ENZYME SCIENCE:

- Most potent and innovative blends of plant-based, Digestive and Therapeutic enzyme formulas on the market **exclusively** sold to health care professionals*

- Clean and pure, 100% vegetarian, products with absolutely no fillers

- Cutting edge exclusive technology: ATPro™ Blend, Thera-blend™

- An accessible education and training department

- Professional division of Enzymedica – The retail category leader in Digestive & Enzyme Health

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ENZYMEDICA was founded in 1998 by Tom Bohager who had the vision to build the most complete line of enzyme based supplements.

Since then, the company’s **ENTIRE** purpose and focus have been Enzyme Supplements

**OUR MISSION**

We are dedicated to providing exceptional enzyme-focused supplements at the most therapeutic levels available in the natural foods industry.

It is our commitment to provide unprecedented education & research that propels individuals on the path to vibrant health.
ENZYMES

• Biologically active proteins that are necessary for life to exist.

• Unique protein structures $\rightarrow$ unique functions.

• Catalyze and regulate every biochemical reaction that occurs within the human body, making them essential to cellular function and overall health.
HISTORY OF ENZYME THERAPY

Systemic enzyme therapy has been used clinically for more than a century, beginning with the early publications of Beard and Cutfield.


Orally administered systemic enzymes have decades of wide spread medical use in Germany, Central Europe and Japan.

There are over 200 peer-reviewed studies proving the absorption, therapeutic action, and total lack of toxicity of systemic enzymes.

In the last 40 YEARS over 150 million patients in Europe alone, have undergone enzyme therapy for various medically approved conditions resulting in remarkable benefits!

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HISTORY OF ENZYME THERAPY

Proteolytic enzymes such as trypsin and chymotrypsin (pancreas of cattle or pigs) have been used as therapeutic agents in humans and animals for over 100 years (Morris, 1891).

Historically proteolytic enzymes have been used therapeutically in 4 areas: (1) as oral agents for some gastrointestinal disorders, (2) as local agents to debride or solubilize collections of proteinaceous materials that either foster or cause disease, (3) as anti-inflammatory agents, and (4) as thrombolytic agents (Sherry and Fletcher, 1960).

Mammalian trypsins and chymotrypsins have been used with good results for wound healing (Spittler and Parmenter, 1954) and as an antiinflammatory agent (Martin et al., 1955) in veterinary medicine (Lecht and Stephenson, 1968) and human medicine (Leipner and Saller, 2000). The medical application of trypsin I and other cold-adapted serine proteases from the Atlantic cod includes the use of the native trypsin I for inflammation, fungal diseases, acne, wound healing, and other dermatologic indications (psoriasis, and eczema), as well as for general and dental hygiene (Bjarnason, 2000).
1. Broken down by stomach acid
Fungal and plant-based enzymes survive stomach acid. Oral supplementation with non-animal derived enzymes, such as microbial or fungal enzymes. Those manufactured by a fermentation process of Aspergillus, for example, possess unusually high stability and activity throughout a wide range of pH conditions (from a pH of 2-10).


2. Too large to pass through the walls of the small intestine
Definitive answer as to how they accomplish this is unknown. Proteolytic enzymes may increase the permeability of the mucosal epithelium and, hence, facilitate their own absorption by a mechanism of self-enhanced paracellular diffusion.


Reactivated past the acidic stomach acid. Found in the blood stream.
POSSIBLE MECHANISMS OF ABSORPTION

Proteins and peptide transport mechanisms have been reviewed by Gardner and Steffens, (1995), Matthews (1992), Lorkowski (2012)

- Simple diffusion through membrane (lipophilic molecules)
- Solvent drag via paracellular route (hydrophilic molecules)
- Energy-dependent pinocytosis
- Others yet undefined

How protease works in the body
- Absorption into the blood*
- Hydrolyze Proteins
  - Dead, Damaged or Don’t Belong (3-Ds)

99% of things that make us sick have a protein matrix*
- Foreign Antigens
- Excess production of mucus
- Excess fibrin
- Injury

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HOW DO ORALLY ADMINISTERED ENZYMES CIRCULATE IN THE BODY?

