

1. What are the key benefits of taking GI-Defense?

GI-Defense capsules are formulated with the *Glycobiome and Butyrate Support Blend*, which supports your body's ability to naturally replenish butyrates.* These short-chain fatty acids are crucial to help strengthen and nourish the intestinal lining.* A strong gut lining provides the stability needed for beneficial microbes to thrive and supports vital gut-brain signaling, also known as the "Gut-Brain Axis" needed for good health.*

GI-Defense capsules are formulated to:

- Help strengthen and support gut barrier function and integrity.*
- Support healthy intestinal permeability and environment.*
- Help purify the gut and balance beneficial bacteria.*
- Support short chain fatty acid (SCFA) production, especially butyrate production.*
- Support healthy functioning of the digestive and immune systems.*
- Help comfort typical feelings of gas and bloating.*

2. Why is it so important that the gut lining be strong and healthy?

When working properly, your gastrointestinal (GI) digestive tract breaks down food, absorbs nutrients and protects your body from harmful substances while efficiently eliminating waste. When you consider that 70% of our immune system lives within our digestive tract, you can see can begin understanding how valuable it is to keep our GI tract healthy and working properly.

Our extensive intestinal lining covers more than 4,000 square feet of surface area. When working properly, our intestinal wall acts as a barrier, controlling what enters our blood stream.¹ Small gaps in the intestinal wall's "tight junctions" allow water and beneficial nutrients to enter while blocking out harmful substances. However, when the gut lining is stressed and unhealthy, it develops widening gaps that can allow partially digested food particles or toxins to pass into the bloodstream, leading to a variety of health issues.

3. What is meant by "Leaky Gut"?

An unhealthy gut lining may have increased permeability in the intestinal wall, resulting in "Leaky Gut." This may trigger changes in the gut bacteria or allow partially digested food particles or toxins to pass into the bloodstream.²

4. What are the causes of "Leaky Gut"?

The condition known as "Leaky Gut" can be caused by a number of wide variety of lifestyle choices such as excessive sugar intake, excessive alcohol intake, chronic stress, yeast overgrowth, nutrient deficiencies among others.

5. What is a Microbiome?

Your microbiome consists of 100 trillion microbes that live on and in your body. Unseen by the naked eye, these microbes work continuously to form your innate and adaptive immune system, break down your food for digestion and even influence how much you weigh. Your health depends on the life and vibrancy of your microbiome.

^{1,2}Campos MD, Marcela. Leaky Gut: What is it, and what does it mean for you? Harvard Health Leaky gut: What is it, and what does it mean for you? Harvard Medical School. September 22, 2017.

³Carabotti, Marilia, Sciocco, Annunziata. "The gut-brain axis: interactions between enteric microbiota, central and enteric nervous systems." *Annals of Gastroenterology*: 2016; 29(2):240.

⁴Breit Sigrid, Kupferberg Aleksandra, Rogler Gerhard, Hasler Gregor. "Vagus Nerve as Modulator of the Brain-Gut Axis in Psychiatric and Inflammatory Disorders." *Frontiers in Psychiatry*. March 13, 2018.

6. What is meant by the Gut-Brain Axis?

While the concept might sound unusual, science has proven your gut and brain actually communicate biochemically. The bidirectional signaling that takes place between the gastrointestinal tract and the central nervous system is referred to as the gut-brain axis (GBA).³

Using the Vagus Nerve, the gut microbiota signals the central nervous system, influencing bodily functions like mood, immune response, digestion and heart rate.⁴ This “linking” of gastrointestinal tract and the central nervous system helps explain why healthy intestinal function is so important. The condition of your GI tract can affect your physical, mental and emotional health.

7. What exactly are butyrates and why are they important?

Your microbiome supports microbial fermentation of dietary fibers in the lower intestine and manufactures butyrate, a short chain fatty acid. Butyrates provide fuel for cells in your gut lining, supports immune system functions of the colon wall and helps to nourish the digestive tract.

