Introducing Systemic Enzyme Therapy

Webinar 2016
What Are Enzymes?

Enzymes are protein molecules, composed of long chains of amino acids. Enzymes are the biocatalysts necessary for the chemical reactions associated with breathing, growth, reproducing, digestion, and all other metabolic functions.

For most people under the age of 25, enzymes are efficiently produced by the body to maintain optimal health. As we age, our body’s production of enzymes decreases. This reduction of enzyme levels may reduce the efficiency of our normal body functions. These enzymes are needed to maintain a healthy immune system, healthy joints, good circulation, and an overall balanced reaction to injury.

The older we get, our need for enzyme production increases, while the amount of usable enzymes in our body is gradually depleted. Enzyme deficiency can lead to a wide variety of health problems.
What Are Digestive Enzymes?

Digestive enzymes work in the digestive tract where they help break down fats, carbohydrates, and proteins for improved digestive function and nutrient absorption.
What Are Systemic Enzymes?

**Systemic enzymes** are those that operate throughout the body in every system and organ. Following their resorption from the gastrointestinal tract, enzymes travel to their “site of action” in the body via the bloodstream, where they ultimately become effective. This is known as the “systemic effect”. The term “systemic” indicates that the agent (in this case the enzymes) is distributed throughout the entire body.

Supplementation with systemic enzymes may help the body to more efficiently regulate the metabolism, thereby reducing the physiological effects of aging. Physicians in Europe and Asia have long prescribed enzyme supplements to restore enzyme levels and promote natural healing. Systemic enzymes are formulated to resist the acidic environment of the stomach so that they can be absorbed into the bloodstream from the small intestine. Once in the bloodstream, the enzymes are able to be used throughout the entire body.
Serrapeptase Overview

Serrapeptase is a key ingredient to consider when choosing the right enzyme. To ensure maximum absorbency without activity loss, an enteric coated delivery system is essential.

Serrapeptase is a naturally occurring, physiological agent with no inhibitory effects on prostaglandins and is devoid of gastrointestinal side effects. It is a proteolytic enzyme isolated from the micro-organism Serratia E15. This enzyme is naturally processed commercially today through fermentation.

Serrapeptase digests non-living tissue, blood clots, cysts, and arterial plaque and inflammation in all forms. The late German physician, Dr. Hans Nieper, used Serrapeptase to treat arterial blockage in his coronary patients. Serrapeptase protects against stroke and is reportedly more effective and quicker than EDTA Chelation treatments in removing arterial plaque. He also reports that Serrapeptase dissolves blood clots and causes varicose veins to shrink or diminish.

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Enzyme Fights Inflammation
Our bodies have a love-hate relationship with inflammation. On the one hand, inflammation is a natural response, necessary to protect the body from invading organisms. On the other hand, inflammation can limit joint function, and destroy bone, cartilage and other articular structures.

An elusive goal of scientists and physicians has been to find a side-effect-free substance to reduce the pain and inflammation associated with fibrocystic breast disease, rheumatoid arthritis, idiopathic edema, carpal tunnel syndrome and post-operative swelling. It appears that the search may be nearing an end, thanks to an enzyme Serrapeptase produced by the larval form of the silk moth.

Serrapeptase is proving to be a superior alternative to the non-steroidal anti-inflammatory agents (NSAIDs) traditionally used to treat rheumatoid arthritis and osteoarthritis. Its uses have also been extended to the treatment of chronic sinusitis and postoperative inflammation, and some researchers believe the substance can play an important role in arterial plaque prevention and removal.

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Harmful Effects of NSAIDs

NSAIDs, which include aspirin, ibuprofen, salicylates, and naproxen, are among the most commonly prescribed medications for inflammation resulting from rheumatoid arthritis, joint conditions, osteoarthritis, gouty arthritis, joint and muscle discomfort associated with systemic lupus erythematosus, and other musculoskeletal disorders. In some cases, this overreliance on NSAIDs has proved deadly. Annually, 76,000 people are hospitalized from NSAID-induced gastrointestinal complications. The American Medical Association estimates that from 50-80 percent of those hospitalized for gastrointestinal bleeding are taking some form of NSAIDs.

