

Strength, energy, stamina and coordination are the elements of peak physical performance. They are acquired through proper training, diet and the help of nutritional supplements. But all too often, our efforts are rewarded with sore, fatigued muscles that aren't up to vigorous exercising. If an injury occurs, training can come to a complete halt.



Systemic Enzymes FOR SPORTS INJURIES

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muscles adapt to exercise by growing stronger during the interval between workouts. Your ability to perform at a high level depends on how well the body recovers during this period. Much has been said about the importance of vitamins, minerals, antioxidants and protein for repairing tissues, but unless you are an Olympic athlete or live in Europe, you may not be familiar with enzyme therapy. Before you can appreciate the importance of enzymes, a basic understanding of what they are and their role in the body will be useful.

THE MISSING LINK

Enzymes are often referred to as “the spark of life” and “the missing link in nutrition.” Without enzymes,

life would not be possible. Enzymes are proteins. They are found in all plant and animal cells. Scientists describe enzymes as catalysts that initiate chemical reactions or speed processes. These processes can be seen throughout nature. For example, it is enzymes that are at work when fruit ripens or milk is turned into cheese and yogurt. In the body, millions of enzymes are involved in all of the anabolic (building) and catabolic (breaking down) processes that we call metabolism.

The body's ability to function, combat disease or repair itself after injury is related to the amount of enzymes accessible. The body makes most of the enzymes it needs, but its enzyme-production capacity is greatly reduced with age. When we reach the age of 25 or 30, enzyme levels begin to fall and the aging process is initiated.

It makes good sense to eat enzyme-rich foods to avoid overworking the body's enzyme capacity. The typical American diet of cooked and highly processed foods is enzyme-depleted. Fresh, raw vegetables and fruits and their juices are good sources. Sprouted grains and seeds have the highest enzyme content. Nuts have enzymes but also have enzyme inhibitors. Sprouting is a good way to kill most of the inhibitors while keeping the enzymes alive.

ENZYME PRIORITIES

The digestive tract has first priority on enzyme production. Food must be digested by enzymes to extract the nutrients that fuel the body. Poor digestion can ultimately weaken your ability to fight disease and result in an overtaxed system. Symptoms such as bloating, indigestion, flatulence and general discomfort after meals are signs that you may be lacking in enzymes. For example, people who are lactose-intolerant have difficulty digesting dairy products because they do not produce sufficient amounts of the enzyme lactase. To digest protein, adequate protease is needed. For those on a high-protein diet, it makes good sense to add a sufficient amount of this enzyme with each meal or protein shake. An enzyme supplement, such as Digest Gold™ from Enzymedica, taken with or just before meals can be helpful in preventing digestive disturbances and maximizing absorption of nutrients.

ENZYMES FOR ATHLETIC PERFORMANCE AND SPORTS INJURIES

While many people are familiar with the use of supplements to aid digestion, there are other

important applications for supplemental enzymes. Enzymes can be used “systemically” throughout the body for different health-supportive functions. Unlike digestive enzyme use, which does not require absorption, the goal of systemic enzymes is to get the enzymes into the bloodstream and to various tissues to assist cellular functions. For systemic purposes, enzymes are taken on an empty stomach to facilitate entry into the circulatory system.

The key systemic enzymes are proteolytic (protein-digesting), specifically protease, papain, bromelain, trypsin and chymotrypsin. Proteolytic enzymes cleave protein compounds by hydrolysis, that is, they split the material by incorporating water. In the bloodstream, the enzymes travel to specific sites where they break down and “digest” proteinaceous or fibrous waste matter, including cell debris, bacteria, cysts, tumors, dead tissue, immune and inflammatory complexes, and various toxins. They also stimulate phagocytosis, the swallowing of pathogens by immune cells in the bloodstream.

In one study, runners were given protease supplements or a placebo four times a day for three days. They were evaluated for mood, muscle soreness and pain threshold 24 and 48 hours after running 30 minutes at about seven miles per hour. The result was less soreness, improved pain threshold and no mood change in those taking the protease supplements compared with the group who took the placebo.

