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Prebiotics Big Picture - Beyond Sports Performance

MISSION

Champion the prebiotics category by increasing public awareness and understanding of the science, supporting both well-known and newfound benefits, and creating needed transparency about prebiotics and their interaction with the microbiome.

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MEMBERS

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Introductions

Education

- *MS –Human nutrition*
- *CNS® (Certified Nutrition Specialist)*
- *LDN – Illinois license*

Specialty

- *Metabolic health*
- *Gut health*
- *Functional approach*

Interests

- *Nutrition/medical research*
- *Exercise performance*
- *jiu jitsu (purple belt), music, dogs*

The human microbiome

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Microbiome big picture

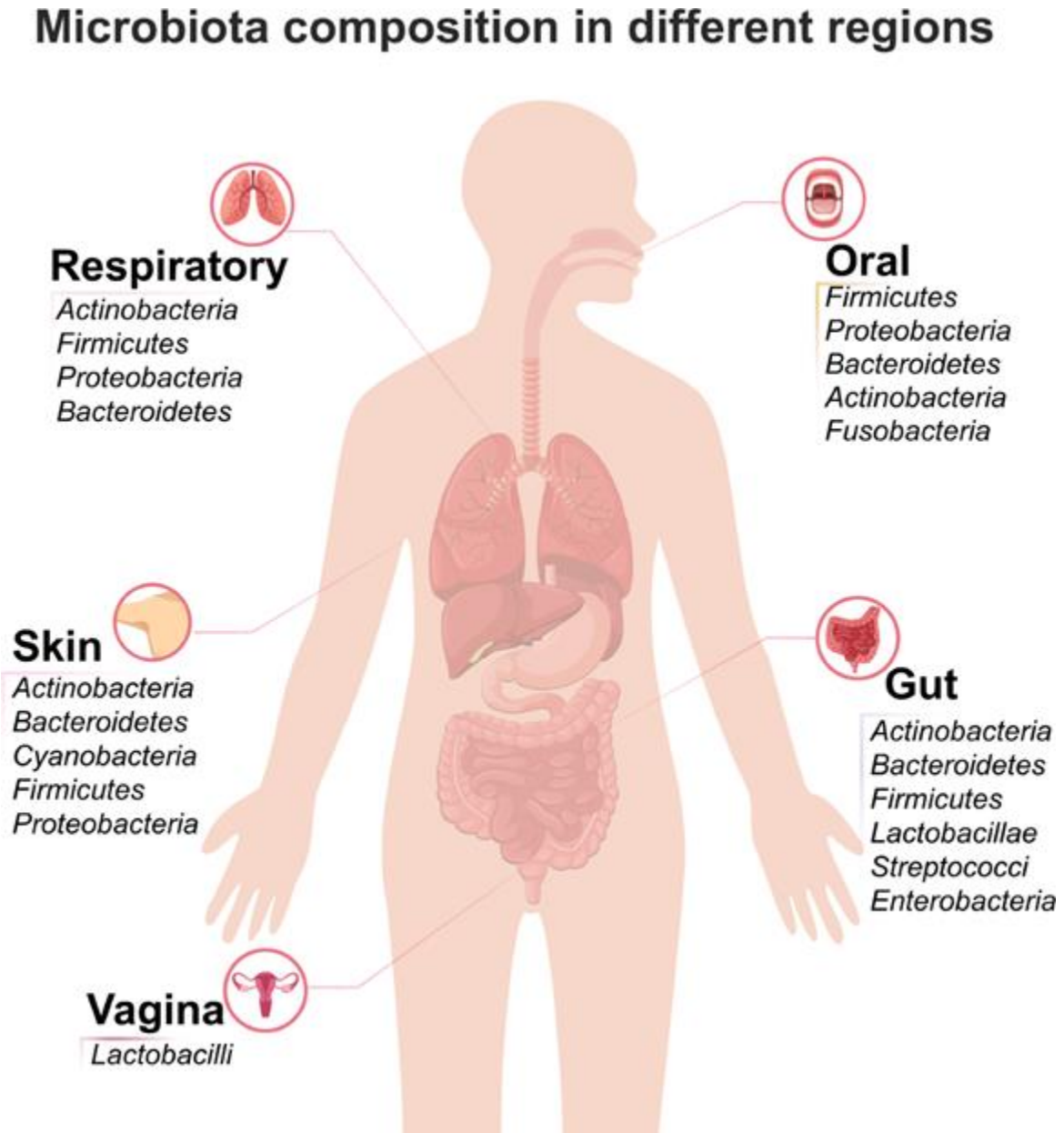
- Collection of microorganisms living in and on the human body
- Includes bacteria, fungi, viruses, and other microbes
- Varies by body site: gut, skin, mouth, vagina, etc.

Importance

- Plays crucial roles in human health and disease
- Influences immune system development and function
- Protects against pathogens

Impact on human health

- Gut microbiome:
  a. Breaks down complex carbohydrates
  b. Produces short-chain fatty acids
  c. Synthesizes vitamins (B's, K2)
- Skin microbiome:
  a. Enhances skin immunity
  b. Involved in wound healing
- Oral microbiome:
  a. Contributes to oral health
  b. May influence systemic diseases
- Vaginal microbiome:
  a. Protects against infections
  b. Maintains vaginal pH



A (brief) history of prebiotics

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Origins of prebiotic research

- *Early 20th century scientist Élie Metchnikoff proposed consuming certain bacteria could promote health when consumed through fermented foods.*
- *1990s the term "prebiotic" was formally defined by Dr. Marcel Roberfroid as a non-digestible food ingredient that selectively stimulates beneficial bacteria in the colon.*

Modern developments

- *Due to advances in microbiome research, the early 2000s saw renewed interest, leading to a better understanding of how prebiotics contribute to gut health.*
- *The focus shifted towards identifying various types of dietary fibers with prebiotic properties.*
- *Recognition of prebiotics as functional food components continue to grow.*

WHAT IS A PREBIOTIC?