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5 Functions of a Systemic Enzyme

Natural Anti-inflammatory
Refers to the property of a Systemic Enzyme formula to reduce inflammation which is a reaction by the immune system to an irritation that causes redness, swelling, pain, tenderness, heat, and disturbed function to an area of the body.

Anti-Fibrosis
Refers to the property of a Systemic Enzyme formula to reduce the development of excess fibrin (a fibrous connective tissue or scar tissue) in an organ in the body.

Blood Cleansing
Refers to the property of a Systemic Enzyme formula to clean excess fibrin and waste materials from the blood.

Immune System Modulating
Refers to the property of a Systemic Enzyme formula to assist the body to balance the immune system and to maintain an optimal stable, constant condition.

Virus Fighting
Refers to the property of a Systemic Enzyme formula to disrupt, eat away, virus protein cell walls to inhibit the virus from replicating itself and to render individual viruses inert.

* Source for the Five Functions: ENZYMES: The Fountain of Life, by D.A. Lopez, M.D.

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Enzyme Effectiveness

How is enzyme effectiveness determined?

It is by the amount of activity level in the bloodstream after the enzyme has been absorbed from the small intestine. Enzymes lose activity in low pH (1.0 - 3.0) of the stomach. Studies show that unprotected enzymes can lose up to 100% of their activity in 30 minutes or less. Enteric coating is the only reliable method to ensure that 100% of the enzymes are not destroyed, and is by far the most effective delivery method to prevent release of the enzymes before they reach the small intestine.

What happens to uncoated capsules and tablets?

Stomach acid breaks down tablets and capsules and prematurely releases active enzymes (enzymes). The highly acidic environment of the stomach destroys the majority of the enzymes’ activities. If the tablet is of poor quality (contains binders and fillers) the product may pass through both the stomach and intestine with no absorption.
Delivery Systems

The real differentiator among Systemic Enzymes is in the method of delivery to the stomach and ultimately to the small intestine. The only method to protect and effectively deliver a systemic enzyme is a 100% enteric-coated product.

“Protein molecules are normally destroyed (denatured) by the hydrochloric acid of the stomach and broken down into individual components by the special, acid-proof enzymes of the gastric tract (pepsin) and the enzymes of the pancreas. For this reason, tablets, capsules, or granules are used that are enteric-coated or covered with an acid-proof layer. In this way, the enzymes are held safely until that section of the intestines is reached where their resorption is possible.

The acidity of the gastric juices in this region has long been neutralized. The digestive enzymes found here have, for the most part, already performed their activities and are primarily inactive. Only then does the covering of the tablets dissolve. The active enzymes are subsequently released and can be resorbed into the system through the intestinal wall by way of special transport mechanisms.”

“Enzymes – A Drug of the Future” by Prof. Dr. med., rer. nat. Heinrich Wrba; Dr. med. Otto Pecher
Oral Delivery Systems

1. Powder Filled Capsule
2. Tablet
3. Enteric-Coated Liquid Gel Capsule
Powder Filled Capsule

Powder-filled Capsule Digestion

Vegetarian or Gelatin Capsule. Powder filled capsule technology is suitable for contents that are not susceptible to the acidity of the stomach. The capsule and its enzymes are dissolved prematurely in the stomach, resulting in up to 100% destruction of the enzymes within 30 minutes in the extremely low pH environment.
**Enteric-Coated Tablet.** Enteric-coated tablets are able to withstand stomach acids, however, they must be introduced into a high pH environment for extended periods before dissolving. Since individual pH levels vary, the tablet may dissolve very late in the small intestine or bypass it completely. Many users also complain of the synthetic coating.
Liquid Filled Gel Capsule

Gel Capsule Digestion

**Enteric Coated Liquid-Filled Gel Capsule.** The all-natural protective coating prevents the enzymes from being destroyed by the stomach acids. The pancreatic juices break down the coating in the duodenum. This makes 100% of the enzyme contents available for absorption into the bloodstream.
Enteric Coating

Enteric Coating is the best and most effective oral delivery system today for systemic enzymes. The technology of enteric coated liquid-filled capsules is superior to that of powdered enzymes because it uses low heat production, provides more uniform dose distribution, and prolongs enzyme activity.
Low Heat Production

Low Heat Production—Powder enzyme blends are available today that use an enteric coating, but they are in tablet form. The disadvantage of these blends is the amount of heat created with compressing the ingredients into a tablet.

