

# *enzymes*

## **The Universal Supplement**

by Ronald L. Myers, CNC

It has been written that certain biochemical processes accomplished in milliseconds, could take up to 200 years to complete without enzymes!! It has been written that enzymes are the master controllers of the body because they initiate biological processes; they terminate biological processes; they speed them up and slow them down as the body needs at any given time. As you can see, enzymes are extremely important to the human body. But, it has also been written that as we age, our body's ability to produce enzymes declines. Thankfully, various foods provide these life enhancing enzymes and in our day and age they are available in tablet or capsule form as a food supplement. In this issue I will focus on a number of protocols where enzyme supplementation is extremely helpful keeping in mind that the addition of enzymes to ANY nutritional protocol enhances and speeds results.

### **DEAD OR ALIVE?**

Of primary importance when considering enzyme supplementation is to choose an enzyme product containing *live* enzymes!! This may seem like a ridiculous statement until you understand that not all enzyme products on the market today contain LIVE, active enzymes. Here is a little test you can perform in your office to determine the live enzyme products from the “also ran” products. Fill a shot glass with milk; crush 3 tablets or open 3 capsules of the product in question; place them in the milk and wait 20 to 30 minutes. If the enzymes in the product are live they will curdle the milk in the length of time stated above. If the milk does not curdle in this time, the supposed enzymes in that product are dead or for some reason inactive! Choose again.

### **AS ALWAYS—ABSORPTION IS THE ISSUE!**

Another issue that is often raised regarding ANY discussion of enzyme therapy is the issue of “Absorption”. So I will cover this issue here and now and hopefully put it to rest for those of you who have heard this and wonder if it is true and for those you who for some reason actually believe this.

Because of their large molecular size, enzymes are regarded as macromolecules. The absorption of intact macromolecules, including enzymes, was thought to be impossible for years. However, thanks to modern technology, we are able to prove that these large enzyme molecules are absorbed.

The “father of enzymes”, Dr. Max Wolf, was the first researcher to conduct studies that indicated the absorption of enzymes. He injected indigo blue dye into the skin on the backs of laboratory animals creating a dime sized blue spot. He administered oral placebo to the animals and

observed little change to the size of the blue spot. However, when he administered oral enzymes to the animals the size of the blue spot would increase to cover the entire back of the animals within the first 2 to 3 hours after the oral dose was given. This greatly encouraged Dr. Wolf to continue his research and due to the fact that techniques available at the time could not confirm absorption into blood or lymphatic circulation, emphasis was placed on demonstrating pharmacological and clinical effects derived from oral administration of enzymes.

The bottom line on macromolecular absorption is this, using modern techniques and equipment several researchers such as Menzel et al.,<sup>1</sup> Steffen et al.,<sup>2</sup> and Seifert et al.,<sup>3</sup> have verified absorption of isotope labeled enzymes from the G.I. tract of rabbits, guinea pigs, rats and humans! Here is a brief summary of how this occurs. Macromolecules normally penetrate the mucosal surface via the transcellular route, since the intercellular bridges (tight junctions) between the enterocytes prohibit free intercellular or paracellular passage. The macromolecule binds to the enterocyte cell membrane facing the intestinal lumen. This is followed by phagocytosis with entrapment of the macromolecular material within the pinched off fragments of the cellular membrane via a process of vesiculation known as pinocytosis. In the interstitial space, the macromolecules become available to macrophages and lymphoid cells. Those not taken up by these cells, eventually escape into the blood or lymph.

Also, please consider that other macromolecules such as bile and pancreatic enzymes have been shown to be reabsorbed from the intestines where they were released by the pancreas or gallbladder. This is known as enterobiliary and enteropancreatic circulation. Antibodies or gamma globulins, which are also macromolecules contained in mother's milk, have been shown to pass from the intestines of nursing babies into their circulatory and lymph systems thereby permeating the baby's entire body. End of story.

### **ENZYMES AS BIOLOGICAL RESPONSE MODIFIERS (BRM's)**

These are substances of biological origin, administered to patients in order to improve or modify a natural body system response; many times this is directed toward the immune system. These treatments, biological in nature, are considered *safe*, natural and *rational* approaches that stimulate normal biological responses and defenses. It is the ability of enzymes to function as BRM's that makes them a valuable addition to any natural, nutritional protocol.

### **APPLICATIONS**

Please keep in mind that adjunctive supplementation with live, oral enzyme preparations can reduce active treatment time by as much as 50%. This is certainly significant and makes the addition of enzymes to the protocol cost effective; especially for patients over 40 years of age who have probably begun their decline in endogenous enzyme production.

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<sup>1</sup> Menzel, E. J.; Werk, W.; Study on the absorption of Wobenzym. Report from the immunological Institute of the University of Vienna and the Medical Enzyme Research Institute, Munich, 1978.

<sup>2</sup> Steffen, C.; Menzel, J.; Smolen, J.; Intestinal absorption of an enzyme mixture (Wobenzym) labeled with 3H. Acta Medica Austriaca 6:13, 1979.

<sup>3</sup> Seifert, J. et al.: Quantitative analysis about the absorption of trypsin, chymotrypsin, amylase, papain and pancreatin in the G. I. tract after oral administration. General Physician (Allgemeinarzt) 19(4): 132 – 137, 1990.

