

Microbes and Mood – A Balance Between Nature and Nurture

Our Microbes

All of the surfaces of your body are covered with microbes.

The largest population of microbes is found in your gut.

Microbes include bacteria, viruses, fungi, protozoa, parasites.

Microbiome refers to all of the microbes and their genetic material.

Microbiota refers to the microbes themselves

Gut Microbes and Mental Health

Communication between our microbiota and the brain are important to brain development and mental health. Changes in microbiota composition and function have been observed in individuals with autism, depression, and schizophrenia.

Your Microbiome Is Your Own

Each person has a unique profile of microbes that starts when we are born and changes over time. Identical twins have identical genetic information but still have their own distinct microbiome. But our genes matter since identical twins' microbiota is more similar than microbiota of fraternal twins.

The first 1000 days

Exposure to microbes and establishment of bacteria population occurs primarily at birth and continues through development. In infants, dynamic changes in microbiota make-up and the diversity of the content occurs over the first year of life. Both mode of delivery, vaginal versus C-section, and feeding by breast milk or formula, effects the development of the microbiome.

Drugs and Bugs

Antibiotics are a class of drugs that specifically target bacteria. Exposure to antibiotics changes the microbiome. Non-antibiotic drugs including those used to treat mental disorders influence the microbiome and communication between the microbiota and the brain.

Psychobiotics – hype or hope?

“Psychobiotics” are live bacteria (probiotics) and other products (prebiotics) that when ingested confer mental health benefits through interactions with commensal gut bacteria. The potential of “psychobiotics” as interventions in psychiatry is of great interest. A few studies in healthy individuals and clinical populations related to mental health have shown a benefit of probiotics on mood and anxiety.

Microbes Help Food Influence Mood

You’ve heard of the saying you are what you eat, but did you know you grow what you feed? What you eat can greatly effect your gut microbiome. People who are vegetarian have a different microbiome from those who are omnivores. Diets that include a lot of high fat are known to promote growth of microbes are linked to inflammation, while diets rich in fiber and omega-3 foster the growth of beneficial microbes.