



## WHEY FACTORS®

Rich source of BCAA, BSE and rBGH free, rich in polyphenol antioxidants

“Many people are under the impression that a WPC (whey protein concentrate) is inherently inferior to an isolate. This is simply not true. Though WPCs will contain less protein on a gram for gram basis than an isolate, a high quality WPC contains all sorts of interesting compounds not found in the isolates... Although data is lacking as to whether or not these compounds found in a good WPC will affect an athlete’s muscle mass or performance, studies do suggest that these compounds can improve immunity, intestinal health, and have many other effects that both athletes and ‘normal’ people alike may find beneficial” Will Brink, *The Whey It Is*.

Did you know that high quality, undenatured Whey Factors protein concentrate drink mix is one of the best tonics available to maximize health and energy? Considered a functional food with tremendous implications for human health, only this form of whey protein provides benefits to those with cardiovascular disease, the immune compromised, people undergoing cancer therapy, those trying to lose weight, the elderly and those with fragile bones. It’s also ideal for parents who are looking to boost their infant or child’s nutritional status.

Undamaged undenatured Whey Factors concentrate supplies all three of whey protein’s high biological value and muscle-enhancing branched-chain amino acids (BCAA), L-Leucine, L-Isoleucine and L-Valine along with numerous subfractions that are excellent health boosters. Whey Factors uses natural Cross Flow Microfiltration and special care during processing to protect all the important subfractions of undenatured whey.

### WHY WHEY?

Considered the ‘gold standard’ for athletes and the physically fit, it is well known that whey protein has the highest ‘biological value’, a measurement of how well a protein retains nitrogen or how usable it is to the body. High nitrogen absorption enhances muscle gain. Compared to other proteins, whey contains the highest concentration of BCAA that serve as important fuel sources for skeletal muscle during periods of metabolic stress, including exercise.

### WHEY FACTORS AND THE IMMUNE SYSTEM

The most well-researched aspect of whey is its benefit to the immune system. High in the amino acid, cysteine, Whey Factors enhances the immune system by raising levels of the important antioxidant glutathione; critical to proper immune functioning. Compromised immunity is associated with a long list of diseases. Glutathione stimulates antibody production and phagocytosis, increases beneficial enzyme production, and has antitumor activity. Also involved in detoxification, glutathione binds to fat-soluble toxins such as heavy metals, solvents and pesticides, transforming them into a water-soluble form, allowing for excretion via the kidneys (Murray). Taking whey concentrate is one of the best ways to raise glutathione levels in the body.

Whey Factors also enhances intestinal immunity by resisting pathogens. Certain subfractions of whey (immunoglobulins, lactoferrin, glycomacropeptides) act as prebiotics, substances that promote the growth of beneficial bifidobacteria and lactobacilli. These helpful bacteria are “considered to be beneficial bacteria due in part to their antimicrobial effects upon pathogenic bacteria, the production of essential B vitamins, and the inhibition of intestinal enzymes considered to be potential carcinogens” (Causey, *et al*). Whey Factors is thus especially important to the immune-compromised.

### HOW WHEY FACTORS CAN HELP YOU LOSE WEIGHT

Protein generally increases satiety more than fat, thereby decreasing total calorie intake. The body requires more energy to digest protein, so burns more calories after a high-protein meal. Whey is rich in leucine, an essential amino acid that may preserve lean muscle mass while promoting fat loss. The glycomacropeptides in whey stimulate the appetite-suppressing hormone, CCK. “In addition to being a regulator of food intake, CCK stimulates gall bladder contraction and motility, regulates gastric emptying and stimulates the release of enzymes from the pancreas. In animals, a rise in CCK is followed by a large reduction in food intake.” (Walzem)

Animal studies confirm that not only does a high-protein diet reduce body weight but the type of protein may also be a factor. Researchers from the University of Adelaide studied Wistar rats fed a high-fat diet for 9 weeks and then switched them to a high protein diet containing either whey protein concentrate or red meat. “The current study suggests that consumption of the high-protein diet reduced energy intake, lowered fat storage, and increased the amount of skeletal muscle protein in rats. Furthermore, different protein types within a high-protein diet had differing effects on body weight, fat storage, and insulin sensitivity. Increasing the density of WPC (whey protein concentrate) in the diet reduced weight gain and increased insulin sensitivity by reducing plasma insulin concentration, but an increased dietary density of RM (red meat) had no effect. In conclusion, a high-protein diet based on whey protein decreased weight gain, reduced fat deposition, and increased insulin sensitivity to a greater degree than a similar diet with red meat as the protein source” (Damien).

### HELPFUL FOR CARDIOVASCULAR DISEASE

Unlike red meat, Whey Factors provides high quality protein concentrate without the cholesterol-raising saturated fats. Bioactive components in Whey Factors help balance cholesterol levels, protect against hypertension by inhibiting platelet aggregation and angiotensin converting enzyme (ACE).

### CANCER AND WHEY CONCENTRATE

Whey Factors protein is easy to digest, helping meet the nutritional requirements while slowing muscle loss in cancer patients.