I think you are all familiar with the effectiveness of enzymes in reducing pain, swelling, inflammation, and as an aid to digestion, so I will cover other applications where enzyme therapy has proven extremely effective that are not well known.

***Is enzyme therapy SAFE?***— This is a fair question. As I have written before, there are some contraindications; I list them here again. Patients taking anticoagulant drugs (or hemophiliacs); patients who are pregnant or nursing; patients presenting alpha 1 antitrypsin deficiency (see eBytes Issue 24). Other than these few situations, current research shows NO adverse affects from even long-term oral enzyme therapy. In a number of research projects, Guinea pigs, rabbits, rats and dogs were given daily doses correspondent to 250 tablets a day for a 140 man without ANY negative effects whatsoever! In fact, researchers consider the fact that oral enzyme preparations may interact with therapeutic drugs a plus. These patients usually do well on a reduced dose of the drug and have shorter recovery times.

***Immune System***— As little as a hundred years ago, this “system” that protects us every second of our life was unknown. Today, research reports are available indicating that as much as 60% or more of our immune system is a function of our gastrointestinal system! We have come a long way baby, but still we are just scratching the surface of this complex and miraculous system that protects us from known and unknown invaders. Enzyme therapy enhances immune function by removing impaction, debris and reducing inflammation in the human G. I. system, thereby enhancing *its* function.

Enzymes aid the immune system by interrupting the complement cascade leading to activation of killer cells. The admittedly over simplified version (due to space limitations) of how this occurs is as follows. In a perfect world, antibody attaches to antigen forming an immune complex. Antibody then signals for destruction of the immune complex by macrophages. In the real world, what happens sometimes is because the antibody is tiny and the antigen is large the signal from the antibody may be too weak to attract macrophages to destroy the complex. It is then off the immune systems radar screen. These immune complexes can eventually lodge in tissue where they become pathogenic immune complexes and macrophages have difficulty discovering and destroying them. One other phenomenon is important to mention here. The more these off the radar screen immune complexes multiply, the more they inhibit the release and activity of macrophages. The worst is yet to come. These now tissue bound pathogenic immune complexes are able to signal the complement systems cascade of enzymes leading to tissue destruction and a major inflammatory reaction. This is the beginning of an autoimmune disease as the body begins attacking itself.

Researchers feel the mechanism of action of enzymes in these conditions is by enzymatic interruption of the complement cascade, breakdown of pathogenic immune complexes and activation of macrophages.

Conditions that fall clearly into the above category and which have been effectively treated with enzyme therapy are Crohn’s disease, Rheumatoid arthritis, Lupus Erythematosus, Ulcerative Colitis and Glomerulonephritis. Consider making **Intenzyme Forte** the centerpiece of the above protocols.

**Multiple Sclerosis**— American, Greek, Czechoslovakian and German researchers have found that most MS patients have unusually high serum levels of circulating immune complexes. For some yet to be determined reason, these immune complexes lodge in the myelin of the nervous system causing it to be viewed as an antigen with the expected attack by the complement system and resulting tissue destruction. This scenario would put MS on the rapidly growing list of autoimmune conditions. Consider adding **Intenzyme Forte** to your MS protocol.

**Herpes Zoster**— How many of your patients who suffer with “shingles”, an extremely painful condition, would love a non-drug remedy with NO side-effects? The head physician at Wald Sanitarium, Dr. W. Bartsch, reports “at this time we regard the treatment of herpes zoster with proteolytic enzymes as being the therapy which is most effective, free from side-effects and most optimal.” Dr. Bartsch made this statement after treating hundreds of herpes patients with nothing but proteolytic enzymes for their condition. Great results were achieved when saturation dose enzyme therapy was begun within 24 hours of the appearance of the herpes blister. An important lasting benefit from enzyme therapy is not one single patient treated with this therapy experienced post-herpetic neuralgia!<sup>4</sup> This is significant. Research comparing patients treated with drug therapy for herpes zoster with those treated with enzymes, found only those treated with enzymes did NOT experience post-herpetic neuralgia. Herpes zoster is a virus and this is clear indication of the effectiveness of enzymes as part of any anti-viral protocol. (Saturation dose could be as high as 10 tablets 4 to 8 times a day for 48 to 72 hours.) Consider making **Intenzyme Forte** the centerpiece of your herpes zoster protocol along with **L-Lysine HCl**.

#### **ENZYME PRODUCTS AVAILABLE FROM BIOTICS RESEARCH CORPORATION**

*Digestive Aid --*

*Bio 6 Plus* (pancreatic enzymes)

*Anti-inflammatory, anti-parasitic, etc*

*Bromelain Plus*  
*Bromelain Plus CLA* (contains ficin)  
(suitable for vegetarians, contains no  
trypsin or chymotrypsin)

*The Original European Formula*

*Intenzyme Forte*

**Available from Viotron International, Ltd**  
**(800) 437-1298**

<sup>4</sup> Bartsch, W.: Treatment of zoster with proteolytic enzymes, The Informed Physician, 2:424 – 429, 1974.