Dietary Supplements

Athletes want the "edge" in competition. Contests can be won or lost by a fraction of a second, and dietary supplements are often promoted as the way to win. The best "supplement" to training, however, is a good diet that includes frequent meals with quality carbohydrates, lean protein, heart-healthy fats, and adequate fluids.

Some dietary supplements can help boost nutrient intake, allow athletes to recover more quickly from a hard workout, or provide fuel and fluid needed during long endurance events. But how do you sort through the claims of the thousands of supplements on the market?

Things You Should Know

- Dietary supplements are not well standardized—what the package says and what the product actually contains can be very different.
- Dietary supplements are not well regulated by the Food and Drug Administration (FDA).
- Supplements can go to market without any proof that they work or that they are safe.
- Sports governing bodies (such as the NCAA, IOC, and professional sports organizations) publish lists of banned substances, but they do not provide lists of specific supplements that contain banned ingredients.
- If you take a supplement and you are not aware that it contains a banned substance, you will still be sanctioned. Claiming that you did not know that the supplement contained a banned substance is not a defense that will be accepted by your sports governing board.
- "Natural" does not equal safe. A "natural" supplement can contain banned substances.
- It is important that you learn to be a critical consumer of advertisements for supplements and learn to read supplement labels. Ask a sports dietitian to help you determine whether a supplement will help your performance and whether taking it could lead you to risk losing eligibility or a hefty fine.

Supplements That May Work for You

Energy Bars and Gels

- Energy bars and gels can provide additional calories for busy athletes with high energy demands.
- Choose an energy bar that provides more carbohydrate than protein or fat.
- Gels can give athletes extra carbohydrate for endurance events like cross country skiing, triathlons, marathons, and road cycling.
- Gels are concentrated carbohydrate sources and should be consumed with water to avoid stomach upset.

Sport Drinks

- Sport drinks that contain between 6% and 8% carbohydrate (14 and 19 grams carbohydrate per 8 ounces) can provide fluid, carbohydrates, and electrolytes lost in sweat.
- Use sport drinks for endurance events, for events in hot, humid conditions, and for stop-and-go sports that require quick bursts of activity.

Creatine

- Creatine is a substance found in meat and fish in small amounts. It is stored in muscle as creatine phosphate (also called "phosphocreatine") and helps your body to regenerate the fuel known as adenosine triphosphate (ATP).
- Creatine supplements can increase lean body mass, and they may help athletes in high-intensity, short-duration (less than 30 second) activities.
- Creatine may help you to recover from weight training sessions, which could help you train harder.

- Creatine monohydrate powder is a common creatine supplement. A typical dose is 3 to 5 grams per day. Loading up on more than 3 to 5 grams per day does not give you extra benefits.
- Creatine is not recommended for endurance athletes. It can cause weight gain, and that could hurt an endurance athlete's performance.
- Creatine is not recommended for athletes younger than 18 years.

Caffeine

- Caffeine stimulates the central nervous system. If you need a cup of coffee in the morning to wake up, you know what caffeine does.
- Caffeine can make exercise seem less difficult.
- You probably need 2.3 to 2.7 milligrams of caffeine per pound of body weight (5-6 mg/kg) to get the effect you want. For a 150-pound athlete, that equals 340 to 400 milligrams of caffeine. You can get that much caffeine from coffee, caffeinated soft drinks, or caffeine-containing pills.
- Read the label before using caffeine pills. Pills are a concentrated form of caffeine and may contain other banned stimulants (such as guarana, synephrine, or ephedra).
- Caffeine is a controlled substance for college athletes. If you compete at the college level, you should be very careful about using caffeine pills because they can contain enough caffeine to cause a positive drug test.
- The side effects of caffeine, especially if you are not a regular user, include an increased heart rate, anxiety, nervousness, insomnia, and gastrointestinal problems like nausea and diarrhea.

Supplements to Avoid

- Dehydroepiandrosterone (DHEA) is banned by many sports governing bodies, and its safety and efficacy have not been proven.
- The Anabolic Steroid Control Act of 2004 classified androstenedione and 48 other prohormones as controlled substances.

Unproven Supplements

The following supplements have not been proven to be effective for athletes:

- Chromium
- Pyruvate
- Ribose
- Vanadyl sulfate

Supplements With Potential Benefits

The following supplements may be effective for some athletes:

- Branched-chain amino acids (BCAA) to help boost immune function in endurance athletes
- Glucosamine/chondroitin sulfate for relieving joint pain and increasing your range of motion
- Glutamine to reduce exercise-induced stress in endurance athletes
- Vitamin E to reduce soreness that can occur in endurance events
- Protein powders for strength athletes who cannot meet their calorie and protein needs from food

The following supplements may prove to be beneficial, but more research is needed:

- Conjugated linoleic acid (CLA) to improve body composition through weight or fat loss or increased muscle mass and strength
- S-adenosylmethionine (SAMe) for arthritis
- Antioxidants (beta-carotene, vitamins E and C, selenium) for endurance athletes to reduce oxidative stress of exercise