[IMAGE]

# The Whey to Go for Athletes

By Robert Silverman, DC, MS, CCN, CSCS

Athletes should consume whey protein, particularly whey protein isolate, as it is an excellent protein source for muscle recovery. Whey protein typically falls into two types: whey protein concentrate and whey protein isolate. Whey protein concentrate consists of protein (25-80 percent), lactose (4-8 percent) and fat (1-7 percent). This is the supplement form commonly found in health and nutrition stores. In contrast, whey protein isolate is the purest form of whey protein, containing anywhere from 90-95 percent protein, with virtually no lactose or fat.

The additional process of cross-flow micro-filtration removes the impurities, yielding 8 percent more denatured protein while excluding remaining fats. The next step of adding whey protein hydrolysate allows for rapid utilization and excellent absorption.

**What Is Whey Protein?**

Whey proteins are high-quality proteins naturally found in cow's milk. Milk contains two major proteins: casein and whey. The latter comprises about 20 percent of the total milk protein, which is more soluble than casein and has a higher protein quality rating. Whey is also a rich source of branched-chain amino acids, leucine, isoleucine and valine. Whey protein contains all of the essential and non-essential amino acids needed by the body; it is a complete protein.

**Which Whey?**

athletes - Copyright â Stock Photo / Register Mark The process of creating whey protein starts as cheese making. All milk should be from organic, grass-fed cows (high in omega-3 to omega-6 fatty acid ratio). Corn-fed cows produce high amounts of omega-6 fatty acids, which are inflammatory. Unfortunately for most of the nutritional supplement industry, corn-fed cows are the source of whey protein. Beware! This is the reason I only recommend third-party certified companies that validate this grass-fed process.

**Whey Protein for Sports Nutrition**

The amino acid profile of whey protein is almost identical to that of skeletal muscle. Its high concentration of branched-chain amino acids (BCAAs) help to maintain and repair lean muscle tissue following exercise and prevent muscle breakdown. These BCAAs help to prevent fatigue during intense, long-duration sports events. Leucine, which is found in abundance in whey protein, helps to stimulate protein synthesis and maintain a positive nitrogen balance to enhance muscle repair and recovery.

Whey protein can be effective when combined appropriately with exercise. Whey protein consumption post-workout may be one of the most beneficial things one can do to maximize lean body mass. It is low-glycemic, but insulinogenic at the same time. This creates a unique opportunity for muscle growth without fat gain, especially in a post-workout setting.

The addition of an appropriate amount of carbohydrate with whey is beneficial in terms of muscle gains. In studies analyzing post-workout intake of protein alone, carbohydrates alone or a combination of both, protein and carbohydrates together generated the greatest insulin response. This enhances muscle glycogen synthesis, glucose uptake and protein synthesis.

**How Much Whey?**

Research indicates consumption of 20 grams of whey protein is ideal post-workout:

- For a power workout (e.g., weight-lifting), the appropriate ratio is 2:1 carbs to protein.
- For a team sport (e.g., lacrosse) the appropriate ratio is 3:1 carbs to protein.
- For an endurance workout (e.g., cross-country distance running), the appropriate ratio is 4:1 carbs to protein.

The optimal window of opportunity for absorption of all the carbs/protein is within *30 minutes* of completing an athletic endeavor completion.

**Additional Benefits of Whey**

Whey protein provides an excellent source of cysteine, enhancing glutathione status, which optimizes immune function. Additionally, it aids in recovery from eccentric exercise.

**Take-Home Points**

Whey protein provides an excellent source for muscle recovery from athletic activity. This occurs as a result of whey protein yielding high levels of branched-chain amino acids (BCAAs) and aiding in protein synthesis. The purest form is whey protein isolate from organic grass-fed cows (third-party certified). The consumption of proper ratios of whey protein and carbohydrates remains critical to ensure muscle recovery and performance. It's the *whey* to go for athletes.

*Editor's note*: Tap here to review complete resources utilized in the compilation of this article.

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