Enzymes are susceptible to high temperatures and may begin to degrade during the manufacturing process. Solubilized Liquid-Filled Gel Capsules allow for an enteric-coated enzyme without activity loss from heat. Temperature ranges during the production of the Solubilized Liquid-Filled Gel Capsules and the enteric coating process are strictly controlled to ensure that there is no enzyme activity loss due to heat that sometimes occurs during the production of enteric coated tablets.
Optimal Dose Distribution

Optimal Dose Distribution—Liquid enzyme blends provide a more uniform dose consistency, because the mixing of liquids allows for optimal particle distribution. In powder formulations, each particle of a different enzyme is different in size, causing greater friction between particles during mixing.

Excipients are introduced to powder formulations to increase the mix ability, but liquids still provide far more even distribution of ingredients, allowing for more consistent dosages in each capsule.
Prolonged Enzyme Activity

Enzymes always retain some amount of moisture when they are produced. Enzymes as proteins are more susceptible to denaturation at higher moisture content. Enzyme powders typically have lower (5-10%) moisture content. However, even with lower moisture content, enzyme powders will lose some of their activity over time, resulting in a loss of up to 20% of activity over a 12-month period.

Liquid-Filled Gel Capsules contain enzymes with a higher degree of purity and less moisture that when combined with Medium-Chain Triglycerides (MCT), then decompressed during the manufacturing process, removes the moisture completely. As a result, loss of enzyme activity over time due to moisture will not occur.
Systemic Enzyme Therapy

A well balanced Systemic Enzyme supplement should have a unique blend of enzymes, flavonoids, and antioxidants.

Other Key Features:
- Minimal Dosage Required for Maximum Benefit
- Solubilized Liquid Filled Gel Capsule
- Low Heat Production
- Optimal Distribution
- Prolonged Enzyme Activity
- Advanced Delivery System - Enteric Coated Liquid Filled Gel Capsule
- All Natural, Vegetarian Formula
- 100% Absorption into the Small Intestine
- Greater Patient Compliance
- Higher Potency & Purity

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Systemic Enzymes Exclusively for Healthcare Practitioners Like You

There are thousands of enzymes available on the market today through retail stores and online resellers but choose an unique blend of vegetarian enzymes, flavonoids and antioxidants with 100% absorption and pharmaceutical strength available exclusively through healthcare practitioners like you.

No need to compete with the internet after educating your patients on the importance of enzyme therapy.

Pharmaceutical strength systemic enzymes that are enteric coated and liquid filled offer more potency and less dosage meaning better patient compliance.

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Ingredients in a Well Balance Systemic Enzyme

Serrapeptase -
Is one of the most popular enzymes available.

Protease -
Any enzyme that catalyzes the splitting of proteins into smaller peptide fractions and amino acids by a process known as proteolysis. *

Bromelain -
Found in pineapples and breaks down other proteins, such as collagen.*

Papain -
A proteolytic enzyme obtained from un-ripe papaya.*

Amylase -
Digests carbohydrates and helps convert starch to sugar. *

Lipase -
Digests fat. It is secreted in the digestive tract that catalyzes the breakdown of fats into individual fatty acids that can be absorbed into the bloodstream. *

Amla -
Is a great source of Vitamin C.

Rutin –
One of the many existing flavonoids and supports health by supporting capillaries and other connective tissue.*

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Disintegration and Activity Tests; What Do They Mean?

The disintegration test consists of two conditions to see if a capsule will dissolve correctly.

Test 1:
Simulates Stomach Conditions
– disintegration in this test will expose enzymes to acidic conditions.
**Disintegration = Failure**

Test 2:
Simulates Intestinal Conditions
– disintegration in this test will enable enzyme release for absorption in the small intestine.
**Disintegration = Pass**

Test #1 shows that when a capsule not enteric coated was exposed to an acidic environment resembling the stomach, the enzyme activity was prematurely released with no activity remaining to pass through to the small intestine.