α2-M serves as an enzyme “chaperone”
Has various roles in signal transduction and immune modulation via cytokines

Enzyme complexes with alpha 2-macroglobulin (α2-M)
  native: no protease bound to α2-M
  active: protease bound to α2-M
Enzyme cleaves part of α2-M and is trapped within it Active site of enzyme remains accessible to substrate
Schematic representation of α2-M in the native (slow form) and active (fast form) and with enzyme

*From: Streichhan et al., 1995. Bioavailability of Therapeutically used hydrolytic enzymes. In Gardner and Steffens*
ENZYME DEFENSE PRO™

Immune Health

• Targeted Proteolytic Enzyme blend
  • Assist Immune Defense*
  • Vascular + Circulatory support*
  • Breakdown of Excess Mucus*
• Catalase – Antioxidant*
• L-lysine – Immune system support*
• Vitamin D3 (1,000 IU) – Supports our innate immunity*

• Provides:
  • Critical daily support for overall immune health*
  • Cardiovascular support through improved circulation + tissue function, and fibrinolytic activity*
  • Free Radical detoxification*
  • Potent single capsule dosage

Supplement Facts

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<tr>
<td>Vitamin D3 (as Cholecalciferol) 1,000 IU</td>
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<tr>
<td>Calcium (from Coral Calcium)</td>
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<tr>
<td>Magnesium (from Coral Calcium)</td>
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<tr>
<td>Protease Thera-blend™</td>
<td>350,000 HUT**</td>
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<tr>
<td>Catalase</td>
<td>100 Baker **</td>
</tr>
<tr>
<td>Nattokinase blend w/ NSK-SD®</td>
<td>800 FU **</td>
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<tr>
<td>Serratiopeptidase</td>
<td>50,000 SPU **</td>
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<tr>
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<tr>
<td>L-lysine</td>
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</table>

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Combinations may work better than single enzymes

Combinations of hydrolytic enzymes have been used for the treatment of a variety of diseases for many years, including the treatment of inflammation, traumatological events, surgical interventions, autoimmune and immune complex diseases, rheumatological diseases, viral infections, and malignant tumors


HERPES ZOSTER

Oral enzymes are known as therapy of herpes zoster for more than 30 years. Nevertheless, today’s standard treatment of herpes zoster in immunocompetent patients is oral acyclovir. Other therapies are no longer customary because of their insufficient efficacy and frequent side effects. The positive results obtained in earlier studies with an orally administered enzyme combination preparation has led to the assumption that this might definitely represent an alternative therapy. The purpose of this study was to determine whether the enzyme combination differs from acyclovir with regard to efficacy and tolerance in the treatment of acute herpes zoster. In this double-blind, controlled, multicenter trial, immunocompetent patients with herpes zoster were randomly assigned to receive one of the two test drugs for 7 days. The parameters of pain and skin lesions were measured over 14-21 days.

Forty-four patients were enrolled in the enzyme therapy (ET) group and 46 in the acyclovir thérapie (AT) group. Following entry into the study, patients demonstrated no significant differences with respect to anamnestic or clinical data. Significant differences regarding the statistically evaluated parameters of efficacy were not seen either. Paracetamol use and total pain over 14 days also failed to reveal any notable differences between the two groups. Side effects were observed in four patients of the ET group and in three of the AT group. Results suggest that the therapy of herpes zoster with an orally applied enzyme combination preparation is a valid and even cheaper alternative to therapy with acyclovir.


PROTEOLYTIC ENZYME THERAPY- ONCOLOGY

Abstract
Systemic enzyme therapy was recently subjected to experimental investigations and to rigorous clinical studies in cancer patients. The designs of the relevant clinical cohort studies followed the guidelines of Good Epidemiological Practice and represent level IIB in evidence-based medicine (EBM). Scientifically sound experimental in vitro and in vivo investigations are far advanced and document promising immunological, anti-inflammatory, anti-infectious, and antitumor/antimetastatic activities of proteolytic enzyme mixtures (containing trypsin, chymotrypsin, and papain) or bromelain. EBM level II clinical studies, which are accepted by the European Union to show safety and efficacy of medical treatments, were performed to evaluate the benefit of complementary systemic enzyme therapy in cancer patients suffering from breast and colorectal cancers and plasmacytoma. These studies demonstrated that systemic enzyme therapy significantly decreased tumor-induced and therapy-induced side effects and complaints such as nausea, gastrointestinal complaints, fatigue, weight loss, and restlessness and obviously stabilized the quality of life. For plasmacytoma patients, complementary systemic enzyme therapy was shown to increase the response rates, the duration of remissions, and the overall survival times. These promising data resulted in an "orphan drug status" designation for a systemic enzyme product, which should motivate further studies on this complementary treatment.

