


**ENZYMEDICA**

# Enzymes and Probiotics

## Key Catalysts For the Gut-Brain Connection

Julia Craven  
Vice President of Education  
Enzymedica

For Educational Purposes Only  
Please Do Not Distribute



---

---

---

---

---

---

---

---

1

**ENZYMEDICA**

## Julia Craven

*VP of Education and Innovation for Enzymedica*

- **2007:** Joined the Enzymedica team
- **1989:** Began working in independent health food stores
- **Areas of Specialty:** Digestive health, enzymes, gut/brain connection, traditional herbalism, dietary interventions, medical aromatherapy, flower essences, yoga, breathwork



---

---

---

---

---

---

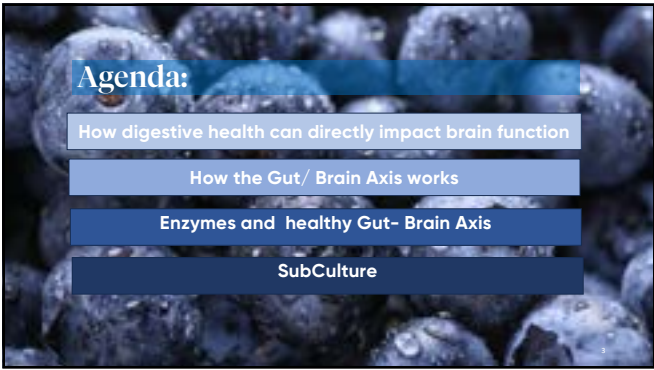
---

---

2

## Agenda:

- How digestive health can directly impact brain function
- How the Gut/ Brain Axis works
- Enzymes and healthy Gut- Brain Axis
- SubCulture



---

---

---

---

---

---

---

---

3



4

---

---

---

---

---

---

---

---



5

---

---

---

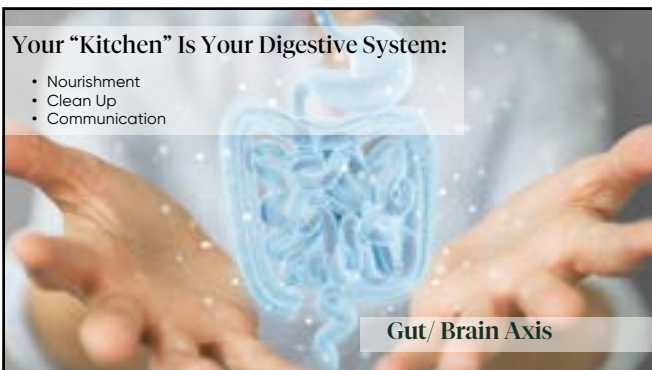
---

---

---

---

---



6

---

---

---

---

---

---

---

---



7

---

---

---

---

---

---

---

---

**The Enteric Nervous System** **ENZYMEDICA.**

- The **Enteric Nervous System (ENS)** is an embedded **communication network** that runs through the entirety of the **digestive tract to the brain via vagus nerve and spinal cord.**
  - Epithelial surface area is 32 square meters!
- **ENS senses and reacts** to the dynamic **ecosystem** of the **gastrointestinal (GI) tract** by **translating chemical cues** from the environment into **neuronal impulses from gut to the Central Nervous System.**
  - ENS can work independently of the CNS; it is a brain on its own.
- **ENS communicates** with host **microbiota** and signals **immune responses.**

8

---

---

---

---

---

---

---

---

**The Vagus Nerve** **ENZYMEDICA.**

- **Longest nerve in the human body**
  - Latin translation is the "wandering nerve"
- The **vagus nerve** is an **information highway** between the **brain, digestive system, heart and lungs**
- **Bi-directional** communication but **90% goes up** from the gut to the brain and only **10% goes down** brain to gut.
- **Low vagal tone** has been associated with IBS, rheumatoid arthritis, anxiety and panic attacks, and poor heart rate variability.

