

FitFacts®



Supplement Specifics

PERFORMANCE-ENHANCING SUBSTANCES, ALSO CALLED ERGOGENIC AIDS, ARE SURROUNDED BY CONTROVERSY. HOWEVER, NOT ALL OF THEM ARE BANNED. THERE ARE A FEW THAT ARE LEGAL IN ATHLETIC COMPETITION. BUT JUST BECAUSE THEY'RE LEGAL, DOESN'T MEAN THEY WORK OR ARE NECESSARILY SAFE.

Remember, supplements are not regulated by the [U.S. Food and Drug Administration \(FDA\)](#) and you should consult with your physician or a registered dietitian if you are considering taking a supplement.

The following is a review of the most common legal ergogenic aids.

CAFFEINE

The popularity of caffeine is widespread. Caffeine is found naturally in foods like coffee, tea and chocolate. Energy drinks containing high doses of caffeine have grown in popularity over recent years. Up until 2007, caffeine was banned by the World Anti-Doping Agency, but now is allowed in almost any amount.

Research has consistently shown that caffeine improves performance in endurance-type activities like running or cycling by reducing the mental feeling of fatigue and prolonging time to exhaustion. Think about it: How many people wake themselves up in the morning with a cup of hot java? The same concept can be applied to exercise. A dose of 400 to 600 mg is usually enough to produce benefits, but the amount needed varies according to your habitual use. People who use caffeine regularly may find that the effect wears off as they develop a tolerance. For most people, caffeine does not have many serious side effects. But don't take it for granted; caffeine is still a form of a drug, and toxicity can occur (typically in response to an overdose of caffeine pills) and has serious and potentially fatal health consequences.

CREATINE

[Creatine](#) is one of the most popular supplements. It is used by athletes who perform short bursts of activity in sports like jumping, sprinting and weightlifting. Creatine is naturally manufactured by the body. It works to replenish an important energy pathway that typically lasts up to 15 to 30 seconds after beginning activity. A good body of research proves that creatine is useful for increasing strength, power output, muscle mass and high-intensity exercise performance.

The short-term side effects of creatine are mild and no significant long-term side effects are currently known.

CARNITINE

Carnitine is a substance found naturally in the body that helps move fat into the mitochondria, the fat-burning department of the cell, where it is broken down to produce energy. Since carnitine plays such a central role in burning fat, supplement manufacturers claim that taking more carnitine will help you burn more fat. Others claim that it is important for muscular function and athletic performance. The good news is that at the recommended doses, carnitine does not appear to have any serious side effects. The bad news is that despite years of research, there is no reliable evidence that carnitine supplementation contributes to weight loss or improved athletic performance.

American Council on Exercise® is a nonprofit organization dedicated to empowering people to live their most fit lives. In addition to offering quality certifications and education for fitness professionals, ACE also protects the public against ineffective products, programs and trends by arming them with unbiased, science-based health and fitness information. To learn more about ACE, or how you can use or purchase Fit Facts, visit ACEfitness.org/FitFacts.

AMINO ACIDS AND WHEY PEPTIDE PROTEINS

Protein supplementation is a popular practice by athletes. Athletes have greater protein needs than the average individual due to increased levels of muscle growth and higher energy needs. However, this amount is generally met through the normal diet. There is also evidence that a combination of protein and carbohydrates consumed following a workout may help build muscle and aid recovery. There are other supplementation practices that involve specific amino acids, the units that make up protein.

Whey Peptide Proteins—Whey peptide proteins are a collection of proteins derived from the manufacture of cheese from cow's milk and are a concentrated source of quality protein. They are often used to accelerate muscle development, aid in recovery and potentially manage degenerative, immune and metabolic diseases.

Branched Chain Amino Acids (BCAAs)—BCAAs may improve endurance activities by reducing fatigue, but so far, research in this area demonstrates mixed results.

Glutamine—Glutamine is used to combat muscle breakdown and improve recovery from exercise. Athletes suffering from overtraining syndrome may show lower levels of circulating glutamine, hence the argument for supplementation. However, the results of research on this amino acid are mixed.

Arginine—Arginine is useful for individuals who have growth hormone deficiencies and urea synthesis problems, but research does not support any additional benefits from supplementation.

ADDITIONAL RESOURCES

[Consumer Lab](#)

[World Anti-Doping Agency](#)