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GPA defines a prebiotic as "*A product or ingredient that is utilized by the microbiota producing a health or performance benefit.*"

A prebiotic effect is "*A health or performance benefit that arises from alteration of the composition and/or activity of the microbiota, as a direct or indirect result of the utilization of a specific and well-defined product or ingredient by microorganisms.*"

Mechanisms of action

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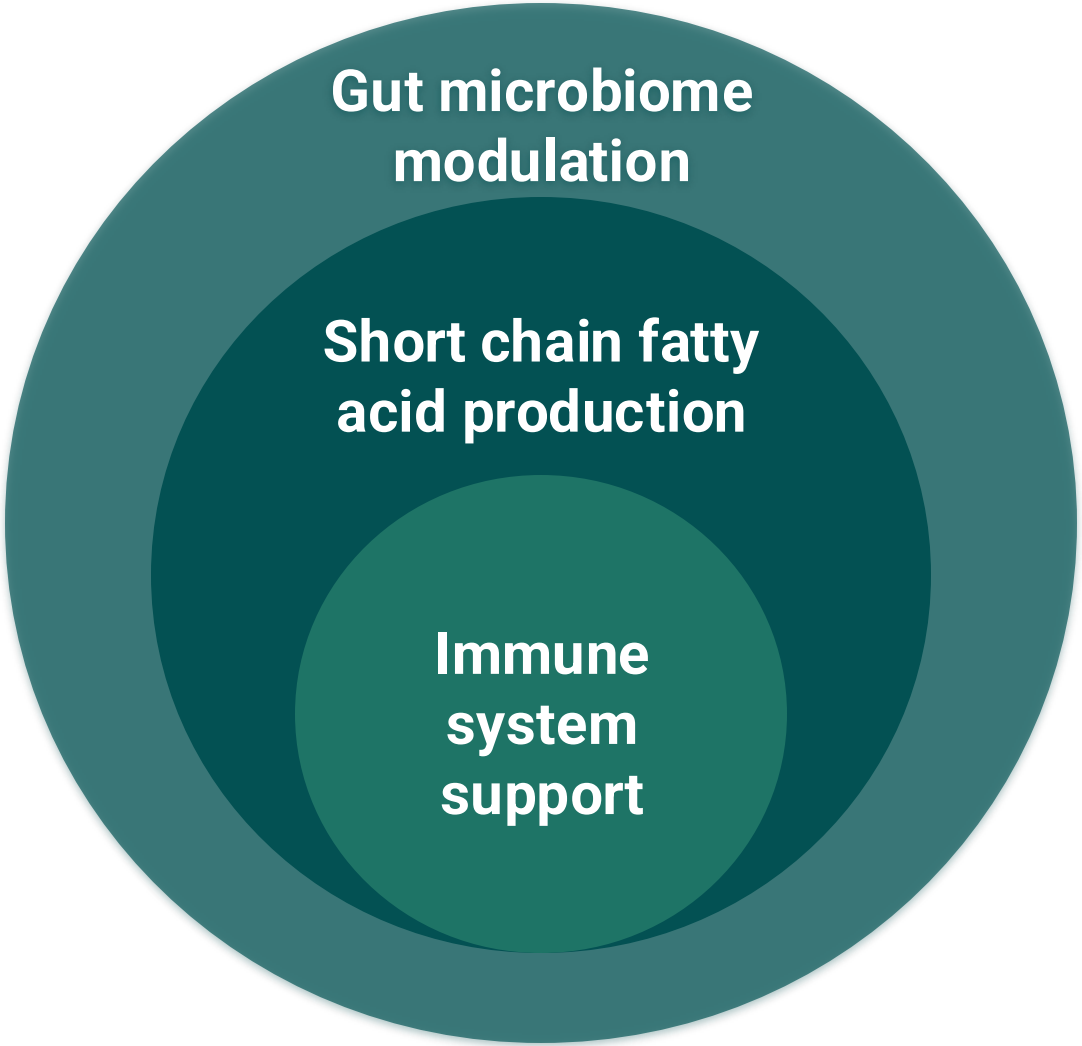

Strong research for prebiotic benefit

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Growing Interest for broad applications

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Prebiotic health benefits

- Gut health
- Metabolic function
- Immune support

Chronic condition that prebiotics can support

- Obesity
- Type 2 diabetes
- Cardiovascular health
- Mental health concerns

Prebiotics in practice

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Systems-based, individualized approach that integrates diet, lifestyle, and health needs

- **Systems Biology** - All body systems are interconnected. Changes in one area affect others.
- **Bio-individuality** - Each person has unique nutritional needs based on their genetics, lifestyle, medical history, and environmental factors. One-size-fits-all approaches are ineffective.
- **Holistic Approach** - Brings in all aspects of a person's life - diet, sleep, stress levels, relationships, and mental health.

How I use prebiotics

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Gut health optimization

- Greater diversity is shown to improve digestion, support immune function, and lower inflammation.

Personalized strategies for symptom management

- Individual responses with tolerance and effectiveness differ with various prebiotics.
- As with IBS or SIBO, many patients may not tolerate certain fibers.
- Specific prebiotics can be used in the context of FODMAP sensitivities, such as polyphenols.

Supporting metabolic health

- Supports healthy blood sugar levels, improved metabolic health.

Up Next:

Targeting the gut and its resident microbes to support athlete health

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