

Whey Cool™

Pure, instantized whey protein from New Zealand



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*"The health promoting powers of whey were discovered [a] long time ago. Ancient Greeks, as well as Hippocrates in 460 B.C., prescribed cheese whey for the assortment of human ailments. Later in the 17th century, during the Italian Renaissance sayings about whey flourished in Florence."*¹

Whey Cool™ is a great-tasting high protein, low carbohydrate functional food powder. The milk harvested to produce the whey protein for Whey Cool™ comes from cows that graze on pesticide- and chemical-free, non-GMO grass pastures in New Zealand, which is known to have one of the least polluted environments in the world. The milking cows are never fed grain, nor subjected to any hormone or antibiotic treatments.

This whey is instantized with sunflower lecithin (non-GMO), which helps it dissolve more easily in water and prevents foaming during blending. Optimal whey digestion is instrumental for the breakdown of native whey into bioactive peptides in the GI tract. Stomach acid has an important role in denaturing whey proteins so that the pancreatic enzymes can access and cleave them into peptides and eventually into amino acids. The fact that this whey is instantized with lecithin may help to improve its digestibility due to increased water solubility. Unlike other instantized whey formulations, Whey Cool™ is 100% soy free.

Whey protein derives its benefits from:¹⁻³

- a) **Amino acids and small peptides** (peptides break down into amino acids)
- b) **Bioactive peptides** composed of 3-20 amino acids, which have special physiological signaling roles as such and are eventually broken down into amino acids
- c) **Small molecules with specific physiological effects** which remain intact in the GI tract (occur in low concentrations)

a) Amino Acids and Small Peptides: Whey protein is a good source of specific amino acids which provide support for muscle, gut and immune cell metabolism:

- **The Essential Amino Acids (EAAs)** content in whey is much higher than the EAAs requirement per gram of dietary protein established by World Health Organization guidelines.⁸ Whey is also higher in EAAs compared to many other animal or vegetarian proteins.
- **Cysteine and Methionine** (sulfur amino acids) are precursors for the synthesis of glutathione, which is a potent endogenous antioxidant and supports detoxification of endogenous and exogenous molecules.¹¹
- **Leucine** is a branched chain amino acid (BCAA) known to have unique effects for stimulating protein synthesis and supporting muscle maintenance. (Muscle loss is the main cause of metabolic decline and loss of physical function during the aging process.) Also, along with other BCAAs found in abundance in whey, leucine provides fuel for muscle during exercise.
- **Glutamine** is known for its support of muscle metabolism, and as fuel for gut and immune cells. It supports acid/alkaline balance and it is also one of the three components of glutathione. Glutamine has been classically categorized as a non-essential amino acid (can be synthesized from other amino acids).⁸ However, new research is classifying it as a "functional amino acid" that needs to be present in the diet in adequate amounts in order to support optimal health.^{5,6}

b) Bioactive Peptides: The major protein fractions occurring in native whey are **beta-lactoglobulin** and **alpha-lactalbumin**, both of which are broken down during digestion into bioactive peptides (3-20 amino acids), as well as dipeptides and individual amino acids. The bioactivities of native milk proteins are either latent or absent; it is only when the peptides are liberated from the digested whey that they become active.¹ Benefits of bioactive peptides derived from whey include ACE inhibitory activity (known to lower blood pressure) and antimicrobial properties, which represent an important component of immune function.¹

c) Small Molecules with Specific Physiological Effects: Examples include: serum albumin, immunoglobulins, glycomacropeptide, lactoferrin, lactoperoxidase, lysozyme and insulin-like growth factor (IGF). Most of these molecules' functions were found to be preserved while traveling through the GI tract. Their roles include:

- **Immunoglobulins** (include IgG1, IgG2, IgA and IgM) – help bind and inactivate bacteria in the GI tract. IgG has been shown to also bind the toxin produced by *Clostridium difficile*, thus reducing the severity of this infection.¹
- **Glycomacropeptide** – a powerful stimulator of cholecystokinin, an appetite suppressing hormone that has essential roles related to GI function. Glycomacropeptide also inhibits the cholera toxin by binding to receptors in the intestinal tract.¹

