Optimal Health Center

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The Whey of Life!

NutriHarmony's Whey Protein

The entire body requires high quality, digestible (unprocessed) protein to ensure that it functions properly. To achieve this, NutriHarmony utilizes a unique production process when it makes its Ion Exchange Whey Protein. What is whey protein?

Proteins are made from amino acids and whey is the remaining liquid after curdling milk to make cheese. The protein in unprocessed whey is a rich source of amino acids and contains all of the essential amino acids. The amino acid pattern of unprocessed whey protein is the most perfectly balanced pattern for optimal human metabolism.

Protein was first discovered in 1838 and is the predominant ingredient of cells. The word protein is from the Greek word *proteios*, which means *primary*. Dietarily acquired proteins serve primarily to build and maintain cells. Other functions include muscle contraction, the structural formation of enzymes for metabolism and digestion, the formation of many hormones in the body (such as insulin), the formation of antibodies (immuneglobulins) as part of our immune system protection, the formation of hemoglobin (for transporting oxygen in the blood) and formation of various proteins required for transporting vital nutrients throughout the body. Greater than 50% of the dry, lean weight of a normaly sized person consists of protein.

There are currently twenty-two known amino acids. Eight of these amino acids are known to be "essential", so they must be supplied through our diet because we are unable to make them. Precious little is known about the estimated 30,000 different human proteins—in fact, only about 2% have been adequately described. To help give you an understanding these proteins' significance within our bodies, three very important and fundamental protein related activities are covered next.

The Physical Composition of the Body

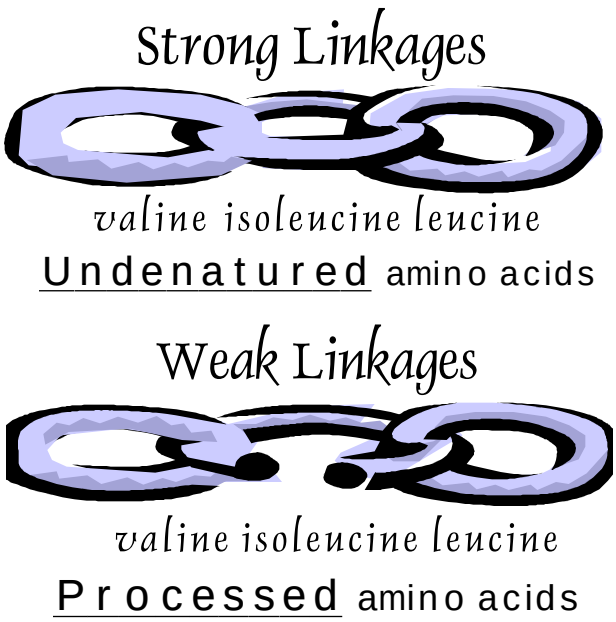
On a typical day, 200 million to 1 billion cells of the body die and need to be replaced. This normal breakdown process is accelerated during times of increased protein demand such as occurs with illness, injury, stress, starvation and exercihees, the

body prioritizes protein usage to meet metabolic activity instead of cell regeneration. If need be, the body will ravage its protein stored in lean tissue to answer the increase in demand. In order to maintain the lean tissue composition of a youthful healthy body, sufficient quality protein must be available to meet both the times of increased demand and the normal daily replacement of cells. Without an adequate supply of regenerative protein, the body loses lean tissue mass. The average person in the United States loses one full pound of lean tissue every year after the age of 25. Between the ages of 25 to 65 there is an average 25% reduction in: brain size, most organs and muscles! Why do people loose lean tissue mass?

The Production of Lean Tissue

Lean tissue is anything that is non-fat. There are two types of lean tissue: one is soft tissue such as organs and muscles, and the other is hard tissue such as bone and cartilage. The soft lean tissue of the body is made primarily from three essential amino acids that must come from the diet. They are *valine, leucine,* and *isoleucine,* also referred to as "branched chained amino acids" or BCAA's. These amino acids are strung together like a chain to form lean tissue.

Two of the branched chain amino acids, *valine* and *leucine,* are stable and resist degradation. However, *isoleucine* is fragile and breaks down easily under the stress of heat or chemicals. This can be critical. If you have an inadequate supply of one of the three, not only will you produce less than required for daily cell regeneration, but also those new cells that are produced will be weak in vitality and function. For example, if muscle cells are poorly produced, they would be weaker and more susceptible to trauma and injury, and functioning organs would be weaker and not be able sustain performance for health.



A daily supply of these three amino acids including intact unprocessed isoleucine unadulterated by heat, as in cooking, is essential for the production of strong, healthy lean tissue. The finest source of branched chain amino acids is unprocessed whey protein comprising 24% of the total amino acid content by weight. For every 100 grams of undenatured whey protein, 49 grams are undenatured essential amino acids. Gram for gram it is one of the most potent sources of essential amino acids. In addition, 50% or one-half of the essential amino acid profile comprises branched chain amino acids. That means for every 100 grams of undenatured whey protein we have 24 grams of undenatured branched chain amino acids. That is by far the best source of undenatured essential branched chain amino acids available.

The formulation contains the correct ratio for maximum effectiveness. The innovative processing of NutriHarmony's Ion Exchange Whey Protein produces a product that contains 98% unprocessed amino acids. This protein sets a standard that cannot be approached in the nutritional industry. It is THE best source for the daily regeneration of the lean soft tissue and a must for anyone who wants to preserve or recover their soft lean tissue body composition. A good rule of thumb would be to supply 1 gram of protein per day for every pound of lean tissue mass. For ex-

ample, if you weigh 200 pounds and have 30% body fat, you would have 140 pounds of lean tissue. A recommended protein level would then be 140 grams of protein per day. In order to determine your body fat percentage you could purchase a TANITA Body Fat Analyzer/Scale or try your local gym. Most gyms will do a body composition for you for around $10.00.

