juice or a splash of fruit juice.
- If your physical activity lasts more than 90 minutes, is particularly strenuous and continues without breaks, try drinking a sports drink to replace electrolytes and carbohydrates. Homemade versions of the pricey sports drinks can be made by mixing:
    - 8 ounces of water
    - 4 teaspoons sugar
    - ¼ teaspoon salt
    - 1 teaspoon flavoring (try fresh lemon, lime or orange juice)

After

- Drink plenty of water! This will help to replace any fluids lost after exercise.
- Eat a balanced meal that contains plenty of carbohydrates to replenish glycogen stores after vigorous, continuous exercise.

**Additional Reading & Resources**

- http://www.brown.edu/Student_Services/Health_Services/Health_Education/nutrition/sportsnut.htm.
- http://www.americanheart.org/presenter.jhtml?identifier=3045789

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