



Protease

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Protease - Proteolytic Enzymes

The vast majority of metabolic enzymes in the body – the enzymes that regulate everything from liver function to the immune system – are proteases, or proteolytic enzymes, which regulate protein function in the body. Proteolytic enzymes (proteases) help to digest the proteins in food. Although the body produces these enzymes in the pancreas, certain foods also contain proteolytic enzymes.

Papaya and pineapple are two of the richest plant sources, as attested by their traditional use as natural "tenderizers" for meat. Papain and bromelain are the respective names for the proteolytic enzymes found in these fruits. The enzymes made in your body are called trypsin and chymotrypsin.



The primary use of proteolytic enzymes is as a digestive aid for people who have trouble digesting proteins. However, proteolytic enzymes may also be absorbed internally to some extent and may reduce pain and inflammation.

Deficiencies in proteolytic enzymes do occur, usually resulting from diseases of the pancreas (pancreatic insufficiency). Symptoms include abdominal discomfort, gas, indigestion, poor absorption of nutrients, and passing undigested food in the stool.

In order to understand proteolytic enzymes, it's important to have a basic understanding of enzymes in the body. Enzymes are proteins that facilitate chemical reactions in living organisms. In fact, they are required for every single chemical action that takes place in the body. All tissues, muscles, bones, organs and cells are run by enzymes. The digestive system,

immune system, bloodstream, liver, kidneys, spleen and pancreas, as well as the ability to see, think, feel and breathe, all depend on enzymes. All of the minerals and vitamins consumed, and all of the hormones the body produces need enzymes in order to work properly. In fact, enzymes govern every single metabolic function in the body: stamina, energy level, ability to utilize vitamins and minerals, immune system and more. The vast majority of metabolic enzymes in the body – the enzymes that regulate everything from liver function to the immune system – are proteases, or proteolytic enzymes, which regulate protein function in the body.

Foods that are enzyme dead (cooked or processed) force the body to divert its production of enzymes away from proteolytic enzymes, which govern metabolic functions, into digestive proteolytic enzymes designed to break down dead proteins in our diets. The consequences of this diversion are enormous. Conversely, the benefits of supplementing with proteolytic enzymes are profound.

The most obvious use of proteolytic enzymes is to assist digestion. Several studies found that proteolytic enzymes might be helpful for neck pain, osteoarthritis, and Post-herpetic neuralgia (an aftereffect of shingles).

Proteolytic enzymes have been evaluated as an aid to recovery from the pain and inflammation caused by surgery or that follow injuries (especially sports injuries). A double-blind, placebo-controlled trial published in the 1960s found that use of proteolytic enzymes helped reduce the discomfort of breast engorgement in lactating women.

Some alternative medicine practitioners believe that proteolytic enzymes may help reduce symptoms of food allergies, presumably by digesting the food so well that there is less to trigger allergic reaction.

Another theory popular in certain alternative medicine circles suggests that proteolytic enzymes can aid rheumatoid arthritis, lupus, and other autoimmune diseases. It is thought that these diseases are made worse when whole proteins from foods leak into the blood and cause immune reactions. Digestive enzymes are said to help foil this leaky gut problem.

Several studies provide preliminary evidence that proteolytic enzymes might be helpful for various forms of chronic pain, including neck pain and osteoarthritis. It's possible to use good-quality digestive enzymes for both functions and receive a significant amount of benefit.

Some of the benefits of supplementing with a protease formula include:

Reducing inflammation: Inflammation is a natural response of the body to injury. However, excessive inflammation retards the healing process. Protease enzymes reduce inflammation by neutralizing the biochemicals of inflammation to levels at which the synthesis, repair and regeneration of injured tissues can take place. This can have immediate impact on improved heart health, cancer prevention and recovery, and Alzheimer's prevention. It also helps speed up recovery from sprains, strains, fractures, bruises, contusions, surgery and arthritis.

Cleansing the blood of debris: Proteolytic enzymes are the primary tools the body uses to "digest" organic debris in the circulatory and lymph systems. Supplementing merely improves the effectiveness of the process.

Dissolving fibrin in the blood, reducing the risk of clots: Certain specialized proteases are extremely effective at improving the "quality" of blood cells, optimizing the ability of blood to flow through the circulatory system, and reducing the risk of clots. This is extremely important in reducing the risk of stroke. It also makes using proteolytic enzymes during long airplane travel a very good idea, as they minimize the potential of blood clots in the legs.

Maximized immune system: The primary vehicle the immune system uses for destroying invaders is enzymes. Macrophages, for example, literally digest invaders with proteolytic enzymes. Supplementation significantly improves the ability of the immune system.

Killing bacteria, viruses, molds and fungi: Bacteria, viruses, molds and fungi are protein/ amino acid-based. Proteolytic enzymes taken between meals literally go into the bloodstream and digest these invaders.

Autoimmune diseases: Large undigested proteins make their way into the bloodstream and form circulating immune complexes (CICs), which trigger allergies and autoimmune diseases. Supplemental proteolytic enzymes clean CICs out of the body, thereby reducing allergies and autoimmune conditions. In addition, this helps with sinusitis and asthma.

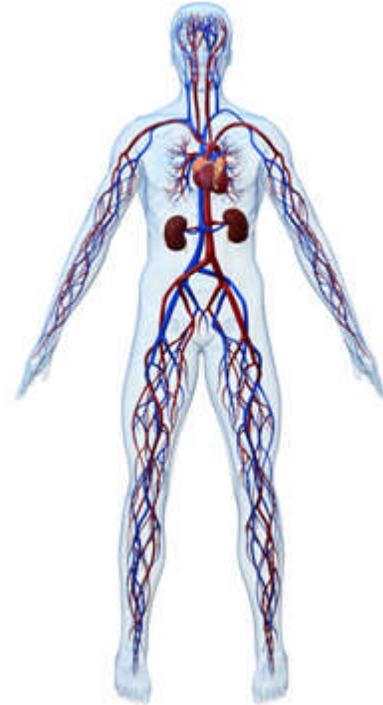
Dissolving scar tissue: Scar tissue is made of protein. Proteolytic enzymes can effectively "digest" scar tissue – particularly in the circulatory system. And finally, a properly designed supplemental proteolytic enzyme formula can help clean out the lungs and aid in detoxing.

Cautions:

Protease supplementation should not be used 2 weeks prior to surgery as it may thin the blood. Initiation of post operative therapeutic use of protease is recommended in cases of surgery. Check sources of protease enzymes to avoid allergies - papaya, pineapple or pork.

One proteolytic enzyme, pancreatin, may interfere with folate absorption. In addition, the proteolytic enzyme papain might increase the blood-thinning effects of warfarin and possibly other anticoagulants.

The proteolytic enzyme bromelain might also cause problems if combined with drugs that thin



the blood. In addition, there are concerns that bromelain should not be mixed with sedative drugs.

Finally, bromelain may increase blood concentrations of certain antibiotics.



NSP has a wide variety of Protease products. These include Protease Plus (90 caps) and Protease, High Potency (60 caps) products.

References

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Yours in Good Health!

Sincerely,

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