♦ ♦ ♦ ♦ ♦

9

---

---

---

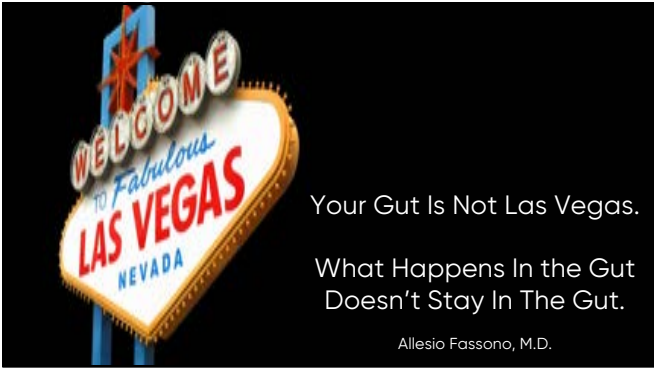
---

---

---

---

---



10

---

---

---

---

---

---

---

---



11

---

---

---

---

---

---

---

---

**ENZYMEDICA.**

**Clean Kitchen!**

- Enzymes are to the gut as cleaning is to the kitchen.
- What happens if you can't keep up with the cleaning? (Enzymes not keeping up?)
- You bring in help!
  - Not all enzymes are created equally.

12

---

---

---

---

---

---

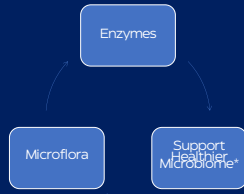
---

---

## Enzymes and the Microbiome

Probiotics and enzymes synergize in the gut microbiome.

- **Probiotics create enzymes** that are used for digestion: Proteases, amylases (including lactase and alpha-galactosidase), lipases, and cellulases.
  - Proteases also help with breakdown of pathogens.
  - Digestive enzymes support the prevention of gas, bloating, irregularity.
- **Enzymes set the stage for probiotics** by breaking down undigested material giving opportunity for more robust and diverse microflora in the gut.



13

---

---

---

---

---

---

---

---

## What Else Do Gut Bacteria Make? ENZYMEDICA.

**Organic acids:** Lowering the pH of the making it less hospitable for pathogenic bacteria. Lactic acid is one of the most prominent by products of probiotic use.

**Short-chain fatty acids:** Crucial for gut cell health integrity, SCFAs are food for epithelial tissue. They also have a vital role in neuroprotection.

**Neurotransmitters:** Certain probiotics aid in the production and modulation of neurotransmitters.

**Bacteriocins:** Antimicrobial peptides which can support healthy microbial environment.

**Vitamins:** Some probiotics produce essential vitamins such as B vitamins and vitamin K.

14

---

---

---

---

---

---

---

---

## Powerful Support ENZYMEDICA.

- **Proven, high potency, pure, Thera-blend.**
- Digestive enzymes are the **go-to solution** for top **digestive problems.**
- **Enhance breakdown** of food/waste
- **Detoxify** the intestines of biofilm and other decaying, undigested foods
- Get **more energy** from food!
- **+ Probiotics:** Combined with a blend of probiotics bacteria featuring DE111 at 500 million CFU/ cap
  - **Proven to germinate** in the gut within 3 hours of ingestion – they survive.
  - Long life cycle, helps slowly recolonize intestines and **create enzymes!**



What about Food Intolerances

15

---

---

---

---

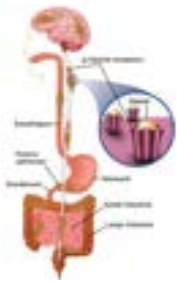
---

---

---

---

### Food Derived Exorphins



Opioid receptor sites occur all along the CNS and throughout the digestive system.

