Dynamic Chiropractic

VITAMINS / SUPPLEMENTS

Proteolytic Enzymes -- Part I

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Proteolytic enzymes have been an important part of the chiropractor's arsenal for reducing inflammation for many years. Today, we will review the major types of proteolytic enzymes used as well as an explanation of weights, measures, and dosages.

There are four major types of proteolytic enzymes: trypsin, chymotrypsin, papain, and bromelain. Note: There are other substances available to the chiropractor that have anti-inflammatory properties, such as ascorbic acid, bioflavonoids, herbs, and certain fatty acids. This discussion will be limited to enzymes.

Although chiropractors have been getting good results from proteolytic enzymes for many years, there are still a surprising amount of health care professionals, especially non-chiropractors, who question their ability to produce the desired effect. Their argument is that since enzymes are proteins, they are digested like any other protein and, thus, have no effect other than protein in the diet. This argument is logical. This argument is also wrong.

My literature review yielded studies beginning with Brendel, et al., in 1956, who demonstrated that trypsin had an anti-inflammatory action when administered buccally.[1] In 1957 Martin, et al.,[2] showed that when trypsin, chymotrypsin, and papain were injected into the small intestines they were not denatured or digested but, in fact, absorbed with enough of the molecules intact to exert a marked systemic anti-inflammatory effect. They theorized that enterically coating these substances would enable them to be administered orally. Ambrus, et al.,[3] showed that oral administration of enterically-coated trypsin and chymotrypsin resulted in increased specific blood activity changes that could occur only if these enzymes were absorbed intact. Vakians[4] demonstrated that enterically-coated chymotrypsin was absorbed orally and remained functional in the blood stream for four hours after administration. Miller and Opher[5] showed in 1964 that enterically-coated bromelain given orally caused an increase in blood serum proteolytic activity. Innerfield and Wernick[6] showed in 1961 that oral administration of papain produced a decreased clotting time.

There are so many examples in the literature of the unmistakable physiological and biochemical action of orally-administered, enterically-coated proteolytic enzymes that the classical theory of a protein-impermeable intestinal barrier is simply incorrect.[7] Although this author has used proteolytic enzymes for many years, I was overwhelmed by the number of studies demonstrating their powerful anti-inflammatory effect.

The precise mechanism of absorption of proteolytic enzymes across the gastrointestinal barrier is not yet fully understood. Those interested in this topic should read Cichoke's review of the molecular absorption of protein molecules.[8] What is clearly understood is that proteolytic enzymes are absorbed

and thus beneficial for many inflammatory conditions, sports related or otherwise.

In part II we will address why proteolytic enzymes are not used more by chiropractors. Included in the discussion will be the very confusing weight and measure issue, label instruction, conversion factors, and tips on how to dose for maximum effect.

References

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