

# MUSASHI

## WPC - Instantised Whey Protein Concentrate

- **General Health**
- **Active Lifestyles**
- **Athletes**
- **Immune Function**
- **The Aged Population**
- **Enhanced Filtration Process (EFP)**

Until recently whey proteins were only known to us as an ingredient in bodybuilding protein powders. Today they are recognised as nutritional extracts with diverse health benefits for people of all ages and activity levels.

### What is Whey Protein?

Whey protein is a pure, natural, high quality protein from cow's milk. It is a rich source of the essential amino acids needed on a daily basis by the body.

### Whey Protein Production – Done with Great Care

Immediately after milking, the milk is cooled to 4 degrees Celsius and kept in cooling tanks. The whey is not heated and the material from which it is derived is slowly agitated to minimize protein denaturation. The whey is then separated and concentrated through ultrafiltration, which allows for selective separation of protein from lactose, salts and water under mild conditions of temperature and pH. It is also emulsified with lecithin to allow it to instantly mix.

### The Highest Biological Value Whey

These whey proteins are comprised of the highest biological-value proteins available, this means they are more easily digested and absorbed than any other protein. They include the immunoglobulins IgG, IgA and IgM, but especially IgG, glycomacropetides, bovine serum albumin, lactoferrin, lactoperoxidase and lysozyme. Whey proteins also contain smaller peptides derived from various proteins, which are called biopeptides.

### EFP – A Musashi Innovation

The EFP process is unique to Musashi's Australian based processing plant. Musashi has always recognised the importance of free form amino acids and their inclusion in protein formulations. By fortifying this formulation with BCAAs and Essential Amino Acids we ensure the immediate saturation of tissue requiring these nutrients. These are extremely important for the active individual, and the serious athlete.



*Free form essential amino acids are added to this formula because of their high absorption. This increases the efficiency of the formula's delivery rate to the muscle tissue, thus making it more effective than protein powders without added amino acids.*

### The Taste Test

The importance of taste, texture and mouth feel was at the forefront of the list of priorities for this product. The use of ice-cream flavours and natural emulsifiers have produced a great tasting, creamy product with no bitter aftertaste commonly associated with protein shakes.

### Why is good for your metabolism and weight

Whey protein contains bioactive components that help stimulate the release of two appetite-regulating hormones: cholecystokinin (CCK) and glucagon-like peptide-1 (GLP-1). It will keep you feeling satisfied longer. The body requires more energy to digest protein than other foods (thermic effect) and as a result you burn more calories after a protein meal. Protein also helps to stabilize blood glucose levels by slowing the absorption of glucose into the bloodstream. This in turn reduces hunger by lowering insulin levels and making it easier for the body to burn fat.

### Whey Protein and BCAAs

Whey protein is a rich source of branched chain amino acids (BCAAs), containing the highest known levels of any natural food source. BCAAs are important for athletes since unlike the other essential amino acids, they are metabolized directly into muscle tissue and are the first ones used during periods of exercise and resistance training. Whey protein provides the body with BCAAs to replenish depleted levels and start repairing and rebuilding lean muscle tissue.

## Whey improves Everyone's Immune System

Whey protein is also high in glutamine and the unique *glutamylcysteine groups* which are considered to be key factors in the glutathione-promoting activity of the protein mixture. The glutathione (GSH) antioxidant system is the principal protective mechanism of the cell and is a crucial factor in the development of the immune response by the immune cells.

Whey protein helps both athletes and the general public maintain a healthy immune system by increasing the levels of glutathione in the body. It is excellent to use after and during any debilitating chronic illnesses and following surgery for recovery. Whey protein helps keep athletes healthy and strong to perform at their best.



## Whey is good for the Aging

As we are faced with an increasing aged population, the problems of muscle loss and its negative health implications is a growing concern. Elderly individuals who consume low levels of protein have been shown to have a significant loss of bone density, especially in the hip and spine areas. A nutritious diet including high quality whey protein, which also contains minerals such as calcium, will help keep bones and muscles healthy and strong especially when combined with an exercise and resistance training program.