Benefits of Supplemental Digestive Enzymes

- Better Assimilation*
- Better Elimination*
- Conservation of Energy*

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ENZYME THERAPY - GUESS THE CHALLENGE

MEDICAL HISTORY FACTORS

1. Have you taken tetracyclines or other antibiotics for acne for 1 month (or longer)? 35

2. Have you at any time in your life taken broad spectrum antibiotics or other antibacterial medication for respiratory, urinary or other infections for two months or longer, or in shorter courses four or more times in a one-year period? 35

3. Have you taken a broad-spectrum antibiotic drug—even in a single dose? 6

4. Have you, at any time in your life, been bothered by persistent prostatitis, vaginitis or other problems affecting your reproductive organs? 25

5. Are you bothered by memory or concentration problems—do you sometimes feel spaced out? 20

6. Do you feel “sick all over” yet, in spite of visits to many different physicians, the causes haven’t been found? 20

7. Have you been pregnant...
   Two or more times? 5
   One time? 3

8. Have you taken birth control pills...
   For more than two years? 15
   For six months to two years? 8

9. Have you taken steroids orally, by injection or inhalation?
   For more than two weeks? 15
   For two weeks or less? 6

10. Does exposure to perfumes, insecticides, fabric shop odors and other chemicals provoke . . . 20
    Moderate to severe symptoms? 5
    Mild symptoms?

11. Does tobacco smoke really bother you? 10

12. Are your symptoms worse on damp, muggy days or in moldy places? 20

13. Have you had athlete’s foot, ring worm, “jock itch” or other chronic fungous infections of the skin or nails?
    Have such infections been...
    Severe or persistent? 20
    Mild to moderate? 10

14. Do you crave sugar? 10

TOTAL SCORE, Section A
ENZYME THERAPY - GUESS THE CHALLENGE

If a symptom is **occasional or mild** ........................................ 3 points
If a symptom is **frequent and/or moderately severe** ........ 6 points
If a symptom is **severe and/or disabling** .................................. 9 points

**Add total score and record it at the end of this section.**

**Point Score**

1. Fatigue or lethargy
2. Feeling of being “drained”
3. Depression or manic depression
4. Numbness, burning or tingling
5. Headache
6. Muscle aches
7. Muscle weakness or paralysis
8. Pain and/or swelling in joints
9. Abdominal pain
10. Constipation and/or diarrhea

11. Bloating, belching or intestinal gas
12. Troublesome vaginal burning, itching or discharge
13. Prostatitis
14. Impotence
15. Loss of sexual desire or feeling
16. Endometriosis or infertility
17. Cramps and/or other menstrual irregularities
18. Premenstrual tension
19. Attacks of anxiety or crying
20. Cold hands or feet, low body temperature
21. Hypothyroidism
22. Shaking or irritable when hungry
23. Cystitis or interstitial cystitis

**TOTAL SCORE, Section B**
ENZYME THERAPY- GUESS THE CHALLENGE

If a symptom is **occasional or mild** ......................... 1 point
If a symptom is **frequent and/or moderately severe** .......... 2 points
If a symptom is **severe and/or disabling** ...................... 3 points

Add total score and record it at the end of this section.

1. Drowsiness, including inappropriate drowsiness
2. **Irritability**
3. Incoordination
4. Frequent mood swings
5. **Insomnia**
6. Dizziness/loss of balance
7. Pressure above ears . . . feeling of head swelling
8. **Sinus problems . . . tenderness of cheekbones or forehead**
9. Tendency to bruise easily
10. Eczema, itching eyes
11. **Psoriasis**
12. Chronic hives (urticaria)
13. Indigestion or heartburn
14. Sensitivity to milk, wheat, corn or other common foods
15. Mucus in stools
16. **Rectal itching**
17. Dry mouth or throat
18. Mouth rashes, including “white” tongue
19. Bad breath
20. Foot, hair or body odor not relieved by washing

