

Supplements and Athletic Performance

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Most supplements advertised to enhance athletic performance do not work and their claims exceed reality. The few products that do work typically only do so when an athlete is lacking nutrients from their diet and taken carefully. Also, some supplements are banned by the NCAA and can be very dangerous if not used properly. Some of the more popular and safe supplements are discussed below, with tips to help you decide if taking them is right for you.

Creatine

What is creatine?

Creatine is a naturally occurring compound found mostly in muscle and can be made by the body. During high intensity exercises, such as sprinting or weightlifting, energy is lost quickly, and creatine can help restore the lost energy. It is believed that if an athlete provides their muscles with creatine they will have a better capacity to maintain high levels of energy and delay fatigue.



Should I take creatine?

Creatine supplementation is meant to enhance short and intense exercise, meaning they work best for an athlete involved in quick bursts of energy. Sprinters, power lifters, football players and any other athlete involved with high intensity exercise may see benefits from supplementing with creatine. Marathon runners, triathletes, cross country runners or any athlete engaged in low intensity aerobic exercises will see no added benefit from taking creatine. Creatine is normally associated with weight gain, both

muscle mass and water. If an athlete doesn't want to put on excess weight, creatine supplementation should be avoided. In order to get the full benefits of creatine, an athlete should take between 10-28 grams per day for five days followed by a five-day break from supplementing.

Pre-workout Powders

What do pre-workout supplements do?

Pre-workout supplements are a class of products designed to be taken before a workout or an

athletic event and claim to give you more strength and energy. The typical pre-workout is a mix of several different ingredients with the vast majority of them having no effect on athletic performance. The main ingredient found in the majority of pre-workouts is caffeine, which provides the feeling of alertness and increased performance many athletes claim they get when they ingest a pre-workout supplement.



Should I take a pre-workout supplement?

There is very little evidence showing any effectiveness when taking a pre-workout supplement beyond what is seen with caffeine supplementation (see Caffeine, Page 3). The other ingredients in most pre-workout supplements may increase blood flow for a short amount of time, but this does not improve strength or endurance.

BCAAs

What are BCAAs?

BCAAs (branched-chain amino acids) are a group of amino acids that play a role in building muscle and when glucose levels are low can also be used as a fuel source. BCAAs are not made naturally by the body and must be eaten. BCAAs can be found in animal products, especially chicken, beef and fish.

Should I take BCAAs?

Consuming BCAAs before, during, or right after a workout may promote muscle growth and repair and delay fatigue. Although similar to protein, more BCAAs do not always mean more muscle growth and repair. Since BCAAs are part of all animal proteins, if you already get enough protein from your diet or consume protein after you exercise, you do not need more BCAAs from a supplement. They would be most appropriate for vegetarians or if you exercise before breakfast and/or do not have access to protein afterwards. BCAAs are not for every workout as they are most effective during intense bouts of exercise. The most important part of taking BCAAs is timing. Taking 3-5 grams of BCAAs right before or during exercise is best if you have access to

a meal after exercise. Taking them after exercise is best if you do not have food available. About 3-5 grams typically is found in a 3-4 ounce serving of meat.

Beta-alanine

What is Beta-alanine?

Beta-alanine is a form of an amino acid found in most pre-workout powders. Beta-alanine increases muscle carnosine levels, which may improve high-intensity exercise capacity. Beta-alanine causes tingly feelings when taking pre-workout powders, although this is a normal and safe side effect that goes away shortly.

Should I take Beta-alanine?

One dose of beta-alanine does not improve athletic performance. To see any benefit,

one must take 3-6 grams per day for up to one month. After which, taking 2-3 grams before high-intensity exercise such as weightlifting or sprinting only slightly increases the intensity you can exercise. Similar to creatine, beta-alanine does nothing for endurance athletes because these sports do not exercise at high-enough intensities (longer, slower running as opposed to short sprints).

Caffeine

What is caffeine?

Caffeine is found naturally in coffee, tea, dark chocolate, and a variety of other foods and beverages. Caffeine is a central nervous system stimulant. It

may be useful for athletic performance by making more fatty acids available for energy and stimulate the brain, improving alertness and reaction time and delaying fatigue.

Should I take caffeine?

Caffeine consumed at approximately 250 milligrams appears to aid performance in both long endurance activities and short duration exercise. Some of the potential problems with excess ingestion of caffeine are irritability, insomnia, and anxiety. Since we adapt to caffeine intake, frequent use will take away any improvements in athletic performance. Therefore, it is important not to take too much caffeine or too often.

References

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