Morphic peptides, derived from food proteins exert opioid-like responses, and they include:

- Gluteomorphin (gluten/gliadin)
- Casomorphins (milk)
- Soyomorphins (soybean)

There is understandable and documented connection between exorphin peptides and mental and cognitive health issues such as:

- Depression
- Anxiety
- Learning disabilities
- Autism spectrum
- Schizophrenia

---

---

---

---

---

---

---

---

16

### Digest Spectrum

- Think of it as Digest Gold for Food Intolerances
- Complete, high potency digestive enzyme to help break down the entire meal.\*
- Specialized digestive support for gluten.\*
  - Features DPP-IV
    - Digest Gold does not contain DPP-IV
- High Lactase: 1,000 ALU
  - Digest Gold contains 400 ALU
- Very high Xylanase to break down phenolic compounds and FODMAPs
  - 3,300 XU vs. Digest Gold 550 XU



Which probiotic should I use?

---

---

---

---

---

---

---

---

17

SubCulture Probiotics from ENZYMEDICA.




---

---

---

---

---

---

---

---

18



19

---

---

---

---

---

---

---

---

**ENZYMEDICA.**

**A 7-strain blend is the core of SubCulture and is in every product.**

- Exclusive strain blend
- Each strain backed by extensive human clinical data
- Human and plant derived strains of Lactobacillus and Bifidum
- Diverse yet noncompetitive
- Chosen specifically for stability, resistance to stomach acid and bile
- Targeted therapeutic outcomes for bloating, women's health and mood

20

---

---

---

---

---

---

---

---

**Probiotic For Mood** **ENZYMEDICA.**

- 8 total strains: 50 billion CFU
- Mood Specialty Strains + 7 Strain Blend
  - Many strains in the 7 Strain Blend are known to support neurotransmitter production.

**Zen-Biotic:** Heat stabilized strain of *L. gasseri* CP2305

**L-Theanine, 100 mg:** Amino acid often derived from green tea.

- Supports cognitive function and attention; also, neuroprotective.\*
- Enhances sleep quality.\*
- Can be helpful for symptoms associated with PMS.\*

21

---

---

---

---

---

---

---

---

## Zen-Biotics

- Supported by 6 human clinical studies and shown to promote emotional well being, better resistance to stress, fatigue and enhanced sleep quality.\*
- In order to capture L. gasseri at highest activity, it is best when heat stabilized.

**Daily administration of probiotic *Lactobacillus gasseri* CF1305 ameliorates chronic stress-associated symptoms in Japanese medical students**

**Daily intake of probiotic *Lactobacillus gasseri* CF1305 ameliorates psychological premenstrual symptoms in young women: a randomized, double-blind, placebo-controlled study**



22

---

---

---

---

---

---

---

---

**Digestion is the key to overall wellness in Body, Mind and Spirit**

*100 Years Digestive Happiness Since 1918*



23

---

---

---

---

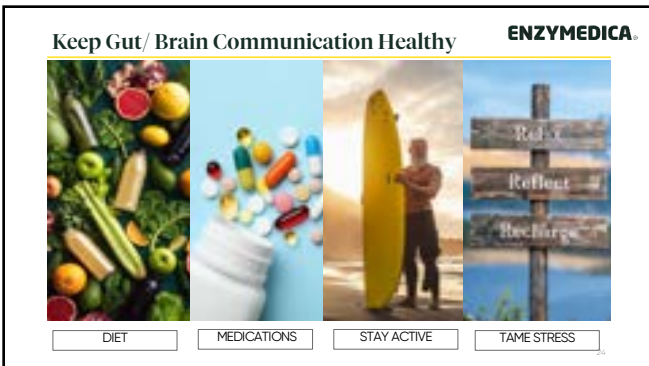
---

---

---

---

**Keep Gut/ Brain Communication Healthy** **ENZYMEDICA.**



DIET    MEDICATIONS    STAY ACTIVE    TAME STRESS

24

---

---

---

---

---

---

---

---



**Diversity Chat:**

Grow Your Own Microbi-home

If there is one thing everyone can agree on, it's that diversity is fundamental and personalized.

Diversity cultivation from lifestyle and environment is inherently non-competitive.

Additionally, when you have so many strains it means you probably have sub-clinical doses.



---

---

---

---

---

---

---

---