Test #2 shows that when a capsule remains intact because of enteric coating and it reaches the small intestine, it then breaks down completely and is absorbed at the right time.

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What Does an Activity Test Show?

The activity test consists of two differing conditions:

Test 1:
Simulates Intestinal Conditions – activity level of product in ideal conditions.

Test 2:
Simulates Stomach Conditions – activity level if exposed to harsh acidic environment (i.e. stomach)

Test #1 looks at the enzyme activity of a capsule when exposed to the small intestine where it should breakdown for maximum benefit.

Test #2 looks at enzyme activity when a capsule is exposed to an acidic condition similar to the stomach and shows that if not enteric coated or protected, it will break down prematurely.

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Disintegration & Activity Test Results Mean...?

Using the certificates of analysis together; can determine if a product will have its maximum activity level intact when/if a capsule dissolves in the intestinal tract.

- So, if a capsule failed the disintegration test, it will have much lower activity levels due to it being exposed to acidic conditions.

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Important Features – Choosing the Right Systemic Enzyme

FULLY ENTERIC COATED CAPSULE -
Capsules that have a full USP (pharmaceutical grade) enteric coating for ease of swallowing and to ensure a more complete delivery of the product and more assured release. You can expect to receive 100% absolute consistency with every capsule.*

 LIQUID FILLED GEL CAPSULE -
Better consistency, higher potency, more concentrated, greater purity, and unparalleled absorption.*

 SMALLER CAPSULES -
Better compliancy.*

 SMALLER DOSES – FEWER DOSES -
The combination of the items listed above bring with them just one thing – POTENCY. Fewer capsules really can bring more benefit.*

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Systemic Enzyme Supplements

Clinical studies are important and are a critical component when designing and developing a supplement. However, clinical studies are generally limited to the ingredients used in a formula.

When choosing the right enzyme supplement, look for one that only uses ingredients that have solid clinical evidence supporting their efficacy and safety. It is important to examine these ingredients at a molecular level to determine their compatibility and synergy with other ingredients in the formula. This is important because when you mix ingredients they can interact with each other to form a different compound. If ingredients are combined scientifically their individual effectiveness can be increased exponentially.

Virtually no manufacturer conducts clinical studies on their finished products. This is because of the cost which can run into millions of dollars and unlike a synthetic pharmaceutical product which can enjoy patent protection there is no such protection with natural products. Another reason is science is moving very fast in the area of supplementation.

The understanding of nutrition both internally and externally continues to increase and new active ingredients are continually developed to improve the efficacy of products. So, even if it was practical to conduct a clinical study on a supplements it is likely it would be out of date before the final report was completed.

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A Preliminary Trial of Serrapeptase in Patients with Carpal Tunnel Syndrome*

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J Assoc Physicians India 1999 Dec;47(12):1170-2

• **OBJECTIVES:** This study was planned to assess the response of Serrapeptase in patients with carpal tunnel syndrome (CTS).

• **METHODS:** Twenty patients with CTS were evaluated clinically. After baseline electrophysiological studies, these patients were given serrapeptase 10 mg twice daily with initial short course of nimesulide. Clinical and electrophysiological reassessment was done after 6 weeks.

• **RESULTS:** Mean age was 43.9 years with male to female ratio of 1:2.33. Sixty five percent cases showed significant clinical improvement which was supported by significant improvement in electrophysiological parameters. Recurrence was reported in four cases. No significant side effect was observed.

• **CONCLUSIONS:** Serrapeptase therapy may prove to be a useful alternative mode of conservative treatment. Larger study may be further helpful to establish the role of Serrapeptase in CTS.

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Take Heed...

Systemic enzymes may help rid the body of toxins. Some users will experience a detoxification reaction to the enzymes, including short-term fatigue, nausea, fogginess or headache. Though uncomfortable, detoxification is beneficial to the body. Increased water intake can assist in the process, or a reduction in the enzyme dosage will slow the rate of detoxification. If symptoms persist, a patient should contact his or her healthcare professional.

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Thank You for Learning About Systemic Enzyme Therapy

Please contact World Nutrition, Inc. at (800) 548-2710 if you have any questions.

www.WorldNutrition.net
References (1 of 4)


