



Sport Nutrition

Tip of the Month | January 2011



Protein & Related Sports Supplements

Athletes need more protein than inactive individuals. While high quality food sources (milk, meat, eggs, cheese, soy) can easily meet their protein needs, athletes often turn to popular protein supplements as a quick fix. They may also be confused about the effectiveness and appropriate use of other amino acid supplements, such as L-glutamine, creatine, and possibly “weight-gainers.”

Examples of Protein Rich Foods

Meat, fish, poultry, eggs, cheese, cottage cheese, tofu, nuts, nut butters, milk, yogurt and legumes (kidney beans, lentils, chickpeas, etc.)

Protein is an essential nutrient needed for growth and development, to maintain muscle, to produce hormones, enzymes, red blood cells and white blood cells/ immune system. Dietary protein is required on a daily basis, especially on days of physical training. Supplemental protein (in powders, bars and drinks) is not superior to protein-rich foods, especially since many protein supplements lack essential carbohydrates, vitamins (e.g. B-vitamins) and minerals (e.g. iron, calcium, zinc) found in natural foods, hence the use of **supplemental** protein as an “extra” rather than as a **replacement** in meals. Individually, athletes should have their diet assessed by a Registered Dietitian who specializes in sports nutrition to determine if extra protein is warranted. A dietitian will design a customized meal plan that ensures optimal energy, protein, carbohydrate and fat are balanced to meet desired body composition and training goals.

Protein supplements, in the form as whey, casein and soy, offer a portable, convenient source of protein and calories for exercise recovery or a bedtime snack, especially when combined with a mixture of milk/soy drink, fruit, yogurt/ice cream and/or possibly juice. In comparison, 125 ml (1/2 cup) of dried skim milk powder provides the same amount of protein as 1 scoop of most whey powders; skim milk powder also contains both whey and casein proteins.

If building muscle is an athlete’s personal goal, be aware that a high protein diet or protein supplements alone are not the answer. Instead, to gain muscle athletes require enough calories (energy) from fibre-rich carbohydrates, and healthy fats, in addition to adequate high quality protein, and regular strength training, i.e., 2 – 3 times a week.



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Excess protein from the diet and/or supplements will be either used for extra energy (if calories are too low), excreted as waste, or potentially stored as body fat; excess protein can also be dehydrating unless ample fluids are consumed.

Popular “weight-gain” types of supplements usually provide 600-1200 calories (or more) per serving and while convenient, they are expensive and not recommended for young athletes. Most weight-gainers contain a combination of protein, carbohydrates, and fat with or without added vitamins and minerals. Consider this less expensive, quick and easy recipe:

What is...

L-Glutamine

The most abundant non-essential amino acid in our body is L-glutamine. It has received popularity with athletes since research has found that during times of exhaustive exercise glutamine levels in the blood are reduced. It is inconclusive if supplemental glutamine helps to reduce post-exercise muscle soreness and/or boosts the immune system. Protein-rich foods contain sufficient glutamine (e.g. 4 ounces (120 g) meat, fish or poultry = 4000-5000 mg glutamine). Milk, soy beverage, tofu, legumes (i.e., kidney beans, chickpeas, baked beans) and nuts also provide glutamine and help keep the immune system strong.

Creatine

Supplemental creatine has been used by athletes for decades, usually under the premise of building muscle. While indirectly it may help promote muscle gains, specifically creatine works by restoring energy (ATP) faster than normal recovery between high intensity exercise efforts. Therefore, if an athlete can recover faster after lifting a set of weights, or recover faster between sprint intervals, they may in turn be able to do more training and subsequently build muscle. But it's not all great news. There is no research to conclude if creatine is safe to take by those under 18 years of age. Also, some athletes may experience weight gain/water retention, and increase the risk of tearing tendons or ligaments. This “short cut” to building mass is not a quick fix solution to training hard and eating well.

Homemade High-Protein Shake:

50 ml (1/4 cup) dried skim milk powder
OR 1/2 scoop of whey
1.5 cups ice cream
1.5 cups 2% milk
1 banana
2 Tbsp chocolate syrup

Blend for less than 1 minute

1 serving = 953 calories, 35 g protein, 139 g carbohydrates, 28 g fat



While product manufacturers may make grandiose claims about the benefits of supplemental protein and related supplements, it is strongly recommended that athletes seek expert dietary advice by a sport dietitian before reaching for these or other dietary supplements.