Here's what Michael Murray, author of *How to Prevent and Treat Cancer Through Natural Medicine*, says about whey protein for the cancer patient: "We recommend that patients obtain their glutamine by taking daily doses of 20 to 30 g of whey protein concentrate twice a day. We believe that acquiring glutamine from whey protein provides additional benefit over simply taking glutamine. Whey protein is more beneficial because it contains other compounds (called fractions and peptides) that are known to improve immune function and boost glutathione concentrations... Whey protein and/or glutamine can be used to support recovery from surgery, radiation therapy, and chemotherapy" (Murray, *et al*). Animal studies indicate that whey proteins can help reduce the size of breast and prostate tumours, while test tube studies show that whey protein can inhibit the growth of breast cancer cells.

### NEXT BEST THING TO BREAST MILK

Whey Factors protein concentrate provides many of the same components found in human breast milk, including lactoferrin, making whey protein an ideal ingredient to enhance infant formulas and the next best thing to breastfeeding. The lactoferrin component of breast milk imparts passive immunity to infants. In fact, nursing babies get as much as 3 grams of lactoferrin daily. Whey is ideal for the pregnant woman as well because pregnancy increases the body's need for protein.

### WHEY FACTORS AND BONE HEALTH

Supplementing with this high quality whey concentrate provides the protein required for maintaining strong muscles and bone density (especially when combined with an exercise and resistance training program). Second, as a good source of calcium, whey helps maintain bone status in the elderly.

### THE KEY SUBFRACTIONS

Lactoferrin – is a highly bioactive protein subfraction (peptide) found in whey that helps to improve the intestinal microflora and plays a role in the regulation of intestinal iron absorption by binding to iron. Known as an immune modulator, lactoferrin also has antibacterial, antiviral, antifungal, anti-inflammatory, and antioxidant actions.

Immunoglobulins – provide disease protection to newborns through passive immunity and also protect adults from disease by providing antimicrobial action in the intestinal tract. They have been shown to bind the toxin produced by Clostridium, reducing the symptoms of this infection (Causey, *et al*).

Beta-Lactoglobulin – is a major protein in

Whey Factors; beta-lactoglobulin binds calcium, zinc, and numerous other minerals and fat-soluble vitamins, suggesting that B-lactoglobulin might be a vehicle for transporting vitamin E and vitamin A.

Alpha-Lactalbumin – is the primary whey protein found in human breast milk. High in the amino acid tryptophan it helps the body make the neurotransmitter serotonin required for sleep, memory and handling stress. A double-blind study found that supplementing the diet with alpha-lactalbumin helped improve scores on a memory test in people who were vulnerable to experiencing problems with stress. The researchers speculated that the alpha-lactalbumin raised brain serotonin levels in these subjects, which improved their tolerance to stress (Marcus, *et al*).

Glycomacropptides – have been shown to inhibit dental plaque and caries, promote growth of bifidobacteria and inhibit platelet aggregation. Studies show that they can inhibit cholera toxin in the digestive tract. Due to their stimulation of the pancreatic hormone cholecystokinin (CCK) they can suppress appetite.

Albumin – is another large protein found in Whey Factors. Studies suggest thus far: *in vitro*, albumin protects against phenolic-induced oxidation and in a study of antimutagenic effects, albumin was effective against genotoxic compounds.

### CONCENTRATE VERSUS ISOLATE

When comparing concentrate to isolate, the most important thing to look at is the processing. Isolates are processed using higher heat, destroying many of the beneficial subfractions including immunoglobulins, lactoferrin, alpha-lactalbumin and glycomacropptides. These subfractions are negatively affected by processing that involves pH changes and/or heat pasteurization. The 12 to 20% higher protein profile of the isolate material does not warrant the loss of key immune enhancing properties. Whey Factors whey protein concentrate is undenatured, meaning that it has not been subjected to treatment that causes structural changes. The protein is processed under low temperature and/or low acid conditions so that it is not denatured. The importance of undenatured whey protein cannot be stressed enough. Studies show that the natural undenatured state of the protein is essential to its anticancer and immunostimulating activity.

For those concerned, by simply taking a dosage of 12 to 20% more of undenatured whey concentrate, the total protein obtained will be equivalent to isolate. This makes it ideal for the athlete or casual athlete using whey protein for muscles growth,

development and post workout recovery, without loss of the added health benefits provided by whey's key subfractions.

### CROSS FLOW MICROFILTRATION MAKES WHEY FACTORS SUPERIOR

Advanced manufacturing process using Cross Flow Microfiltration (CFM) technology creates the highest quality whey protein with low fat and low lactose. CFM separates the protein without the use of damaging heat or chemicals rendering it free of any denatured material as a result of this low temperature process, producing the highest level of undenatured protein available while preserving the important protein microfractions and peptides and increasing beneficial glutathione (GSH) production.

Whey Factors is 100% European whey protein, a highly efficient microfiltered whey that contains less than 2 grams of carbohydrates per serving. It is low in sugar (less than 1 gram per serving) and sweetened with the natural sweetener, stevia. Added bromelain and enzyme powder enhance absorption.

### DOSAGE

Mix 1 scoop (25 g) to 180 mL or more of water. Use 1 to 3 times per day or as directed by a health care practitioner. Best if shaken.

### SAFETY

Whey Factors powder drink mix is a nutritional food and is not expected to have any adverse effects unless allergic to milk or milk products.

Whey Factors can maximize your good health and energy because it is a health tonic designed to boost immunity, provide an outstanding source of protein for athletes while helping improve the health of everyone from infants to adults.

### KEY REFERENCES

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