Probiotics vs Prebiotics

# Definition

Probiotics: Live microorganisms which, when administered in adequate amounts, confer a health benefit on the host.  
Prebiotics: Non-digestible food components (mainly fibers) that selectively stimulate the growth and activity of beneficial bacteria in the gut.

# Examples

Probiotics: Lactobacillus, Bifidobacterium, Saccharomyces boulardii (commonly found in yogurt, kefir, and dietary supplements).  
Prebiotics: Inulin, fructooligosaccharides (FOS), galactooligosaccharides (GOS) (found in garlic, onions, bananas, oats, asparagus).

# Function

Probiotics:  
- Restore and maintain healthy intestinal microbiota.  
- Reduce colonization by pathogenic organisms.  
- Improve digestion, immunity, and may reduce risk of diarrhea.  
  
Prebiotics:  
- Serve as “food” for probiotics.  
- Promote growth and activity of beneficial gut flora.  
- Enhance colonic health by fermentation to short-chain fatty acids.

# Summary Table

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| Feature | Probiotics | Prebiotics |
| Definition | Live microorganisms (beneficial bacteria/yeast) | Non-digestible dietary fibers that feed probiotics |
| Examples | Lactobacillus, Bifidobacterium, Saccharomyces | Inulin, FOS, GOS, dietary fibers in plants |
| Function | Direct health effects, colonization resistance | Nourish and support probiotic bacteria growth |

# Reference

Kliegman RM, St. Geme JW, Blum NJ, Shah SS, Tasker RC, Wilson KM. Nelson Textbook of Pediatrics, 21st Edition. Philadelphia, PA: Elsevier; 2020. Chapter: Gastroenterology – Probiotics and Prebiotics.