

SPORTS NUTRITION

Athletes who want a winning edge need the right nutrition. When you drink enough water and eat a balanced diet, your body can make energy efficiently and fuel top performance. You can make the most of your athletic talents and gain more strength, power and endurance when you train and compete when you eat properly. Your diet will depend on a variety of factors including your age, size and physical condition; and the type of exercise or sports you are doing. See your doctor for individualized nutrition advice.

Hydration

Water is the most important factor in sports nutrition. It makes up about 60 percent of body weight and is involved in almost every bodily process. Your body cannot make or store water, so you must replace what you eliminate (i.e., urine, sweat). Everyone should drink at least two quarts (eight cups) of water each day, and athletes need more. Drink plenty of fluids before, during and after sports events to stay hydrated and avoid overheating. When you workout or compete, especially in hot weather, try to closely match the amount of fluid you drink with the amount you lose to sweat.

Cool water is the best fluid to keep you hydrated during workouts or events lasting an hour or less. Sports drinks (i.e., 6-10 percent carbohydrates) are useful for longer events. Most of these types of drinks should be diluted approximately 50 percent with water. Drink even if you are not thirsty. Thirst is not a reliable way to tell if you need water. You won't start feeling thirsty until you have already lost about 2 percent of body weight, which is enough to hurt performance. And if you stop drinking water once your thirst is satisfied, you will get only about half the amount you need.

Some tips for staying hydrated:

- Drink small amounts of water frequently, rather than large amounts less often.
- Drink cold beverages to cool your core body temperature and reduce sweating.
- Weigh yourself after working out and drink 2-3 cups of water for every pound lost. Your body weight should be back to normal before the next workout.
- Pay attention to the amount and color of your urine. You should excrete a large volume that is nearly colorless. Small amounts or dark colored urine can indicate dehydration.

Fuel sources

Eating a balanced diet is another key to sports nutrition. The right combination of fuel (calories) from carbohydrates, proteins and fats gives you energy for top performance.

Carbohydrates. The most important fuel source, carbohydrates come in fruits, vegetables, pastas, breads, cereals, rice and other foods, and should provide about 60-70 percent of daily calories. Your body converts sugars and starches in carbohydrates to energy (glucose) or stores it in the liver and muscle tissues (glycogen), giving you

endurance and power for high-intensity, short-duration activities. If your body runs out of carbohydrate fuel during exercise, it will burn fat and protein for energy, causing your performance level to drop. This can happen if you start exercising without much muscle glycogen, exercise heavily for more than an hour without eating more carbohydrates, do repeated high-intensity, short-duration exercises or participate in multiple events or training sessions in a single day. Use a carbohydrate strategy to stay energized and perform at your best:

- Eat carbohydrates for at least several days before exercise/competition, so you start with glycogen-loaded muscles.
- Eat more carbohydrates during exercise/competition lasting more than an hour to replenish energy and delay fatigue.

Proteins. Proteins come in meats, fish, poultry, eggs, beans, nuts, dairy products and other foods, and should provide approximately 12-15 percent of daily calories. Proteins give your body power to build new tissues and fluids, among other functions. Your body cannot store extra protein, so it burns it for energy or converts it to fat. The amount of protein an athlete needs depends in part upon level of fitness; exercise type, intensity and duration; total calories; and carbohydrate intake.

- Level of fitness: Physically active people need more protein compared with those who don't exercise. You also need more when you start an exercise program.
- Exercise type, intensity and duration: Endurance athletes often burn protein for fuel, as do body builders and others doing intense, strength-building activities.
- Total calories: Your body burns more protein if you don't consume enough calories to maintain body weight. This can happen if you eat too little or exercise too much.
- Carbohydrate intake: Your body may use protein for energy if you exercise with low levels of muscle glycogen or if you do repeated training sessions without eating more carbohydrates. When you start with enough muscle glycogen, protein supplies about 5 percent of energy. Otherwise it may supply up to 10 percent.

Fats. Saturated fats come in foods from animals (i.e., meats, eggs, milk, cheese, etc.) and unsaturated fats in some vegetable products (i.e., corn oil). Fats should provide no more than about 20-30 percent of daily calories. Your body needs small amounts of fat for certain critical functions and as an alternative energy source to glucose. But eating too much fat is associated with heart disease, some cancers and other major problems, and probably means you don't get enough carbohydrates. How your body uses fat for energy depends upon the intensity and duration of exercise:

- When you rest or exercise at low to moderate intensity, fat is the primary fuel source.
- As you increase exercise intensity, your body uses more carbohydrates for fuel.
- If your body uses up its glycogen supply and you keep exercising, your body will burn fat for energy, decreasing exercise intensity.

Pre-competition nutrition

What you eat several days before endurance activities affects performance. Your food the morning of a sports competition can ward off hunger, keep blood sugar levels adequate and aid hydration. Avoid high protein or high fat foods on the day of an event, as these can stress the kidneys and take a long time to digest. Empty your upper bowel by competition time. General guidelines:

1. Eat a meal high in carbohydrates.
2. Take solid foods 3-4 hours before events, and liquids 2-3 hours before.
3. Choose easily digestible foods (i.e., not fried).
4. Avoid sugary foods/drinks within one hour of event.
5. Drink enough fluids to ensure hydration (i.e., 20 ounces of water 1-2 hours before exercise, and an additional 10-15 ounces within 15-30 minutes of event.)

Replenishing fluids lost to sweat is the primary concern during an athletic event. Drink 3-6 ounces of water or dilute sports drink every 10-20 minutes throughout competition.

Carbohydrate loading

To avoid running out of carbohydrates for energy, some endurance athletes like long-distance runners, swimmers and bicyclists load their muscles with glycogen by eating extra carbohydrates in combination with doing depletion exercises several days before an event:

- First exercise to exhaustion. Your workout must be identical to the upcoming event to deplete the right muscles.
- Then eat a high-carbohydrate diet (70-80 percent carbs, 10-15 percent fat, 10-15 percent protein) and do little or no exercise starting three days before your event.
- Muscles loaded with unused glycogen will be available to work for longer periods of time during competition.