- **Lactoferrin** – possesses metal-binding properties for Fe, Cu, Zn, and Mn. It is also a delivery vehicle of essential metals to the newborn. Lactoferrin acts as support for the non-specific immune system, playing a strategic role in the first line of defense against many pathogens that enter the body via mucosa. Lactoferrin has bacteriostatic and bactericidal activity against gram-negative, gram-positive bacteria and *H. pylori*.⁹ It also has fungicidal activity, particularly against *Candida* species. Lactoferrin inhibits replication of viruses in the early phase of an infection and prevents entry of viruses into the host cell.¹⁻³ Lactoferrin also demonstrates anti-inflammatory activity.³

Benefits of Whey

- **Gastrointestinal Health: Systemic and Gut Immunity** – Whey contains biologically active molecules capable of enhancing intestinal health through various mechanisms, including prebiotic effects, antimicrobial and antiviral properties, immune support, and in helping to repair gut permeability. Glycomacropeptide and lactoferrin have been shown to support the growth of beneficial *Bifidobacteria*.¹⁻³
- **Bone Health** – Milk basic protein (MBP), a fraction of whey, was found to be a promoter of bone health by stimulating osteoblasts, inhibiting osteoclastic activity and improving bone density.^{3,10}

Additional Benefits of Whey:¹⁻⁴

- Protein synthesis, especially benefiting muscle function, maintenance and hypertrophy, and recovery from exercise, sports and athletics
- Healing of gut lining
- Synthesis of the antioxidant glutathione
- Anti-inflammatory activity
- Postprandial satiety
- Healthy blood pressure

How to Take

- Mix 30 grams (approx. one scoop) in eight ounces of water or any other beverage per day.
- Optimization of whey digestion is important for maximizing all of its potential benefits and to reduce any possible allergenicity. Thus, additional supplements with HCl and digestive enzymes may be warranted on an individual basis.

Unflavored/Unsweetened

Supplement Facts		
Serving Size 30 grams (approx. one scoop)		
Servings Per Container 30		
Amount Per Serving	% Daily Value	
Calories	120	
Calories from Fat	20	
Total Fat	2 g	3%*
Saturated Fat	0.5 g	3%*
Cholesterol	20 mg	8%
Total Carbohydrate	3 g	1%*
Sugars	2 g	†
Protein (from whey)	23 g	46%*
Calcium	150 mg	15%
Phosphorus	105 mg	11%
Sodium	90 mg	4%
Potassium	135 mg	4%

*Percent Daily Values are based on a 2,000 calorie diet.
†Daily Value not established.

Contains milk.

Natural Vanilla Flavor

Supplement Facts		
Serving Size 30 grams (approx. one scoop)		
Servings Per Container 30		
Amount Per Serving	% Daily Value	
Calories	120	
Calories from Fat	20	
Total Fat	2 g	3%*
Saturated Fat	0.5 g	3%*
Cholesterol	20 mg	8%
Total Carbohydrate	3 g	1%*
Sugars	2 g	†
Protein (from whey)	23 g	46%*
Calcium (from natural sources)	150 mg	15%
Phosphorus (from natural sources)	100 mg	10%
Sodium (from natural sources)	90 mg	4%
Potassium (from natural sources)	130 mg	4%

*Percent Daily Values are based on a 2,000 calorie diet.
†Daily Value not established.

Other Ingredients: Natural flavor.
Contains milk.

Natural Chocolate Flavor

Supplement Facts		
Serving Size 30 grams (approx. one scoop)		
Servings Per Container 30		
Amount Per Serving	% Daily Value	
Calories	120	
Calories from Fat	20	
Total Fat	2 g	3%*
Saturated Fat	1 g	4%*
Cholesterol	20 mg	7%
Total Carbohydrate	5 g	2%*
Dietary Fiber	1 g	4%*
Sugars	2 g	†
Protein (from whey)	20 g	41%*
Calcium	135 mg	14%
Phosphorus	90 mg	9%
Sodium	100 mg	4%
Potassium	115 mg	3%

*Percent Daily Values are based on a 2,000 calorie diet.
†Daily Value not established.

Other Ingredients: Cocoa powder, natural flavors, certified organic stevia leaf extract powder, vegetable cellulose, sodium chloride.
Contains milk.



For a list of references cited in this document, please visit:

http://catalog.designsforhealth.com/assets/itemresources/WheyCool_References.pdf

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