



Eating for the Big Game

Athletes and individuals who exercise are often concerned with improving their performance through nutritional regimes. Outlined below are the facts regarding some beliefs and practices.

Protein Consumption

Active individuals can meet their protein needs through a healthy diet. Protein supplements are usually expensive and unnecessary. Despite popular claims, exercise is the only way to increase and maintain muscle. If excess protein is consumed, it will be used as energy or stored as fat. It will not help build muscles. If an athlete stops exercising, muscle does not turn to fat, but gradually decreases in size. If the athlete continues to consume the same amount of calories, the excess will be stored as fat.

Fluid Replacement

The best beverage for fluid replacement during exercise lasting less than one hour is plain water. Sports drinks containing 6-8% carbohydrate are only useful during strenuous endurance events lasting longer than one hour when muscle and liver glycogen (or carbohydrate) stores start becoming depleted. These bev-

erages are also promoted as electrolyte replacements because they contain sodium and potassium. The amount of these minerals actually lost during most exercise is small and can easily be replaced by a normal meal.

Endurance events, especially in hot weather, can lead to dehydration. The exact cause of cramps during exercise is not firmly understood, but it is believed to be from dehydration and not from fluid intake. Thirst is not a good indicator of fluid needs because it kicks in after the body is already slightly dehydrated.

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Drink two cups of water two hours before exercise and another cup 15-30 minutes before exercise. Drink small amounts, approximately half a cup, every ten minutes during exercise. Weigh yourself before and after vigorous exercise, and gradually drink three cups of water to replace every pound of fluid lost.

Pre-game Meals

Contrary to popular belief, there is no special pre-game meal that one needs to consume to increase performance. To allow adequate time for digestion and prevent stomach discomfort, an athlete's final meal should be eaten three to four hours before exercise. This meal should be low in fat, moderate in protein, and high in complex carbohydrates.

Carbohydrate Loading

Carbohydrate loading basically calls for a very high carbohydrate intake two to three days prior to an event, along with a reduction in training. This regimen "tricks" the muscles into storing more carbohydrate (or glycogen) for endurance. It is only helpful for athletes who are competing in events that last longer than one hour. The best plan is to eat a well-balanced, high carbohydrate, low-fat diet on a daily basis.

What Should My Diet Consist Of?

Basically, the dietary needs of athletes are the same as those of other healthy individuals, with a few exceptions. Active individuals have a higher need for calories and water. These extra calories should come from a well-balanced diet that is low in fat, adequate in protein, and high in complex carbohydrates. This will ensure athletes receive all the vitamins and minerals their bodies need. The distribution of nutrients in the athlete's diet should be 45%-65% carbohydrate (60% -70% for endurance athletes), 20-35% fat, and 10-35% protein.

For more information on sports nutrition, please visit www.snac.ucla.edu.



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IS THERE AN IDEAL DIET FOR MAXIMUM ATHLETIC PERFORMANCE?

Dietary needs of athletes are essentially the same as those of other healthy individuals, with the exception of a higher need for calories and water. The distribution of calories in an athlete's diet should be 45-65% carbohydrate (60-70% for endurance athletes), 20-35% fat, and 10-35% protein.

Carbohydrates

Carbohydrate is the body's preferred and most efficient source of fuel. For short, high-intensity activities (like sprinting and weight lifting), carbohydrate is the only fuel source the muscles will use. For long, low- to moderate-intensity activities (like long distance running or cycling), fat is used along with carbohydrate, but when carbohydrate stores (i.e., liver and muscle glycogen) run out, the athlete can no longer perform, regardless of fat stores. Therefore, to maximize performance and glycogen levels, the largest portion of an athlete's diet should consist of high-quality carbohydrates from foods such as vegetables, fruits, whole grains, beans, and low-fat milk and yogurt. Before exercise, eat a high carbohydrate meal or snack that settles well. During strenuous events that last longer than one hour, drink a sports drink with 6-8% carbohydrate to maintain energy levels (15-20g of carbohydrates per 8 oz. serving). Immediately after exercise, consume a carbohydrate-rich meal or beverage to replenish glycogen stores.

