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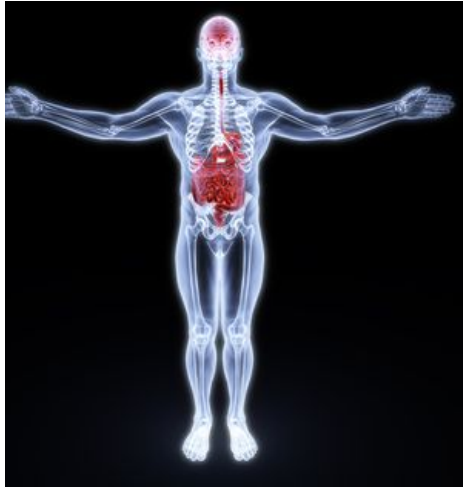
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New Cerebrum Story Outlines Relationship Between the Gut and Brain

From the time you are born, millions of bacteria from your mother, food, air, the family dog, and everything you touch start setting up camp in your body. In fact, these trillions of microbial partners—symbionts—outnumber our own cells by as many as 10 to one. The environment where these microorganisms reside is known as the microbiome, and most live in your colon, where they help signal your body to digest food, fight pathogens, break cholesterol down, and more.

The microbiome is the focus of July's [Cerebrum](#) feature (posting on July 1): “Gut Feelings: Bacteria and the Brain.” Authored



Credit: Sebastian Kaulitzki/shutterstock.com

by [Jane Foster](#), Ph.D., an associate professor in the Department of Psychiatry and Behavioral Neurosciences at the [Brain-Body Institute](#) at McMaster University in Canada, her story focuses on animal studies that have shown microbiota to be instrumental in how our brain develops. The gut-brain axis— sometimes referred to as the “second genome” or the “second brain”— could have implications in how we behave, react to stress, and respond to treatment for depression and anxiety.

Among the most exciting new frontiers in neuroscience, the microbiome is better known for its relationship to probiotics, the so-called “good bacteria” that has been synthesized in pill or capsule form or used in food products such as yogurt, dark chocolate, soft cheese, pickles, and more. Commonly found next to the vitamin supplements on supermarket or drugstore shelves, probiotics claim to support immunity and fix everything from bloat to skin trouble to digestive problems, and sales of anything having to do with “good bacteria” supplements have increased by \$1 billion

in the United States in the last two years alone.

While the jury is still out on the exact impact of probiotics, marketers were likely ecstatic to read a [story in the *Huffington Post*](#) last week reporting that researchers at UCLA found that regularly eating yogurt with probiotics seems to affect brain functioning in women. In this small study, researchers noted that past studies have shown a gut-brain connection in terms of the brain sending signals to the gut. But this new study shows that the gut could also send signals to the brain.

More studies on the gut-brain axis are certainly on the way. A recent five-year, \$173-million [National Institutes of Health-funded Microbiome Project](#) has been followed by a new, Human Food Project citizen-science initiative called the [American Gut project](#). Launched by researchers at the University of Colorado and linking investigators from around the world, the project aims to enroll 10,000 people (and their dogs and cats, too) to help them find out just what’s living in their intestines. Writes Foster: “The research is flourishing across the world as scientists strive to learn more. Stay tuned.”

--Bill Glovin

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