Musashi WPC is thus the protein product of choice for individuals of all ages. It provides a number of benefits in areas including sports nutrition, weight management, immune support, bone health, and general wellness.

WPC Chocolate		
	Average Quantity per serve	Average Quantity per 100g
<b>Energy</b>	515kj	1716kj
	123 cal	411 cal
<b>Protein</b>	23.5g	78.3g
<b>Carbohydrate</b>	2.2g	7.4g
<b>sugar</b>	0.1g	0.1g
<b>Fat - total</b>	1.8g	5.9g
<b>saturated</b>	1.0g	3.4g
<b>Sodium</b>	39mg	130mg

**Serving Size: 30g (appr 2 scoops)**

**Servings per package:**

**400g = approx. 13 serves**

**900g = approx. 30 serves**

**1.9kg = approx. 63 serves**

WPC Strawberry			WPC Vanilla		
	Average Quantity per serve	Average Quantity per 100g		Average Quantity per serve	Average Quantity per 100g
<b>Energy</b>	505kj	1683 kj	<b>Energy</b>	516kj	1721kj
	121 cal	403 cal		124 cal	412 cal
<b>Protein</b>	23.9g	79.8g	<b>Protein</b>	24.1g	80.3g
<b>Carbohydrate</b>	1.6g	5.3g	<b>Carbohydrate</b>	1.1g	3.7g
<b>sugar</b>	0.1g	0.1g	<b>sugar</b>	0.1g	0.1g
<b>Fat</b>	1.4g	4.6g	<b>Fat</b>	1.7g	5.8g
<b>saturated</b>	0.6g	2.1g	<b>saturated</b>	1.1g	3.6g
<b>Sodium</b>	36mg	120mg	<b>Sodium</b>	42mg	140mg

**WPC Chocolate Ingredients:** Instantised Whey Protein Concentrate, Inulin, Essential Amino Blend (L-Lysine, L-Histidine, L-Leucine, L-Arginine, L-Isoleucine, L-Valine, Glycine, L-Tyrosine, L-Threonine, L-Methionine) Cocoa, Milk Solids, Xanthan Gum, Flavour, Guar Gum, Sucralose  
**WPC Strawberry Ingredients:** Instantised Whey Protein Concentrate, Inulin, Essential Amino Blend (L-Lysine, L-Histidine, L-Leucine, L-Arginine, L-Isoleucine, L-Valine, Glycine, L-Tyrosine, L-Threonine, L-Methionine), Milk Solids, Xanthan Gum, Natural Colour, Flavour, Guar Gum, Sucralose  
**WPC Vanilla Ingredients:** Instantised Whey Protein Concentrate, Inulin, Essential Amino Blend (L-Lysine, L-Histidine, L-Leucine, L-Arginine, L-Isoleucine, L-Valine, Glycine, L-Tyrosine, L-Threonine, L-Methionine), Milk Solids, Xanthan Gum, Flavour, Guar Gum, Sucralose

## References:

- G. Bounous, P. Gold The Biological Activity Of Undenatured Dietary Whey Proteins: Role Of Glutathione. Clin Invest Med, 14: 296-309, 199. Department of Surgery, Montreal General Hospital, Research Institute, Quebec
- Bounous G, Molson JH. The antioxidant system. Anticancer Res. 2003 Mar-Apr;23(2B):1411-5.
- Lemon, W.R., 1998. "Effects of exercise on dietary protein requirements." International Journal of Sport Nutrition and Exercise Metabolism, 8(4): 426-447.
- Tipton KD, Ferrando AA, Phillips SM, Doyle Jr D., and Wolfe RR Postexercise net protein synthesis in human muscle from orally administered amino acids. Am J Physiol Endocrinol Metab Vol. 276, Issue 4, E628-E634, April 1999

