

## **Bioactive Protein Improves Human Health**

When most people think of protein supplementation, they think of bodybuilding. New research in the field of clinical nutrition reveals that protein not only helps your muscles get bigger, but actually plays a crucial role in the healing process of the entire body.

A closer look at proteins uncovers that they are fundamental to all forms of life. Every living creature, including humans, are made up of protein. They not only make up the structure of our bodies; they also play an important role in carrying out vital functions. Enzymes, hormones and neurotransmitters are all examples of proteins in the body. These chemical messengers dictate the way your body functions. Proteins also help make up antibodies that are involved in the immune response. As an energy source, protein is equivalent to carbohydrates in providing 4 kcal per gram. In general, proteins play a vital role in every structural, metabolic and physiologic process required for life.

Proteins are made up of amino acids. These amino acids bond together into long chains to form proteins. The amino acids must be present in the proper ratios in order for protein synthesis to occur. There are 20 amino acids, with nine of these being essential. This means that the body cannot synthesize these amino acids on its own, and they must be supplied through the diet. The other 11 non-essential amino acids are equally important in protein building, but can be synthesized by the body. Ideally, when choosing a protein source, you want one that supplies all nine essential amino acids as well as the remaining eleven non-essential. Recently, research studies have shown that the most complete protein source is whey protein. Whey contains all the essential amino acids in the proper ratios and is considered a complete protein. As a matter of fact, whey protein is superior to and has a higher biological value than eggs, milk, meat or fish. It is also superior to vegetable-based proteins such as soy, potato, rice, wheat, and beans. The biological value is a measurement of how well the body can use the protein for growth and maintenance.

The amount of quality protein a person should take each day is approximately 60-70 grams per day or 0.8 – 1.5 grams per kilogram of body weight. These figures can vary depending on the quality of the protein source and the amount of repair and maintenance is needed.

Whey protein also contains immune factors such as immunoglobulins (Ig), lactoferrin, beta-lactoglobulin, and alpha-lactalbumin. These same factors are present in the colostrum that passes from mother to baby during lactation. They act as antibodies and help protect the body from potentially pathogenic microorganisms, such as bacteria and viruses. Since enzymes during digestion do not break down these immune factors, taking a whey protein supplement is an effective way to increase immune function. Animal studies have shown that because of the abundance of immune factors, whey protein was as effective as colostrum in protecting newborn calves from disease. Whey protein also contains substances that play an important part in the resistance against intestinal bacterial infections, particularly *Escherichia coli*. Intestinal infections can lead to yeast overgrowth, chronic fatigue, malabsorption, digestive disorders and overall reduction in immune system function.

Another clinical application to whey protein supplementation is preventing the wasting syndromes found in HIV/AIDS and Cancer. This wasting, or cachexia, is a

complicating factor in the progression of these disease conditions. Studies show that 5-10% weight loss due to lean muscle wasting was associated with significantly increased risk of opportunistic complications and death. The goal of nutritional therapies should address the need for maintenance of lean body weight. Because malnutrition is the major factor in cachexia, dietary supplementation with a quality protein is important in the overall care and quality of life of patients with HIV or Cancer. Clinical trials of whey protein supplementation has revealed that not only is it effective for preventing wasting syndromes, but it actually increases the body's CD4 count (a measurement of the immune system).

Protein supplementation is important for anyone who has trouble eating enough high quality sources through the everyday diet. Children are great candidates for protein since they have a much greater demand to meet the needs of physical growth and tissue maintenance. In today's fast food world it is difficult to fulfill these requirements with the diet our children are exposed to. The elderly can also benefit from protein supplementation to improve skeletal muscle mass, liver function, bone density, insulin sensitivity, aerobic capacity and growth hormone regulation. Vegetarians should also consider whey protein supplementation since most vegetable-based proteins are incomplete and do not contain all the essential amino acids.

As science marches on, the health care researchers are uncovering more and more nutritionally based therapies to deal with disease conditions. It is important to keep up with the information and utilize it in your life. By reading publications like *NEW LIVING*, you will stay on top of the latest in the field of clinical nutrition and alternative medicine.

Dr. Bernie Sengstock is a licensed Chiropractor in the State of New York and has completed 300 hours of post-doctorate studies in the field of Rehabilitation. Clinical Nutrition is a large part of his practice, which is located at 369 East Main Street, East Islip, NY 11730. To make an appointment for a consultation/ examination, or to order bioactive whey protein call (516) 277-0060.