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Gut microbiota and obesity.

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Abstract

The human intestine harbors a complex bacterial community called the gut microbiota. This microbiota is specific to each individual despite the existence of several bacterial species shared by the majority of adults. The influence of the gut microbiota in human health and disease has been revealed in the recent years. Particularly, the use of germ-free animals and microbiota transplant showed that the gut microbiota may play a causal role in the development of obesity and associated metabolic disorders, and lead to identification of several mechanisms. In humans, differences in microbiota composition, functional genes and metabolic activities are observed between obese and lean individuals suggesting a contribution of the gut microbiota to these phenotypes. Finally, the evidence linking gut bacteria to host metabolism could allow the development of new therapeutic strategies based on gut microbiota modulation to treat or prevent obesity.

KEYWORDS: Antibiotics; Fecal transplant; Gnotobiotic models; Intestinal permeability; Metabolic syndrome; Microbiome; Prebiotics; Probiotics

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