8. What is the *Glycobiome™* and *Butyrate Support Blend* and why is it so important?

The *Glycobiome and Butyrate Support Blend* refers to a natural citrus flavonoid (phytonutrient) complex combined with Glyconutrients[†] designed to support the gut and immune health.* This natural citrus flavonoid complex in GI-Defense has been scientifically shown to help strengthen and support gut barrier function.* Mannatech's proprietary formulation provides safe, natural and effective support for healthy gut barrier function.*

9. What are flavonoids?

Flavonoids contain specific sugars that prevent absorption until they reach the colon. Flavonoids effect the antioxidant activity and help release metabolites, resulting in lower oxidative stress for the gut barrier.*

10. Why did we include flavonoids in GI-Defense?

Flavonoids can promote proliferation of certain classes of beneficial bacteria and can help strengthen the gut barrier.* This results in support for a healthier digestive system and immune system.*

When flavonoids are metabolized in the colon, two actions occur:

1. Gut Microbiome Modulation – Supports the increase of short chain fatty acids (such as butyrate), helping to calm and strengthen gut lining integrity.
2. Enhances Effects of Active Flavonoids – Flavonoids effect the anti-oxidant activity and help release metabolites, resulting in lower oxidative stress for the gut barrier.

11. Why would I want to take all three GI-Biome System™ products?

Millions of people around the world could possibly benefit from digestive support. We know a healthy immune system starts with a healthy gut.* This is why Mannatech, the pioneer in cell-to-cell communication, developed a complete system of digestive health products to support the health of your microbiome.*

Modern medicine is just beginning to understand the implications of the unhealthy stressors that target the body's sensitive digestive system. Scientific research is finding that poor nutrition, alcohol, smoking, certain medications, and other unhealthy habits lead to a poor environment for essential microbes found in our body.

The GI-Biome System has three products that not only stand-alone, but may be used as part of an entire digestive support system for microbiome health.* This system provides support for a healthy and strong digestive system and paves the way for improved health in many other systems in your body, including immune health.*

- **GI-Defense** is formulated to soothe the intestinal wall by providing an environment that encourages the body to help repair itself through supporting butyrate production.*
- **GI-ProBalance®** offers a blend of probiotics to help increase the number of good bacteria within the digestive tract, and prebiotics to feed and nurture the probiotics for longer lasting health benefits.*
- **GI-Zyme®** provides an array of beneficial enzymes that help the nutrients ingested to be utilized and absorbed into the body.*

[†]Glyconutrients are beneficial saccharides found in nature.

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

12. What are some of the features GI-Defense offers?

Our formula is free of MSG, soy, dairy, artificial flavors, colors, preservatives, and sweeteners. Our formula is low glycemic. Our formula is low glycemic and vegetarian friendly.

13. Who is the GI-Defense supplement ideal for?

For anyone who wishes to support their gut health including helping to strengthen the gut barrier function and nourishing the cells by helping to promote butyrate production.

14. Is GI-Defense suitable for children?

Children age 12 and older can take this product if approved by a health care provider. If you have questions for use beyond the directions indicated on the label, you should speak to a qualified healthcare professional.

15. How often should I take GI-Defense?

For optimal results adults take two capsules daily, or up to two capsules twice daily if needed.

16. When is it best to take GI-Defense?

We recommend taking once daily with food and water.

17. Why are Glyconutrients important for digestion?

Glyconutrients contain prebiotic fibers, which are important for supporting the life and growth of probiotics.* Together prebiotics and probiotics support healthy digestion and a healthy microbiome.*

18. Why was licorice root chosen for the GI-Defense formula?

Licorice root is used to soothe gastrointestinal tract, support stomach lining and restore a healthy digestive balance.*

19. Why was clove chosen for the GI-Defense?

Cloves can increase the production of gastric mucus which functions as a barrier between the stomach lining and digestive acids.*

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