

## Rationale for Whole Protein Shake™

Over eons of time, long before modern food fractionating and synthetic food capabilities, people ate foods exactly as they were found in nature. That is the model we should aspire to if we understand the obvious truth that health is best served by living life as we were genetically designed.

It was characteristic of those true, original foods that they were whole. Natural wholeness provides nutritional and health benefits that are far superior to food fractions. Science has only a glimpse of the full complexity of natural foods and thus cannot be relied upon to fabricate foods from chemical components. Food is most certainly a place where nature knows best.

With these understandings the doctors and nutritionists at Wysong have used their 25 years of research and experience to develop a Whole Protein Shake™ (WPS) to provide a convenient, concentrated and tasty high protein supplement and meal replacement. Modern diets with their concentration of sugars and carbohydrates provide calories but not the necessary protein and micronutrients for optimal health, growth or maintenance of muscle.

For dieters, high quality protein does not convert to fat stores as readily as carbohydrates do, and by increasing muscle mass resting calorie consumption is increased – resulting in fat loss while resting. For athletes, maintaining an appropriate nitrogen balance with protein helps repair tissue and enhances performance. For growth and body building, high quality protein is essential since muscle itself is predominantly protein. For the ill, high quality whole protein and the nutraceuticals in WPS are essential to help prevent catabolism (tissue breakdown) and provide the fuel for the immunological proteins needed to fight disease agents. For the elderly, high quality whole protein is essential since digestive efficiency is diminished with age and muscle wasting and weakness decreases the capacity for living a full life and increases the risk of injury and bone fractures from falling.

WPS is designed with health and respect for nature as the number one consideration. It is intended to work with the body, rather than attempt to force it into some unnatural metabolic state as with a drug.

### WPS™ QUALITY AND HEALTH INGREDIENTS

The WPS meal replacement and diet system constitutes three components:

1. Macrocomponents: Dairy Proteins, Egg Proteins, Colostrum (first milk)
2. Microcomponents: Amino Acids, Vitamins, Minerals, Probiotics and Enzymes
3. Flavors: Natural Strawberry & Banana

#### Whole Milk

Although milk is composed of water, carbohydrate (lactose), fat, protein, minerals and a variety of unknown factors, the properties and importance of milk are greater and more complex than the sum of its individual component parts. Dehydrated whole milk in WPS has every component besides the water, thereby concentrating the proteins. Different specific proteins are found in milk, the primary group being the caseins. Caseins have an amino acid composition that is important for growth and development. As compared to various other food proteins, caseins are quite digestible. Yet, in comparison to the other milk proteins, they are absorbed at a slower rate (2-3 hours) thereby beneficially releasing amino acids over a longer period of time. This helps reduce muscle breakdown and increase protein synthesis. Whole milk also contains high glutamine content that aids in muscle synthesis (see Glutamine on Pg. 3). The high quality, easily digestible protein in milk is one of the main reasons why it is such an important human food. The second important class of milk proteins is the whey proteins,  $\beta$ -lactoglobulin and  $\alpha$ -lactalbumin, which greatly enhance the body's hormonal and cellular responses. Most importantly, whey proteins contain a high concentration of branch-chained amino acids (see BCAA on page 3) and immunoglobulins in addition to key enzymes, hormones, growth factors, nutrient transporters and disease resistance factors (see Bovine Colostrum below).

In earlier times, dietary energy for human foods was at a premium. Milk fat was a ready source of such energy and milk producers were paid a premium for the milk fat content of the milk they produced. In today's society, dietary fats, especially saturated fats, are considered to have a negative impact on health. Whereas fifty years ago cows producing greater than 4% milk fat were at the head of the herd, the average fat content of fluid milk consumed in the US today is less than 2%. More emphasis has been placed upon low fat and high protein. However, milk fat percentage and milk protein percentage are positively correlated. Moreover, milk fat is composed of a complex mixture of lipids. The predominant fatty acids in milk are the long-chain fatty acids myristic, palmitic and stearic. Stearic acid is shown to have a neutral effect on cholesterol, neither raising nor lowering LDL-cholesterol levels. Further, 21% of the milk fats occur as monounsaturated fatty acids, of which the most prevalent is oleic acid, the heart-healthy monounsaturated fat also found in olive oil. Recent studies have shown that several other milk fat components, such as butyric acid, conjugated linoleic acid (CLA), and sphingomyelin may have the potential to protect against major chronic diseases, such as cancer and cardiovascular diseases. CLA, an abundant fatty acid in milk fat, has received considerable attention because of its association with such potential

beneficial effects on health as anticarcinogenic, anti-atherogenic and anti-diabetogenic activities. Recent human studies have demonstrated a link between dietary CLA intakes and reduced risk of breast cancer in postmenopausal women.

