

Enzymes and inflammation

By Todd Stumpf

Enzyme therapy is quickly making its way up the list of nontraditional treatments and health maintenance methods.

For chiropractors, particularly where nutrition-deficiencies and inflammation are concerned, enzyme therapy is something that may benefit entire patient rosters.

The benefits of enzymes are many: Improving immune system through increased regulation of macrophages and natural killer (NK) cells; cleansing blood of debris; killing



bacteria, viruses, molds, and fungi; improving autoimmune conditions, especially inflammatory conditions; dissolving scar tissue (and improving the circulatory system); and aiding in detoxification.

Enzymes also play a critical role in combating inflammation, something any practitioner — and patient — could find useful.

“When I first started using enzymes over 10 years ago, I wanted to see proof that enzymes do, in fact, help with inflammation,” says Dr. Terry Smith, DC, who specializes in sports injury recovery and metabolic inflammatory disorders. “Because patients reported amazing recovery stories, I had to rule out the placebo affect. The results in the blood work were very impressive, helping reduce C-reactive protein, sedimentation rate, improving creatine

kinase, and LDH as well. After 10 years, we still recommend enzymes for almost every patient with soft tissue injury as well as almost all arthritis and inflammatory bowel disorders.”

Inflammation is a natural response to injury, but excessive inflammation can slow the healing process by clogging up the tissues. Proteolytic enzymes, which digest protein, neutralize inflammation-causing chemicals and help reduce inflammation. With athletic injuries especially, an abnormal amount of inflammation can occur.

“Enzymes, in our clinical experience, can speed up the recovery process by almost 50 percent,” says Smith, owner of four clinics in the Chicago area. “That is significant to any athlete who wants to get back in the game.”

Such enzymes as bromelain (found in pineapple stems) and papain (found in papaya), pancreatin, trypsin, chymotrypsin, and rutin can increase the potency of NK cells and increase the function of macrophage cells by fourfold to sevenfold, according to Smith. Proteolytic enzymes also help degrade pathogenic complexes improving the immune system significantly.

Bromelain and other enzymes also alter the inflammatory process by reducing swelling in mucous membranes, decreasing capillary permeability, and dissolving clot-forming fibrin deposits. By reducing the blood viscosity, enzymes can improve circulation, thus allowing greater oxygenation and an increase of healthy nutrients to the injured area. Other benefits include regulating transportation of harmful waste products away from the injury. As inflammatory proteins break into smaller particles, enzymes assist in the passage of proteins into the lymphatic system, which serves as the body’s garbage disposal system.

“All of this leads to a quicker and dramatic reduction in swelling accompanied by relief of pain and increased range of motion,” says Smith, a certified nutritionist, and strength and conditioning specialist.


As Smith notes, the list of benefits of enzymes and systemic enzyme therapy is long and growing. With that in mind, practitioners “should consider the use of enzymes for the management of many chronic and acute inflammatory conditions,” Smith says. “With enzyme therapy, it is very easy and inexpensive to monitor treatment through blood tests and patient pain scales.”

Smith says it is important to choose quality enzymes and use correct dosage for the desired outcome. He adds that a common problem is doctors often underdose, leading to lack of results.

Smith also points to research that shows how proteolytic enzymes' ability to reduce inflammation is equal to or greater than NSAIDs, minus the side effects of more common pain relievers, which can be significant when used long term.

While bodies naturally produce digestive and metabolic enzymes, many people's enzyme production falls short, due to poor dietary and lifestyle habits over time. Natural degeneration occurs in part because of a lack of necessary enzymes to regenerate tissues. Raw foods contain enzymes, but only in amounts needed for digesting those foods. The average American's diet does not contain enzymes, causing the body to use its own supply to compensate. When the body has a greater need, inflammation, degeneration, and cell death begins.

Supplementation, then, becomes key. Enzymes can be obtained through supplementation. Doctors can turn to the more natural means of treating conditions, keeping their patients from potentially harmful medications.

"I am not opposed to the use of drugs to save a person's life," Smith says. "Let's just not let people use them for conditions that can easily be helped by proper dietary and lifestyle changes. Due to the ever-degrading quality of our food, we can no longer achieve optimal health through food alone. Supplementation is essential and of utmost importance is the use of enzymes in our daily lives." 

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