

Obesity, Parkinson's disease, and pesticides: Exploring the gut-brain connection

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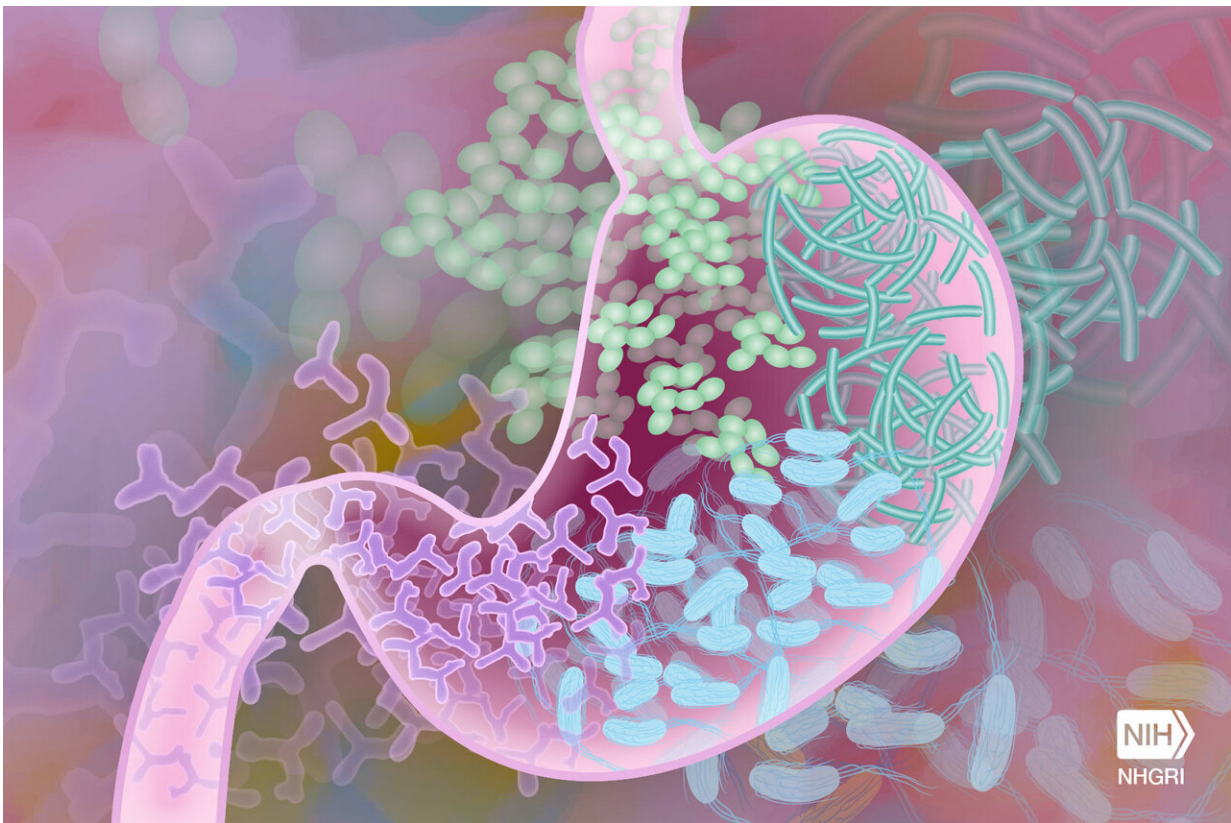


Illustration of bacteria in the human gut. Credit: Darryl Leja, National Human Genome Research Institute, National Institutes of Health

The community of microorganisms living in the human gut, known as the gut microbiome, is increasingly recognized as playing a pivotal role

in metabolic conditions such as obesity and neurological diseases including Parkinson's disease. The findings were presented at Neuroscience 2022, the annual meeting of the Society for Neuroscience and the world's largest source of emerging news about brain science and health.

The human body hosts trillions of microbes, and the gut microbiome in particular appears to play an important role in human health and disease through several mechanisms. Advances in tools and techniques are allowing researchers to probe how interactions between our gut microbes, environment, and biology could impact a variety of health conditions.

Today's new findings show that:

- Early life adversity is associated with gut microbial imbalances, inflammation, and brain structure differences with BMI (Johnny Figueroa, Loma Linda University)
- Gut microbiota changes may contribute to abnormally folded proteins traveling from the colon to the brain, leading to the loss of dopaminergic neurons in Parkinson's disease (Yoon-Seong Kim, Rutgers-Robert Wood Johnson Medical School)
- Oral pesticide exposure can alter dopamine pathways in the brain and lead to changes in the gut microbiome that are relevant to Parkinson's disease (Timothy R. Sampson, Emory University)

"The [neuroscience research](#) presented today illustrates that, when it comes to metabolic and neurological disorders, we cannot target only the brain. Everything that happens in the gut has an impact on the brain," says Sonia Villapol, assistant professor of neurosurgery at Houston Methodist Research Institute, who studies brain recovery through the lens of peripheral mechanisms, including the [gut microbiome](#).

"A better understanding of interactions between the gut and the brain will bring great opportunities for the diagnosis, treatment, and prevention of diseases."

More information: Conference:

www.sfn.org/meetings/neuroscience-2022

Conference abstract: www.abstractsonline.com/pp8/#!/...9/presentation/77588

Conference abstract: www.abstractsonline.com/pp8/#!/...9/presentation/68098

Conference abstract: www.abstractsonline.com/pp8/#!/...9/presentation/68083

Provided by Society for Neuroscience

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