Unlike most of the protein supplements on the market, WPS does not contain isolated proteins and/or peptides, but rather trusts in the holistic wisdom of nature and thus provides the synergistic benefits of its components. Hence the reason behind using whole milk containing lactose, the natural carbohydrate present in milk. Research has now proven proteins to have a more positive building effect in the presence of carbohydrates. In fact, a 2001 study conducted at University of Texas Medical Branch measured the amount of uptake of the amino acid L-phenylalanine into healthy leg muscle tissue in one of three protein shakes and found that L-phenylalanine uptake in the protein and carbohydrate shake was measured as being three times higher than the carbohydrate shake, and roughly twice as great as the amino shake. Furthermore, lactose ingestion has been shown to improve the absorption of calcium, needed for optimum development of bones and teeth in infants and growing children.

#### Non-Fat Milk

High quality non-fat milk is also incorporated into WPS to increase the concentration of protein without unduly increasing caloric content.

#### Bovine Colostrum

Colostrum is the first food of life. It is the pre-milk fluid produced from the mammary glands during the first 72 hours after birth. There are over 90 known components in colostrum. The primary components constitute the immune factors and growth factors. Amongst the immune factors are large quantities of a secretory antibody, immunoglobulin A (IgA), in addition to leukocytes and anti-viral factors such as lactoferrin. Primary growth factors include, Epithelial Growth Factor (EGF) – skin protection and maintenance; Fibroblast Growth Factor (FGF) – wound healing and tissue repair; and Insulin-like Growth Factor I (IGF-I) – lean muscle mass increase, DNA and RNA repair, anti-aging, maintenance of normal blood-sugar and cholesterol levels. Colostrum also contains a precise balance of vitamins, minerals and amino acids. All of these factors work together in perfect synergy to restore and maintain health

#### Egg Albumen

Egg has long been considered the ideal protein against which all other proteins are measured. In WPS it helps broaden the spectrum of natural protein and increase the time of absorption of protein over the course of the day. Egg is also an excellent natural source of niacin, riboflavin, chlorine, magnesium, potassium, sodium and sulfur.

#### Yogurt Powder

For over 3,000 years, people in various parts of the world have been making and consuming yogurt. Known for its beneficial probiotic properties (immune enhancement, growth factors, antagonism to disease agents, nutrient production, etc.), the yogurt powder used in WPS contains 34% protein, 12.5% calcium and is devoid of trans fat. The natural fauna of *L. bulgaricus* and *S. thermophilus* – the healthy bacteria in yogurt, is further enhanced with added probiotics including *Lactobacillus acidophilus*, *Lactobacillus bifidus*, *Lactobacillus plantarum* and *Enterococcus faecium*.

#### Added Microcomponents

BCAA (Leucine, Isoleucine, and Valine): These essential amino acids act as an energy source during endurance exercise. The active skeletal muscles catabolize the BCAAs to produce muscle-fueling glucose as an end product. In fact a recent weight loss study (Aug 2005) out of University of Illinois shows that a protein-rich diet along with exercise works because it contains high levels of leucine that works with insulin to stimulate muscle protein synthesis. They also act as a competitive antagonist for tryptophan which is a precursor to fatigue-producing 5-HT (5-hydroxytryptamine) in the brain.

#### Arginine:

This amino acid is necessary for the synthesis and release of human growth hormone from the pituitary gland. It also functions in muscle metabolism: transportation, storage, and excretion of nitrogen, as well as muscle synthesis. Arginine also helps to make nitric oxide – a vasodilator that aids in making blood flow more freely thus lowering blood pressure but increasing the perfusion of muscle tissue. This becomes an essential amino acid for adults because the body reduces its production of this amino acid with age.

#### Glutamine:

This amino acid is a precursor to alanine, which is turned to glucose for energy. Glutamine helps to prevent fatigue and soreness in athletes. During times of stress, glutamine reserves are depleted and need to be replenished through supplementation. It makes up 60% of the skeletal amino acid pool, thus is a major factor in promoting muscle synthesis. Glutamine also increases the hydration state of the muscle cells thus helping to prevent muscle breakdown (catabolism). Glutamine additionally aids in immune functions, acts as a fuel for dividing cells and is critical for muscle building

because

it is a nitrogen donor, creating a positive nitrogen balance for gain in muscle mass.

**Tyrosine:**

Is a building block amino acid for all proteins. It is a precursor to vital hormones such as dopamine, norepinephrine, and epinephrine. It enhances mental focus and clarity. Tyrosine readily passes the blood/brain barrier where it acts as a precursor for the excitatory neurotransmitters and dopamine. Tyrosine is also useful in the formation of amino-sugars that are critical to the integrity of body tissues. Tyrosine's connection with the excitory neurotransmitters is important in situations of stress – including bodybuilding/weightlifting and other strenuous exercise.

**Carnitine:**

Is essential for moving fat molecules into mitochondria of every cell in the body. It thereby permits the body to exercise longer without fatigue, therefore increasing energy while promoting fat loss.

**Glucosamine and Chondroitin:**

Are needed for joint health, antiinflammation, and tissue repair. WPS is supplemented with these two proteoglycans since the modern diet of trimmed meats is almost devoid of these nutrients.

