

Protein Powder and Protein Over-consumption

Some foods can be quite controversial, making it difficult to make a definitive determination as to their benefit for health. Casein falls into this "gray" category, where the quality of the source and your chief health aim require careful consideration.

Casein is the main protein in [raw milk](#), making up about 80 percent of its protein content. The other 20 percent is whey. Whey protein has a reputation as healthy fitness protein that support athletic performance and muscle growth, and is a common ingredient in sports nutrition powders, bars and drinks.

A primary difference between whey and casein is that whey is digested very quickly, making it an ideal recovery meal, whereas casein is a slow-digesting protein with anti-catabolic properties, meaning it helps reduce muscle breakdown, even in the absence of food.

Whey also has one of the highest concentrations of the branched chain amino acids leucine, isoleucine and valine, which are potent stimulators of muscle growth through activation of the mTOR pathway.

Types and Forms of Casein

The two main forms of casein are micellar casein — the most popular form in sports nutrition — and casein hydrolysate, which is predigested and more rapidly absorbed than micellar casein.

Casein can also be divided into three main types: native whole milk casein from raw milk, cheese casein and industrial casein. As noted by fitness expert Ori Hofmekler, author of "Unlock Your Muscle Gene," there are significant differences between these three types.

Casein is typically extracted using acid and/or heat processing, and therein lies a major part of the problem. Many casein products on the market are inferior in quality, and may even contain toxic residues. As for its value as a beneficial protein for muscle growth, opinions and scientific evidence varies depending on the details.

Hofmekler notes that while native whole milk casein (consisting of protein clusters called micelles, bound with calcium, phosphate and citrate ions) is the most functional, as it "complements your body's acid-base balance and will not

cause an overly acidifying effect," the same cannot be said for most industrial caseins, which are highly acidifying.

Moreover, many have casein sensitivities, and if you fall into this category, you would probably want to avoid casein supplements no matter how high the quality. Common side effects of casein include indigestion or heart burn, bloating, allergic reactions or bad aftertaste.

Protein supplements such as casein are also contraindicated for those with kidney or liver disease, as they need to be mindful of restricting their protein intake.

Remember to Avoid Over-Consuming Protein

That said, I believe a strong case can be made that ALL people can benefit from [limiting protein](#) to just what your body needs. If you're an athlete or bodybuilder, you do need more, but eating tons of protein may backfire, as you're choosing physical performance over long-term health and longevity.

A near ideal protein intake may be around one-half gram of protein per pound of lean body mass. Athletes, pregnant women and older people need about 25 percent more.

Eating more protein than your body actually requires can stimulate an important biochemical pathway called the mammalian target of rapamycin (mTOR). This pathway plays an important role in many cancers.

When you reduce protein to just what your body needs, mTOR remains inhibited, which helps minimize your chances of cancer growth.