In the United States, systemic oral enzymes have been overlooked by most physicians. The clinical use of systemic enzyme supplements is most widely practiced in Germany where they are commonly used for pain, inflammation, swelling, blood-thinning and immune support. More than 50 studies have confirmed their use in treating rheumatoid arthritis, osteoarthritis and sports injuries, and maintaining good heart health and immune function. In Germany, enzymes are second only to aspirin in over-the-counter remedies for pain. Olympic athletes are given systemic enzyme supplements to enhance performance and speed recovery from sports injuries. There is scarcely a top athlete in Europe or Australia who is not familiar with enzyme therapy.

In contrast to pharmaceutical anti-inflammatories, such as nonsteroidal anti-inflammatory drugs like aspirin and ibuprofen, enzyme preparations support and accelerate the natural inflammatory healing response without letting it get out of hand, resulting in a pain-relieving effect. This is accomplished by

improved microcirculation at the site of inflammation and removal of inflammatory products.

HOW TO USE ENZYME SUPPLEMENTS

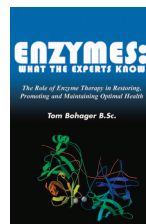
Enzymes can help you train harder with fewer injuries. For muscle, tissue and joint support, use Enzymedica Repair™. This product contains the highest amount of proteolytic enzymes that have exhibited qualities that reduce discomfort, speed recovery and increase circulation. For pain and injuries, take two capsules, two to three times per day, at least one hour before or two hours after a meal. You may take it preventively before and after strenuous exercise to speed recovery. SerraGold™ is a proteolytic enzyme blend that contains the enzyme serratiopeptidase. Serratiopeptidase has been shown effective in improving circulation, speeding tissue repair, alleviating joint discomfort and as having anti-edema qualities. One capsule can be taken before bed or upon rising. To enhance digestion and assimilation of food and nutrients, take one or more capsules of Enzymedica Digest Gold at the beginning of each meal. Although proteolytic enzymes are nearly free of side effects, individuals taking anti-coagulant drugs should consult their physician. Do not use systemic enzymes within 24 hours of surgery. Women may use Digest Gold, Repair or SerraGold during pregnancy.

Enzymes are the spark of life and are vital to all living things. To achieve the status of health and fitness you desire, include high-quality, plant-based enzyme supplements in your daily regimen.

The Enzymedica Difference

Since 1998, the mission of Enzymedica has been to offer the most effective enzyme products available. They use the expertise of doctors, researchers and clinicians in formulating each product. Since they are purists when it comes to their commitment, their entire focus is on enzymes. Enzymedica uses an exclusive Thera-blend process for its protease, lipase, amylase and cellulase. It developed this proprietary blend so that each of these enzymes actually represents multiple strains blended for their ability to break down numerous bonds in varying pH levels. This is an attempt at representing nature in its complexity rather than seeking to simplify with synthetic approaches. In terms of label description, Enzymedica combines optimal active units with the best, most broad-spectrum protein-digesting blend possible. A single protease, for example, could provide more units per milligram than a multiple protease. However, the active pH would be narrow and the number of protein bonds it could break would be limited. Another feature of Enzymedica is that they use no fillers in any of the formulations. You will no doubt notice how small the capsules are in comparison to similar products. This is the result of using concentrates with no fillers. Because each batch is third-party tested, Enzymedica ensures that the products will always meet label claims.

Resources



Purchase your copy of *Enzymes: What the Experts Know* from your local health food store, natural health retailer or online booksellers (www.amazon.com).

You can also view the book at the Enzymedica website

at <http://www.enzymedica.com/products/>.

To find a local source use their store locator service at www.enzymedica.com or call them toll free at (888) 918-1118.

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Ken Babal has a nutrition counseling practice in Los Angeles and is author of several books including *Good Digestion: Your Key to Vibrant Health* (Alive, 2000).

