

Chapter 5

MICROBES IN THE GUT OF HUMANS

~Exploring the gut microbes in human health and diseases

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ABSTRACT

The human gut microbiome, a diverse community of bacteria, viruses, fungi, and archaea, plays a central role in digestion, immune regulation, and neurological function. Established at birth and shaped throughout life by diet, genetics, antibiotics, and lifestyle, the microbiota evolves from early colonization by *Bifidobacterium* and *Lactobacillus* to an adult-like composition dominated by *Firmicutes* and *Bacteroidetes*. Gut microbes ferment complex