Abstract

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The Relevance of the Human Microbiome to Health and Drug Interaction

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Abstract

The human microbiota represents the breadth of microbiological species that make their habitat within the human organism, outnumbering human cells 1.3:1 in any given person.The make up of this environment is split into 5 main phyla: Firmicutes, Bacteroidetes, Actinobacteria, Proteobacteria and Verrucomicrobia and can be defined by method of birth, diet and drug consumption. Representing roughly 100x the gene count of the human genome, it is now becoming evident that the content of the microbiome can have far reaching effects on physical and mental health. Higher ratios of Firmicutes being associated with infantile obesity, higher levels of 5-HT, dopamine and noradrenaline,skewing the Hypothalamic Pituitary Axis, thus disrupting mood regulation and mental health. The existence of this internal environment has implications for drug development, with differing hydrolase output by certain bacterial strains in the gut being linked to the wildly differing receptability to statins between patients. Moving forward drug developers will need to consider interactions with the microbiome, and will find even more value in harnessing it.

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Biography

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