CREATINE SUPPLEMENTS

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CREATINE SUPPLEMENTS: THE BASICS  
Creatine supplements are popular among athletes and Service Members trying to enhance their strength and muscle size. Unlike many other supplements, there is considerable evidence that taking creatine supplements might result in greater gains in body mass and strength when combined with resistance training. However, not all athletes or Service Members will experience the same benefits from consuming creatine supplements, especially those focused on endurance training. And although there are few safety concerns associated with creatine, it s still important to use it under the guidance of a healthcare provider.  
  
What is creatine, and how does it work?  
Creatine is a compound made in your liver, kidneys, and pancreas. You also get creatine from foods such as red meat and fish, as well as some dietary supplements. Creatine is primarily stored in your muscles in the form of phosphocreatine. Phosphocreatine is the initial energy source for all exercise and the preferred source for explosive movements such as lifting heavy objects, jumping, and short sprints. As such, creatine monohydrate supplements are widely used to increase strength performance. In theory, supplementing the diet with creatine monohydrate increases muscle stores of creatine, which then serve as a larger supply of immediate energy to delay fatigue and enhance performance.  
  
Can creatine improve performance for all athletes and Service Members?  
Some athletes and Service Members might benefit from creatine supplements more than others, because individuals respond differently to creatine ingestion depending on a number of factors such as diet. There are both high and low responders. For example, since creatine in the diet is predominately found in meats, vegetarians are more likely respond well to creatine supplementation because they tend to have lower levels in their muscles.  
  
Although individual responses to creatine supplementation vary, creatine can have a positive effect on strength, power, sprint performance, and muscle mass in athletes who engage in resistance training. Evidence is limited that creatine supplements enhance aerobic performance such as endurance events. Creatine monohydrate supplements also might reduce the strength loss and minimize the exercise-induced muscle damage often experienced by athletes who participate in both strength and endurance activities. Although few side effects have been noted, one well-known side effect is an increase in body mass (weight gain).  
  
Is one type of creatine better than others?  
The most-studied form of creatine is creatine monohydrate, but there are many other forms of creatine available in dietary supplement products on the market, including creatine ethyl ester, creatine magnesium chelate, micronized creatine, creatine hydrochloride (HCl), and creatine malate. Although these other forms are often marketed as being better absorbed by the body, minimizing water retention, or having a greater effect on performance, the research to support these effects is limited.  
  
How is creatine typically used?  
Taking creatine monohydrate in amounts as little as 3 g per day for 28 days has been found to be safe and effective at increasing creatine levels in the muscles and improving strength, although effects are gradual. More research is needed on the long-term (greater than 5 years) health effects of creatine supplementation. Many scientific studies have used loading doses, which start with 20 g of creatine monohydrate per day (broken up into four 5 g doses spaced evenly throughout the day) for 5 7 days, followed by a maintenance dose of 3 5 g per day for several weeks to months without reports of serious adverse events. People often experience weight gain early on during supplementation due to water retention.  
  
Debrief  
When combined with resistance training, creatine supplementation might help some athletes and Service Members increase muscle mass and strength. However, those focused on endurance training will not experience the same improvements in performance, and the increase in body weight sometimes associated with creatine supplementation might even impair endurance.  
  
If you choose to use creatine supplements, look for creatine monohydrate on the Supplement Facts panel, and choose a product that has been certified by a third-party organization. Also, use it only under the supervision of your healthcare provider. A registered dietitian (RD) who specializes in sports nutrition can provide personalized information to meet your performance goals. (Look for RDs with the credentials CSSD [Board Certified Specialist in Sports Dietetics].) Finally, for teens, be aware that there isn t enough research to determine the safety and effectiveness of creatine supplements in those under 18.