**Lecithin:**

Is a phospholipid that supports fat metabolism and aids in liver function and fat emulsification. Despite the fact that humans can synthesize it in small amounts, choline (derived from lecithin) must be consumed in the diet to maintain health. Choline is used in the synthesis of the phospholipids, phosphatidylcholine and sphingomyelin, structural components of all human cell membranes and in particular nervous tissue.

**Conjugated Linoleic Acid (CLA):**

Is a fatty acid found in red meat and cheese. Improves the lean mass to body fat ratio by decreasing body fat deposition and enhancing muscle growth. Along with reducing fat, it preserves muscle tissue, reduces blood glucose and triglycerides, promotes muscle synthesis, prevents fat storage, increases metabolism, reduces allergic reactions, and enhances the immune system.

**Medium Chain Triglycerides (MCT)**

MCTs are rapidly used for energy and are not stored as fat by the body. They are uniquely metabolized in the liver and are found naturally in coconut oil, palm oil, and butter. The popular notion that such saturated fats are "bad" is not supported by sound scientific research and is illogical since natural foods from the beginning of time have contained these important nutrients.

**Probiotics:**

There is a constant battle in the digestive system between the good and bad bacteria. Probiotics are active (live) yogurt-like cultures of microorganisms that shift the balance in favor of the good guys, thus increasing immune strength and digestive function. Probiotics also serve to synthesize important nutrients within the gut.

**Coenzyme Q-10:**

Is important for energy metabolism within cardiac cells. The conversion of energy from carbohydrates and fats to adenosine triphosphate (ATP), the form of energy used by cells, requires the presence of coenzyme Q in the inner mitochondrial membrane. Coenzyme Q-10 importance is emphasized by the fact that it can help prevent and reverse cardiomyopathy, hypertension and atherosclerosis.

**Calcium:**

Is the most abundant mineral in the human body and essential for muscle contraction, blood clotting, and nerve function. Calcium deficiency can result in degeneration of bones and result in osteoporosis. Calcium also plays a role in blood vessel constriction and dilation and glandular secretion. The binding of calcium to the protein Calmodulin activates enzymes that break down muscle glycogen to provide energy for muscle contraction. Further, weight loss studies have shown that calcium stored in fat cells plays a crucial role in regulating how fat is stored and broken down by the body via hormone regulation. It's thought that the more calcium there is in a fat cell, the more fat it will burn. A single serving of WPS provides over 40% of the RDA for calcium.

**Zinc:**

Is an essential mineral that supports the immune system, helps wound healing, and plays an important role in the structure of proteins and cell membranes. A finger-like structure,

known as a zinc finger motif, stabilizes the structure of a number of proteins. Zinc deficiency in biological membranes increases their susceptibility to oxidative damage and impairs their function.

#### Magnesium:

Is an essential mineral needed by every cell for over 300 biochemical reactions in the body, including the synthesis of nucleic acids (DNA and RNA) and proteins. In fact, both lipids and carbohydrates indirectly need magnesium for their synthesis. One study found that magnesium absorption was lower when protein intake was less than 30 grams/day, and higher protein intakes (93 grams/day vs. 42 grams/day) were associated with improved magnesium absorption in adolescents (4). Glutathione, an important antioxidant, requires magnesium for its synthesis.

#### Vitamins:

Thiamine (B1), Riboflavin (B2), Pyridoxine (B6), Pantothenic Acid (B5), Niacin (B3), Cyanocobalamin (B12), Folic Acid, Biotin, Vitamin D3, Vitamin E, Beta Carotene, Vitamin K1, and Vitamin C are all critical vitamins for exercise, anabolism, immunity and overall health and are provided at optimal levels in WPS.

#### USES OF WYSONG WHOLE PROTEIN SHAKE

For muscle growth/maintenance – Before: Take one serving at least 30 minutes or up to 2 hours before your workout. After: Drink within one-hour after workouts to encourage muscle synthesis during periods normally marked by breakdown. We do not recommend attempting to count grams of protein but rather to emphasize natural and high quality foods.

For health – Jump-start your day with one serving of WPS to provide almost half of your recommended protein intake.

For illness – Alkalinize the body with Wysong WellSpring™ and plenty of pure water (Go to [www.wysong.net](http://www.wysong.net) – Human Products – Water Quality). Fast during the early stage of any illness, avoid sugars and carbohydrates. Combine WPS with Wysong Origins™ and emphasize only raw whole foods such as fruits and vegetables and lightly cooked quality meats.

For dieting – Use as a meal replacement. Combine with Wysong Origins™ Snack Bars or Un-Cereal™ to create an extremely satisfying meal or snack that will hold off appetite for many hours. Other meals should emphasize fresh fruits and salads and quality meats.

We do not recommend "counting calories" but rather following these simple principles of eating only those foods that are most like those that would be found in nature and do not require processing. Sugars and carbohydrates, soft drinks and the like should be eliminated or dramatically reduced. Exercise should of course be a part of the daily routine.

#### GETTING HEALTH SMART

Health is best served by becoming knowledgeable. That is Wysong's best value to you. Explore the many educational aids at [Wysong.net](http://Wysong.net) and be sure to subscribe to Dr. Wysong's free e-Health Newsletter.

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#### About the Author

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