Dear Alice,

Do amino acids work for muscle building? If so, which ones should I use? Are supplements just a rip-off?

Answer

Dear Reader,

When it comes to supplements, which ones are safe and effective can be difficult. Unfortunately, there is a lot of mixed information on supplements in general, but this becomes clearer cut when focusing on specific amino acid supplements. To date, the U.S. Food and Drug Administration (FDA) isn't authorized to regulate supplements as safe or effective, whether they be amino acids, vitamins, minerals, herbal preparations, or any other botanical preparations. However, research suggests that whey protein (a supplement with a combination of amino acids) is effective at rebuilding muscles after strenuous physical activity, while creatine can help improve endurance. But buyer beware, as the dietary supplements are not regulated by the FDA, neither the supplements nor their advertising are well regulated on the market. Moreover, no supplements are meant to replace food, as a balanced diet is typically capable of providing people with all the nutrients and amino acids they need. With all this in mind, it's best to speak with a medical provider, specifically a registered dietitian, before using any supplements.

Athletes and bodybuilders often take supplements with specific branched chain amino acids (BCAAs) - leucine, isoleucine, and valine - in hopes of improving their muscle recovery, preventing fatigue, enhancing their physical strength, and improving their endurance. Despite the fact that all BCAAs are marketed to stimulate muscle building and reduce the rate of muscle breakdown, only whey protein has been shown to be able to do so. Currently, there is no conclusive evidence suggesting any other BCAA supplements are effective at preventing fatigue, improving concentration, restoring appetite, and reducing muscle waste. Research suggests that consuming these dietary supplements for improved athletic performance may not actually improve results in the weight room, on the court, or on the field. However, supplements may be helpful for people with certain nutrient deficiencies or dietary restrictions.

Despite the limited research supporting amino acid supplements, there is one that has shown promising results for athletes. Creatine, which is made in the liver and pancreas from the amino acids arginine and glycine, has been shown to increase athletes' physical endurance.
and recovery times. Together, this effect has helped athletes gain more muscle than they would from their traditional diets and training regimens alone.

The great news is that most people are able to obtain sufficient nutrients and calories solely from a balanced diet. For people who engage in strenuous activity and need a substantial amount of BCAAs, a diet rich in protein provides the body with the fuel it needs. In fact, the U.S. Anti-Doping Agency (an organization which oversees sports competitions) states that athletes need only to eat a wide variety of foods and drink enough fluids to reach their full performance potential. Luckily, amino acids can be obtained from foods, including:

- **Meats**: red meat, pork, poultry
- **Seafood**: fish
- **Dairy**: eggs, milk, yogurt, cheese
- **Grains**: quinoa
- **Legumes**: lentils, black beans, and pinto beans
- **Nuts and Seeds**: cashews, almonds, pumpkin seeds

In any case, talking with a registered dietitian or health care provider about supplements and steering clear of potentially unsafe or ineffective products on the market is a good first step in making decisions that are best for you. Kudos for whey-ing the pros and cons of taking supplements before your next workout session!

Alice!

**Category:**
- Nutrition & Physical Activity
- Optimal Nutrition
- Supplements & Ergogenic Aids

**Related questions**
- Dietary supplements: Are they a good idea?
- Food for muscle regeneration and healing?
- Different nutrient and energy requirements for endurance and resistance athletes
- Recommended dietary allowances (RDAs) of nutrients?

**Resources**
- Columbia Health Nutrition Services (Morningside)
- Medical Services (Morningside)
- Student Health Service Nutrition Services (CUMC)
- Medical Services (CUMC)

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