21. Nasal congestion or **postnasal drip**
22. Nasal itching
23. **Sore throat**
24. Laryngitis, loss of voice
25. Cough or recurrent bronchitis
26. **Pain or tightness in chest**
27. Wheezing or shortness of breath
28. Urinary frequency or urgency
29. Burning on urination
30. **Spots in front of eyes or erratic vision**
31. Burning or tearing eyes
32. Recurrent infections or fluid in ears
33. Ear pain or deafness

TOTAL SCORE, Section C

________________________

Total Score, Section A

________________________

Total Score, Section B

________________________

**GRAND TOTAL SCORE**
ENZYME SCIENCE™
EXCEPTIONAL ENZYME FORMULAS
ENZYME THERAPY - CANDIDA

If you’d like to know if your health problems are yeast-connected, take this comprehensive questionnaire.

Questions in Section A focus on your medical history—factors that promote the growth of Candida albicans and that frequently are found in people with yeast-related health problems.

In Section B you’ll find a list of 23 symptoms that are often present in patients with yeast-related health problems.

Section C consists of 33 other symptoms that are sometimes seen in people with yeast-related problems—yet they also may be found in people with other disorders.

Filling out and scoring this questionnaire should help you and your physician evaluate the possible role Candida albicans contributes to your health problems. Yet, it will not provide an automatic “yes” or “no” answer.
ENZYME THERAPY- CANDIDA

In a normal intestinal environment, Candida bacteria live in balance with millions of other kinds of intestinal flora.

Unfortunately, this same environment can fall out of balance, and the normally harmless Candida bacteria transform into a fungal form that can have devastating effects. At its worst, Candida emits over 70 toxic byproducts, the most prevalent being acetaldehyde which is converted to ethanol (alcohol) by the liver.

We can now understand the pervasive “brain fog” many Candida sufferers contend with on a daily basis. Yet this is one of a myriad of possible symptoms.
Candida is truly a warrior of a species and proves this by being exceptionally difficult to eliminate with diet alone. Candida has two structural characteristics which make it so hardy. Candida has a tough fibrous outer layer called chitin. This serves as a protective shell of armor to the protein nucleus. In addition to having armor, Candida can grow tentacle like roots, which drill through the intestinal wall, eventually creating gut permeability.

With an insight to how Candida operates, we can begin to understand how to conquer it. The first step is to reduce refined foods, especially sugars, from the diet as much as possible. Candida feeds on sugar, so eliminating its major food source can lead to a reduction in overgrowth. Enzyme therapy complements dietary changes as an effective adjunct treatment. Taken on an empty stomach, cellulase enzymes can break down the tough outer shell of Candida; while protease enzymes digest the protein based nucleus. While diet should never be ignored when healing Candida, enzymes can help move the process along more effectively than diet alone.

Enzymes pack another punch when battling Candida. Not only do protease and cellulase enzymes digest the Candida cell itself, but they also clean the environment. Candida thrives in undigested fiber in the intestines. When taken on an empty stomach cellulase enzymes are able to break down this undigested fiber, eliminating a Candida breeding area. Protease enzymes taken therapeutically can remove old undigested materials which can lead to putrification and an acidic environment. Cleaning up the environment stages the scene for a healthy ecology, ecology that when presented with pathogenic challenges, can rise to the occasion and fight them off.
CANDIDA CONTROL™

ASSISTANCE IN MAINTAINING NORMAL YEAST LEVELS

- **Cellulase Thera-blend™**
  - Breaks down cellulose
  - Digests the protective chitin cell wall (cellulose) of *Candida albicans* *
  - Removes any build-up of fiber in the colon which may be protecting yeast *
- **Protease Thera-blend™** – Helps minimize die-off symptoms by breaking down protein toxins released *
- **Broccoli Seed Extract** – Sulforaphane Glucosinolate (SGS) induces detoxication enzymes and inhibits the inappropriate growth of *Candida albicans* *
- **Shelf Stable Probiotic Blend (8 species)**
  - 1 Billion CFU (2 caps) to promote a healthy GI tract
  - Maintains a healthy balance of *Candida albicans* *
  - Supports immune and digestive health *

### Supplement Facts

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<th>Servings Per Container: 42</th>
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<td><strong>Probiotic Blend</strong>:</td>
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- Better Elimination*
- Conservation of Energy*

Health

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Thank you for your time.
Questions?