

## Feeding the microbiome with clinically proven Sunfiber®

A Prebiotic and Soluble Dietary Fiber

# Personalized whole-body wellness begins in the gut

Everyone's microbiome is unique – prebiotics work with the individual for the ultimate personalized approach to nutrition Recent research has shown that the gut microbiome



not only plays an important role in digestive health but also has emerging evidence for supporting other key functions such as brain AND immune health<sup>1, 2, 3\*</sup> Growth in consumer interest

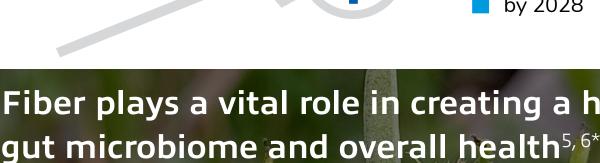
### The global human microbiome supplement market is projected to have a CAGR of 21.3% from 2025 to 20284

Forecasted sales (USD) \$894 million

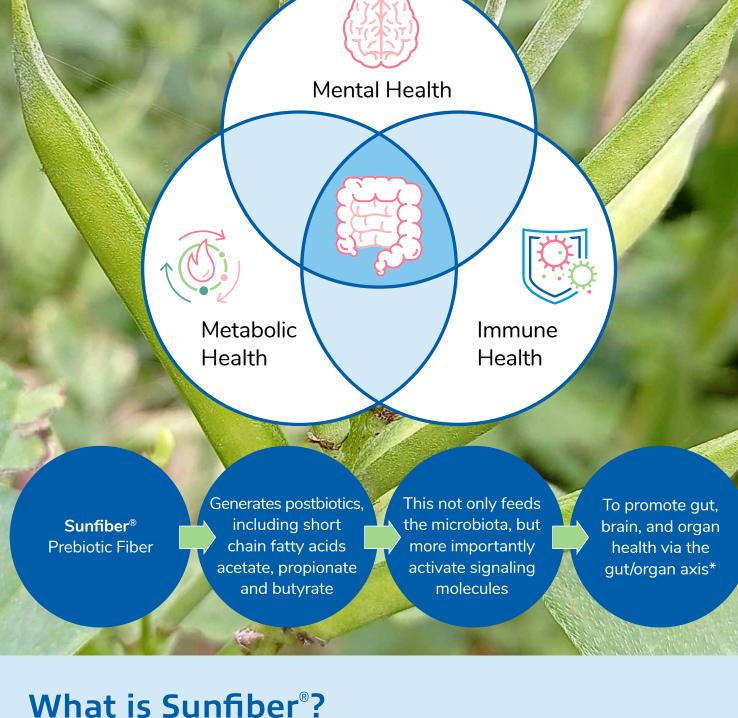
in 2025

in the microbiome





Fiber plays a vital role in creating a healthy

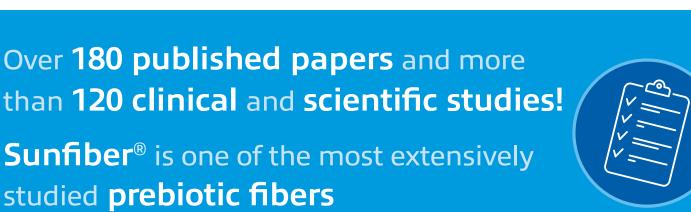


guar gum, aids in digestive health

Derived from the guar seed, Sunfiber®, a partially hydrolyzed

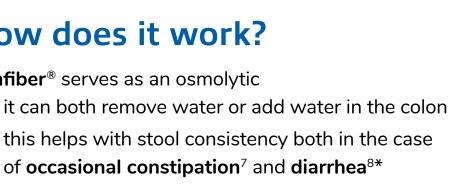
Clinically proven, naturally sourced Sunfiber® prebiotic guar fiber

supports digestive and microbiome health in adults and children\*



#### How does it work? Sunfiber® serves as an osmolytic

this helps with stool consistency both in the case of occasional constipation<sup>7</sup> and diarrhea<sup>8\*</sup>





### propionate and butyrate

The butyrate generated is used by the colon

- to support the health of the colon lining
- **Digestive Health and Nutrition**

#### ✓ Optimizes nutrient uptake What sets Sunfiber® apart from other fibers is that it improves absorption of minerals and does

occasional constipation and diarrhea<sup>9,10\*\*</sup>, by

means less gas and stomach distress\*,

not decrease the absorption of protein<sup>11</sup>

✓ Clinically shown to lower\* glycemic index<sup>12\*</sup>

removing or adding water in the colon as needed

✓ Safe for children: clinically studied specifically in children<sup>13</sup> ✓ Significantly increases both Bifidobacteria

unlike inulin\*

chemical messenger that supports calm Bacteria can impact stress responses and cognitive functioning

gastrointestinal function

neurochemistry and behavior<sup>17</sup>

- √ Cholesterol\* ✓ Regularity\* ✓ Mineral Absorption\* ✓ Prebiotic\*
- **Versatility & Applications** Sunfiber® offers excellent stability and is one of the most versatile fibers available.

**Tasteless Colorless** 



References:

Nutrients. 2019 Sep 10;11(9):2170.

