

# WHEY PROTEIN

## Frequently Asked Questions

### WHAT IS PROTEIN?

Protein is a nutrient made up of amino acids. There are two types of amino acids:

- **Non-essential amino acids:**  
Can usually be synthesized by the body through the foods we consume.
- **Essential amino acids:**  
Must be obtained through our diet.

### WHAT DOES PROTEIN DO FOR THE BODY?

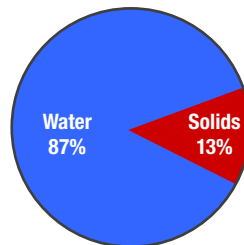
Protein has a number of important roles including:

- Repairing body cells
- Building and repairing muscle and bones
- Providing a source of energy
- Regulating many important metabolic processes in the body

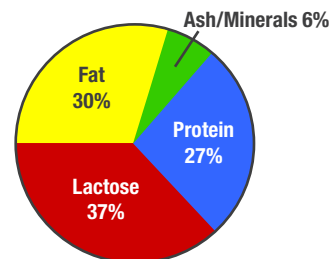
### WHAT IS WHEY PROTEIN?

Whey protein is a high quality and nutritious type of dairy protein that is isolated from whey, the liquid material created as a by-product of cheese production. Whey proteins are commonly marketed and ingested as dietary supplements.

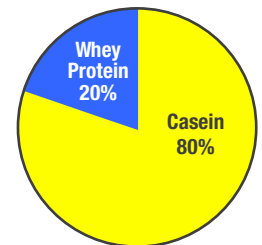
**COMPOSITION OF WHOLE MILK**



**COMPOSITION OF MILK SOLIDS**



**COMPOSITION OF MILK PROTEIN**



### ARE ALL WHEY PROTEINS THE SAME?

No. The composition of whey protein products vary based on several factors:

- The source of the dairy product
- The method of production
- The type of cheese being produced
- Individual manufacturer specifications

### WHAT ARE THE INDIVIDUAL COMPONENTS FOUND IN WHEY PROTEIN?

Whey proteins are not a single protein, but consist of a number of individual protein components. Recent technological developments have allowed manufacturers to isolate and purify the individual components, making many available in an isolated form.

**The individual components of whey proteins include:**

- Beta-Lactoglobulin
- Alpha-lactalbumin
- Immunoglobulins
- Bovine Serum Albumin (BSA)
- Glycomacropeptide (GMP)
- Lactoferrin
- Lactoperoxidase
- Lysozyme

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### WHAT IS THE DIFFERENCE BETWEEN “WHEY PROTEIN CONCENTRATE” AND “WHEY PROTEIN ISOLATE”?

**Whey protein isolate** is the purest form of whey protein and contains 90% to 95% protein. It contains little to no fat or lactose.

**Whey protein concentrate** is available in a number of different forms based on the protein content, which can range from 35% to 89%. It contains some lactose, fat and minerals. As the protein percentage increases, the amount of lactose decreases. Whey protein concentrate with an 80% protein content is most commonly available as a protein powder supplement.

### HOW DOES WHEY PROTEIN COMPARE TO OTHER SOURCES OF PROTEIN?

Whey protein is a high quality complete protein that contains all of the essential amino acids your body requires each day. There are several different methods used to evaluate the quality of a protein, and with each method, whey protein proves to be an excellent source!

#### Different methods of evaluating protein quality:

- **Protein Digestibility Corrected Amino Acid Score (PDCAAS).** This is the US Department of Agriculture’s officially approved method of scoring protein quality. The maximum score allowed for reporting purposes is 1.0. Whey proteins have a score of 1.14!
- **Protein Efficiency Ratio (PER).** A rating based on the evaluation of the growth of animals that consume a fixed amount of dietary protein from a single source. The PER for whey proteins is 3.2, making it one of the highest single source proteins available.
- **Biological Value (BV).** This is another measure of protein quality, measuring the amount of protein that is retained from the absorbed protein for maintenance and growth in the body. Biological Value measures the fraction of nitrogen in the diet that remains after the nitrogen losses in the waste products have been subtracted. Whey proteins have a BV of 100, which is a higher score than casein (milk protein), soy protein, beef, and wheat gluten.

### IS WHEY PROTEIN GOOD FOR ATHLETES AND PEOPLE WHO EXERCISE?

Whey protein is a rich source of branched chain amino acids and essential amino acids, which are both very important for people involved in sports, exercise, or resistance training. The bodily requirement for branched chain amino acids increases during exercise as they are taken up directly by the skeletal muscles versus first being metabolized through the liver, like other amino acids. Low levels of branched chain amino acids may contribute to fatigue and they should be replaced within 2 hours or less following exercise. Many athletes consume half of their whey protein drink before exercise to help optimize their workout. Whey protein also helps to repair and rebuild lean muscle tissue that is broken down by exercise.

### WILL WHEY PROTEIN HELP ME LOSE WEIGHT?

Whey protein is low in fat and is used successfully in many diet programs. Studies have found whey protein promotes fat loss, while helping to maintain lean muscle mass. Increasing muscle is a very effective way to maintain weight loss. Components in whey protein also help promote satiety by increasing the level of CCK (an appetite-suppressing hormone) in the GI tract. Calories do count so be sure to match your protein intake to your weight and activity level. Substituting whey protein for other protein sources may also be a good way to jump-start your weight management program.

### I AM LACTOSE INTOLERANT. SHOULD I AVOID WHEY PROTEIN?

No. Whey protein isolate contains between 90-97% pure protein and little to no lactose. In most situations it is very easy to digest, even for people with lactose intolerance. Since whey protein products vary in composition, please check the ingredient label to make sure you are getting pure whey protein isolate.

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### **HOW MUCH FAT AND CHOLESTEROL ARE CONTAINED IN WHEY PROTEIN?**

Most whey protein isolates contain little to no fat or cholesterol and are recommended for low fat and low cholesterol diets. Whey protein concentrates contain very small amounts of fat and cholesterol. This information should be listed on the ingredient label.

### **ARE THERE ANY SIDE EFFECTS TO TAKING WHEY PROTEIN?**

There are no documented side effects to whey protein, provided that you do not have an allergy to dairy proteins or are lactose intolerant. If you have a dairy protein allergy please consult your physician before taking whey protein. If you are lactose intolerant, choose a whey protein isolate containing little to no amounts of lactose.

### **IS WHEY PROTEIN SAFE FOR PREGNANT WOMEN AND CHILDREN?**

Whey protein is an acceptable protein source for healthy pregnant women and children provided they are not allergic to dairy proteins. In fact, the second most abundant component in whey protein, alpha-lactalbumin, is one of the main whey proteins in human breast milk. Also, infant formulas, including those for premature infants, often include whey protein. If you are pregnant, please check with your physician to be certain that whey protein is right for you.

### **IS WHEY PROTEIN EASY TO DIGEST?**

Yes, whey protein is highly soluble and very easy to digest. This is one of the reasons it is commonly used in infant formula and protein supplements for medical use. Although if a person has a lactose intolerance, they should select a why protein isolate which contains little to no lactose.