Be aware however, there is some controversy regarding excess protein in the diet. According to the best scientific knowledge there is not one peer-reviewed document that substantiates the opinion that protein causes any damage to a reasonably functioning system. However, an evaluation should be considered if a pre-existing kidney dysfunction is present. Hard lean tissue, bone, and cartilage are dependent on protein as well as minerals for strength. The calcium and minerals that we often think of as making up bone and giving it its structural integrity and strength are bound within a protein matrix.

Cysteine is an amino acid that is both difficult to obtain in sufficient quantities from the diet in an undenatured state and is under tremendous pressure for a multitude of uses. There must be adequate amounts of *cysteine* for hair growth, collagen in the skin, and, most importantly, for the production of glutathione.

Glutathione

Glutathione is the single most significant biochemical discovery to date. It is the most important molecule of the immune system. It is involved in every aspect of immune system response. People with compromised immune systems can be found to have low levels of glutathione. Research indicates that increasing the glutathione levels can reduce the viral load within the cell by up to 80%. There is nothing else known to be as effective at controlling the infectious load as increasing glutathione. Another valuable glutathione function involves the production of Growth Hormone. *Glutathione* is the strongest known antioxidant to reduce free-radical damage. Proper levels of this critical molecule are essential to health. Glutathione is a three amino acid compound that is made inside every cell of your body. It is made from glutamic acid, glycine and cysteine. Of these three, cysteine is the rate-limiting factor in the production of glutathione just as it is the rate-limiting factor in the production of bone, cartilage, hair, skin, and nails. That means there is competition for cysteine and if it is not supplied in adequate quantities some healthful activities cannot occur. For example, a person with poor health generally has dry or sparse hair, weak nails, poor skin quality, and a problem with joints. Remember as previously stated, the reason for these observable deficiencies goes back to a lack of adequate cysteine.

Because of the tremendous benefits of optimal glutathione production, researchers are trying every conceivable method to raise these levels. The only known consistently reproducible method to raise the glutathione level is the use of unprocessed whey protein. Michael Colgan of the Colgan Institute has performed research that measured up to a 500% increase in immune function by the use of unprocessed whey protein, whereas no other protein had an effect.

The Words of the Brain Neurotransmitters

Neurotransmitters are the chemical words used by the brain and nervous system to communicate to every cell in the body to run operations. Some of the more commonly known neurotransmitters are s*erotonin, melatonin, growth hormone, dopamine, GABA*, the *opioids*, and *norepinephrine*. In all, there are over 3600 different neurotransmitters. Since every function in the body is either directly under the control of the brain or monitored and coordinated by brain function, an abundance of neurotransmitters is essential. All body functions are orchestrated by neurotransmitters.

The brain also uses neurotransmitters to regulate such functions as thinking, eye-hand coordination, and mood and temperament balance. The absence of adequate neurotransmitters is responsible for many diverse symptoms such as fear, anxiety, depression, irritability, inability to sleep, rapid heart rate, muscle tension, insecurity, worry, and temper which can indicate a lack of adequate essential protein. All 3600 different neurotransmitters are produced from the eight essential amino acids, the best source of which is unprocessed whey protein.

We hope that this introduction to the benefits of unprocessed whey protein and its significance to your health may increase your knowledge and awareness when choosing the best whey protein.

There is a tremendous difference in the quality of whey protein available. Poor quality gives little or no results. High quality whey protein will provide the primary building blocks of good health.

Below is a list of references that can be used for your own research.

References:

Dr. Michael Colgan, The New Nutrition: Apple Publishing Co., 1996

Dr. Michael Colgan, The Right Protein for Muscle and Strength: Apple Publishing Co., 1998

Robert K. Murray, MD, Ph.D. Harper's Biochemistry 24th Edition: Appleton and Lange, 1996

Dr. Ronald Katz, Advances in Anti-Aging Medicine Volume 1: Mary Ann Liebert, Inc., 1996

Gary Alt, editor, Microsoft Encart a Encyclopedia 2000

Paul Cheney, MD lecture 1999

NutriHarmony Whey Protein

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Other Known Whey Proteins

- Sources: Clean dairy sources outside the U.S.
  From unique clean areas not contaminated with drugs, steroids, chemicals or most U.S. pollution
- Live Food – it is undenatured
  Protein and enzymes are fully preserved – raw Energy
  Only raw, live whey protein can increase glutathione production, which is essential for growth hormone production
- During processing we use only gravity fed dryers which maintains the integrity of the protein
- Never heat treated which maintains protein integrity
- According to Dr. Colgan in his book ***'The New Nutrition',*** "New studies show that protein from WHEY enhances immunity at up to 500%. Other proteins have little effect".

- Source: U.S.A
  Possible contamination with steroids, pesticides, herbicides, hormones, antibiotics or enhancement chemicals
- If hydrolyzed or predigested, hot pig's bile is most often used.
- Some contain other added proteins as isolates or individual amino acids, caseinates casein and milk protein concentrates with lactose
- Mechanically compressed through filters and heated drying plates which disrupts protein integrity
- The process of ultra pasturization uses excessively high heat which denatures whey protein
- Dried using temperatures in which protein is further denatured