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Completely

soluble in water









✓ Protein & Fat Absorption\*

✓ Satiety Postbiotic\*

**Odorless** 

√ IBS Support\*





**Very low** viscosity



- 5 Velazquez M et al. "Effect of Oligosaccharides and Fibre Substitutes on Short-chain Fatty Acid Production by Human Faecal Microflora." Anaerobe. 2000 Apr;6(2):87-92. 6 Tan J et al. "The role of short-chain fatty acids in health and disease." Adv Immunol. 2014;121:91-119. - Sivaprakasam S et al. "Benefits of Short-chain fatty acids and their receptors in inflammation and carcinogenesis." Pharmacol Ther. 2016 Aug;164:144–151. Russo L et al. "Partially hydrolyzed guar gum in the treatment of irritable bowel syndrome with constipation: effects of gender, age, and body mass index." Saudi J Gastroenterol. Mar-Apr 2015;21(2):104-10.
  - Yasukawa Z et al. "Effect of Repeated Consumption of Partially Hydrolyzed Guar Gum on Fecal Characteristics and Gut Microbiota: A Randomized, Double-Blind, Placebo-Controlled, and Parallel-Group Clinical Trial."

Sunfiber® is a prebiotic fiber which feeds the microbiome It generates high levels of postbiotics Short Chain Fatty Acids – acetate,

## Sunfiber® supports multiple benefits

#### ✓ Good tolerability Sunfiber<sup>®</sup> is a slow fermenting fiber, which

Sunfiber® has consistently demonstrated positive management for core gut health challenges\*

and Lactobacillus levels at modest doses14\*

Immune health The gut microbiome and immune system are linked, with one supporting and protecting the other<sup>15</sup> When the gut microbiome is healthy, the immune system can: Positively respond to pathogens Prevent an overreaction, which can lead to inflammation 70% of immune cells reside in the gut Satiety Sunfiber® increases satiety by reducing gastric transit time and provides the perception of sustained satiety effects

Decreases caloric intake by 20%<sup>16\*</sup>

**Brain Health** 

Promotes the production of several satiety hormones

Gut microbes produce most of the neurotransmitters

found in the human brain, and they can also impact

Bifidobacteria: produce and increase tryptophan

Some lactobacilli can produce GABA, the brain's

levels which regulate mood, appetite and



# Formulate with Ease

✓ Glycemic Index\*

✓ Steady Gut Fermentation\*

✓ Childhood Constipation\*





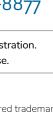
















Cryan JF, Dinan TG "Mind-altering microorganisms: the impact of the gut microbiota on brain and behaviour." Nat Rev Neurosci. 2012 Oct;13(10):701-12. doi: 10.1038/nm3346. Epub 2012 Sep 12. Rooks MG, Garrett WS, et al. "Gut microbiota, metabolites and host immunity." Nat Rev Immunol. 2016 May 27;16(6):341-52. doi: 10.1038/nri.2016.42. 3 Levy M, Kolodziejczyk, et al. "Dysbiosis and the immune system." Nat Rev Immunol. 2017 Apr;17(4):219-232. doi: 10.1038/nri.2017.7. Epub 2017 Mar 6. 4 MarketsANDMarkets Human Microbiome Market by Product Global Forecast to 2028 https://www.marketsandmarkets.com/Market-Reports/human-microbiome-market-37621904.html

12 Kapoor MP, et al. "Soluble dietary fibre partially hydrolysed guar gum markedly impacts on postprandial hyperglycaemia, hyperlipidaemia and incretins metabolic hormones over time in healthy and glucose intolerant subjects." 13 Inoue R et al. "Dietary supplementation with partially hydrolyzed guar gum helps improve constipation and gut dysbiosis symptoms and behavioral irritability in children with autism spectrum disorder" J Clin Biochem Nutr. 2019 May;

14 Yasukawa Z et al. "Effect of Repeated Consumption of Partially Hydrolyzed Guar Gum on Fecal Characteristics and Gut Microbiota: A Randomized, Double-Blind, Placebo-Controlled, and Parallel-Group Clinical Trial." Nutrients. 2019 Sep 10;11(9):2170. 15 Belkaid Y et al. "Role of the Microbiota in Immunity and inflammation." Cell. 2014 Mar 27;157(1):121-141. 16 Rao, T.P, et. al. Br J Nutr 2015; 113:1489-1498. 17 Dinan TG et al. "The microbiome-gut-brain axis in health and disease." 2017;46(1):77-89.

Sunfiber® can be formulated into dietary supplements, functional foods & beverages, powdered drink applications for improved mouth feel, or as a processing aid to replace non-nutritious ingredients

Sunfiber® is part of an exclusive portfolio of proprietary ingredients from NutriScience Innovations, LLC and is a registered trademark of Taiyo International, Inc.

\*\* Health Canada claims

9 Russo L et al. "Partially hydrolyzed guar gum in the treatment of irritable bowel syndrome with constipation: effects of gender, age, and body mass index." Saudi J Gastroenterol. Mar-Apr 2015;21(2):104-10. 10 Yasukawa Z et al. "Effect of Repeated Consumption of Partially Hydrolyzed Guar Gum on Fecal Characteristics and Gut Microbiota: A Randomized, Double-Blind, Placebo-Controlled, and Parallel-Group Clinical Trial." 11 Carvalho L, Brait D, et al. "Partially Hydrolyzed Guar Gum Increases Ferroportin Expression in the Colon of Anemic Growing Rats" Nutrients. 2017 Mar; 9(3): 228. Published online 2017 Mar 3. doi: 10.3390/nu9030228