

Associated Health Issues

Beneficial Bacteria	Role in Gut Health	Foods to Promote Their Growth	Diseases Associated with Lack
1. Lactobacillus	Produces lactic acid; inhibits harmful bacteria; supports digestion and immune function	Yogurt with live cultures, kefir, sauerkraut, kimchi, miso, tempeh	Increased risk of gastrointestinal infections, diarrhea, and weakened immune function
2. Bifidobacterium	Ferments dietary fibers; produces SCFAs; supports immune function	Yogurt, kefir, fermented vegetables, whole grains, bananas, onions, garlic, asparagus	Higher susceptibility to IBD, IBS, allergies, and infections
3. Akkermansia muciniphila	Maintains gut lining integrity; supports metabolism; anti-inflammatory effects	Cranberries, pomegranates, grapes, polyphenol-rich foods, fish oil, prebiotic fibers	Obesity, metabolic disorders (e.g., type 2 diabetes), inflammation
4. Faecalibacterium prausnitzii	Produces butyrate (a SCFA); anti-inflammatory effects; supports colon health	Bananas, apples, barley, oats, resistant starches, inulin-rich foods	Increased risk of IBD, especially Crohn's disease
5. Roseburia	Produces butyrate; supports gut lining; anti-inflammatory effects	Whole grains, dietary fibers, resistant starches, inulin-rich foods	Obesity, insulin resistance, metabolic syndrome, and IBD
6. Ruminococcus	Breaks down complex carbohydrates; produces SCFAs	Whole grains, dietary fibers, prebiotic-rich foods	IBS, IBD, reduced SCFA production
7. Prevotella	Ferments fibers; produces SCFAs; associated with high-fiber diets	High-fiber plant foods, whole grains, legumes, fruits, vegetables	Reduced SCFA production; potential impact on glucose metabolism
8. Eubacterium	Produces butyrate; supports gut health	Dietary fibers from whole grains, fruits, vegetables	IBD, colorectal cancer, inflammatory conditions
9. Bacteroides	Breaks down complex molecules; produces SCFAs	High-fiber foods, complex carbohydrates, vegetables, legumes	Digestive disorders; imbalance may relate to obesity and insulin resistance
10. Streptococcus thermophilus	Produces lactase; supports lactose	Yogurt, fermented dairy products	Lactose intolerance symptoms, impaired

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	digestion; produces beneficial compounds		digestion of dairy products
11. Lactococcus lactis	Produces lactic acid; used in cheese making; supports gut health	Fermented dairy products like cheese, buttermilk	Digestive discomfort; less direct evidence of disease association
12. Bifidobacterium longum	Ferments fibers; produces SCFAs; supports immune function	Yogurt, kefir, fermented foods, prebiotic fibers	Increased susceptibility to infections, allergies, digestive disorders
13. Lactobacillus plantarum	Produces lactic acid; supports gut barrier; antioxidant properties	Fermented foods like sauerkraut, kimchi, pickles	Digestive issues, inflammation, weakened gut barrier
14. Leuconostoc	Produces lactic acid and CO ₂ ; used in vegetable fermentation	Sauerkraut, kimchi, fermented vegetables	Not well-defined; generally supports gut health
15. Pediococcus	Produces lactic acid; contributes to fermented foods	Fermented foods like sauerkraut, kimchi, fermented sausages	Not well-defined; generally supports gut health
16. Propionibacterium freudenreichii	Produces propionate (a SCFA); supports gut health; synthesizes vitamin B12	Swiss-type cheeses like Emmental, Jarlsberg, and Swiss cheese	Vitamin B12 deficiency, digestive issues
17. Bacillus coagulans	Spore-forming probiotic; survives stomach acid; supports digestion	Fermented foods, probiotic supplements	Digestive discomfort, IBS symptoms
18. Clostridium cluster XIVa (e.g., Eubacterium rectale)	Produces butyrate; supports colon health; anti-inflammatory effects	High-fiber foods, resistant starches, whole grains, fruits, vegetables	IBD, colorectal cancer, inflammatory conditions
19. Collinsella	Involved in carbohydrate metabolism; produces SCFAs	High-fiber foods, whole grains, legumes	Imbalance may be associated with metabolic disorders
20. Blautia	Produces SCFAs; anti-inflammatory properties	High-fiber foods, whole grains, legumes, fruits, vegetables	Inflammation, metabolic disorders
21. Coprococcus	Produces butyrate; associated with mental health	High-fiber foods, whole grains, fruits, vegetables	Linked to depression and mental health disorders

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22. Bifidobacterium bifidum	Supports immune function; inhibits harmful bacteria	Yogurt, kefir, fermented foods, prebiotic fibers	Increased risk of infections, allergies, digestive issues
23. Lactobacillus rhamnosus	Supports gut barrier; may improve mood and reduce anxiety	Yogurt with live cultures, kefir, fermented foods	Digestive issues, anxiety, mood disorders
24. Streptococcus salivarius	Produces beneficial enzymes; supports oral and gut health	Yogurt, fermented dairy products	Oral health issues, throat infections
25. Weissella	Produces lactic acid; contributes to fermented foods	Fermented vegetables, kimchi, sourdough bread	Not well-defined; generally supports gut health

Key Points

- **Gut Microbiome Balance:** A balanced and diverse gut microbiome is crucial for overall health. Imbalances (dysbiosis) can contribute to various health issues.
- **Short-Chain Fatty Acids (SCFAs):** Many beneficial bacteria produce SCFAs like butyrate, acetate, and propionate, which are important for colon health, immune function, and reducing inflammation.
- **Dietary Influence:** Diet is one of the most significant factors influencing the composition of the gut microbiome. Consuming a variety of fibers, prebiotics, and probiotics supports beneficial bacteria.
- **Disease Associations:** Conditions such as inflammatory bowel disease (IBD), irritable bowel syndrome (IBS), obesity, metabolic disorders, mental health issues, and allergies have been linked to gut microbiome imbalances.

Additional Tips

- **Consult Healthcare Professionals:** For concerns about gut health or related diseases, consult a healthcare provider or a gastroenterologist.
- **Personalization:** Individual gut microbiomes vary greatly. What promotes beneficial bacteria in one person may differ in another.
- **Lifestyle Factors:** Besides diet, factors such as stress, sleep, exercise, and antibiotic use can affect gut bacteria.