



Understanding protein powder supplements

by Bijal Thoda

The human body needs protein every day in order to build, maintain, repair, and regenerate muscle mass and tissue. Most varied diets, including vegan diets, contain plenty of protein through whole foods such as lean meats, poultry, seafood, beans, lentils, soy, low fat dairy, nuts, and seeds. Still, some people like to supplement their protein intake, or occasionally substitute a fast, easy protein shake for a meal. But not all protein powders are the same. And in some cases, taking a protein powder supplement isn't such a good idea.

Research has shown that in addition to fostering muscle strength and development, taking protein every day can

boost your immune system health, facilitate healing after surgery or an injury, and promote healthy skin. Ideally you should consume protein as part of a whole food but a healthy boost of protein by supplement first thing in the morning can stabilize your blood sugar levels throughout the rest of the day.

There are four basic sources of protein powder: whey (from milk), egg, soy, and rice—these protein powders are available in powdered form in various combinations of these sources. You can mix the powders with water, fruit juice, milk, or yoghurt. Or you can sprinkle them on cereal, stir into soups or stews, and cook them into baked goods.

Whey protein as the choice of bodybuilders

When milk curdles, its proteins separate into a liquid (whey) and solid (casein). While casein forms cheese, whey is processed to isolate its proteins. Thus whey protein is a liquid by-product of cheese production. Proteins constitute approximately ten percent of the total dry solids within whey.

Whey has dominated the bodybuilding world because of its quick digestibility and its high bioavailability, which allows the protein to become available for muscle building very quickly. It's a popular protein supplement choice pre and post workout to help increase levels of amino acids in the blood, which fuel muscles and stimulate protein synthesis and thus can speed muscle recovery.

In addition, during exercise, whey helps open up blood flow by inhibiting an angiotensin-converting enzyme that originally constricts blood vessels; this allows better flow of nutrients to necessary areas to help repair and rebuild muscle tissues.

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Loads of benefits

The use of whey protein as a source of amino acids and its effect on reducing the risks of diseases such as heart disease and cancer is the focus of ongoing research. Studies suggest that large amounts of whey protein can increase cellular glutathione levels, an antioxidant that defends the body against free radical damage and some toxins, and hence milk proteins might reduce the risk of cancer.

Whey is loaded with branched-chain amino acids, glutamic acids, cysteine, immunoglobulins, lactoferrin, alpha-lactalbumin, and glycomacropetides, which all contribute significantly to our immune system.

Whey protein typically comes in three major forms: concentrate, isolate, and hydrolysate. Concentrates are 29 - 89 percent protein by weight. They contain a small amount of fat and cholesterol, carbohydrates in the form of lactose, as well as higher levels of bioactive compounds. Isolates are 90 percent protein by weight. They contain no fat or lactose, but are usually lower in bioactive compounds. Hydrolysates are predigested, partially hydrolyzed whey proteins and therefore more easily absorbed.

While concentrates and isolates are slightly milky in taste, hydrolysates are very bitter and generally more expensive.

When not to take whey protein

Whey protein isn't advised for everyone. For example, if you're lactose intolerant or have difficulty digesting lactose, whey protein can cause stomach cramps, bloating, flatulence, and diarrhea. If you must use whey protein, opt for an isolate, which only has one percent lactose instead of the standard concentrated version, which has five to six percent lactose.

If you have protein intolerance, whey protein could trigger an immune response and cause inflammation. If you get a stuffy nose every time you drink your protein shake, it could be due to excessive mucous production from protein intolerance. Although whey proteins are responsible for some milk allergies, the major allergens in milk are the caseins.

Some studies indicate that a steady amount of excess protein might be unhealthy, especially for people with pre-existing liver or kidney problems. The recommended daily dose of protein is based on weight, age, and activity levels and varies between 0.8 to 2mg per kilogram of body weight.

There have been some quality testing reports detecting the presence of excessive amounts of arsenic, cadmium, and lead in certain protein powders and drinks, based on three serving sizes per day. The main concern here is a chronic, low-level exposure to a heavy metal, which doesn't seem to alarm the supplement industry. "The results of this analysis aren't alarming," Andrew Shao of the Council for Responsible Nutrition in the US told a television news show. "The heavy metals that were found are well below the limits the FDA [Food and Drug Administration] would be concerned about, so they don't pose a health risk to consumers at all."

Ultimately, you should get the vast majority of your protein needs from real, whole food. Protein powders like whey can help top up your intake. Protein powders are convenient, and you can occasionally use them as a meal replacement. Ideally, though, you should use them in moderation. If you've never taken whey protein before, start with a small amount to see how your body handles it. And if you have any pre-existing kidney or liver conditions, or any allergies or intolerances, consult your doctor before taking protein supplements regularly. ⊕

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To book an appointment for personalized nutrition and wellness counselling at BCPWA, contact Bijal at 604.893.2239 or clinic@bcpwa.org.

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