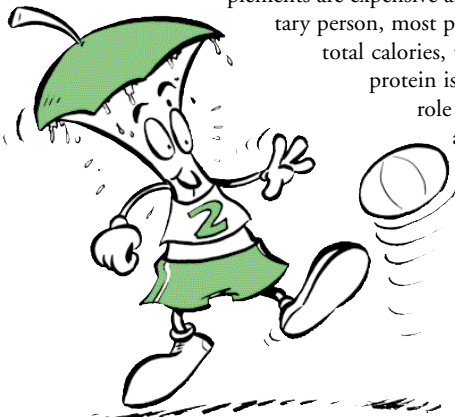
Fats

Excess calories, whether from carbohydrate, protein, or fat, are stored as fat in the body. Fat stores are the primary source of energy for long, low- to moderate-intensity activities. During the beginning minutes of exercise, the body relies on carbohydrate for energy. As exercise continues, the body begins to use fat stores as well. Fat is the most abundant form of stored energy in the body. While the average lean athlete only has 1,600 calories of stored carbohydrate (as liver and muscle glycogen), he/she has 60-100,000 calories of stored fat. The meal eaten prior to exercise should be low in fat because fat takes a long time to digest (3-4 hours). A healthy diet should contain no more than 35% calories from fat. Saturated fats, found in whole milk and cheese, meats, butter, and hydrogenated vegetable oils, should be limited to less than 10% of total calories.

Proteins

Contrary to popular belief, excess protein does not build muscle. The only way to build and maintain muscle is through resistance exercise in combination with adequate nutrition. Protein drinks and amino acid supplements are expensive and unnecessary. While athletes do need more protein than the average sedentary person, most people already eat about twice as much as they need. Because athletes eat more total calories, they also consume a higher total amount of protein as well. This amount of protein is more than adequate to meet the needs of most athletes. Protein has a minor role as an energy source. It is only used when carbohydrate and fat are not available. The major function of protein is to build, maintain, and repair tissue. Protein is found in many foods such as beef, poultry, fish, eggs, beans, milk and soy products, vegetables, bread, cereals, and pasta.

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Are Salt Tablets or Sports Drinks Necessary?

The amount of sodium lost through perspiration is minimal compared to fluid losses, and it can easily be replaced by eating a regular meal. Salt tablets are unnecessary and can be harmful. They can cause dehydration by drawing water away from the body tissues. An excessive salt intake can also put an extra burden on the kidneys. Sports drinks are often promoted as electrolyte replacements since they contain sodium and potassium. The amount of these minerals lost during most types of exercise is small. The real benefit of sodium in sports drinks is that it induces a greater thirst sensation so athletes drink more. Sports drinks can be expensive, and they offer no real benefit over plain water during physical activities lasting less than one hour. If exercising more than one hour, the carbohydrates in sports drinks are helpful for replenishing muscle fuel.

Will Vitamins Give Me an Extra Edge in Competition?

Vitamins do not contain calories and, thus, do not provide energy directly. They are involved in the reactions that transform carbohydrate, protein, and fat in foods to usable energy. There is no evidence to support the claim that vitamins improve physical performance or increase strength or endurance in people who do not have a vitamin deficiency. Many people believe that if a few vitamins are good, more will be better. This is not true. A high dose of vitamins can cause detrimental effects. Vitamin and mineral requirements of active individuals are similar to those of sedentary individuals. And, since athletes tend to eat more food, they can easily obtain all the vitamins and minerals they need by eating a well-balanced diet.

Do Sports Supplements Enhance Performance?

The sports supplement industry is a booming, multimillion-dollar business that thrives on athletes' hopes and aspirations to "burn more fat," "build more muscle," and "run faster and longer." These supplements are not tightly regulated by the government. They have not been proven safe, effective, or pure, despite the manufacturers' claims. The safest bet is to remember that if a claim *sounds* too good to be true, it probably *is* too good to be true. Nothing can replace a sound exercise and nutrition plan for maximizing athletic performance.

Train, Don't Strain

This saying now replaces the old belief of "no pain, no gain." To receive the benefits of exercise, it is not necessary to push yourself to the point of exhaustion or pain. Pain is your body's way of telling you to slow down. Hurting yourself is only going to delay your exercise plans. Begin slowly and gradually build up endurance. Brisk walking, jogging, and other fun activities such as basketball and swimming are excellent ways to exercise and experience health benefits as well.