

# How the brain and gut influence each other

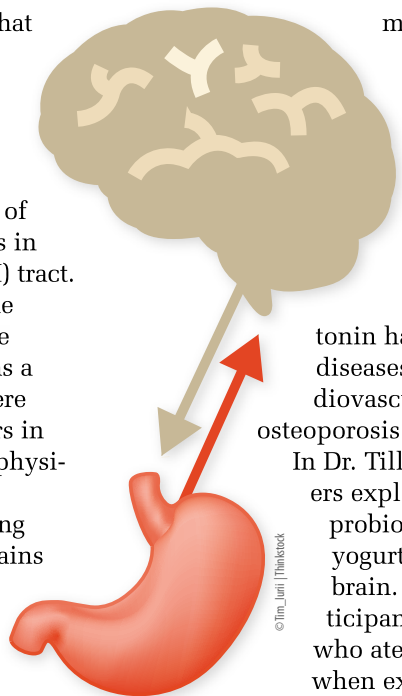
*Research points the way toward possible new IBS treatments.*

It's long been known that psychological stress can exert a heavy toll on the body. Negative thoughts and feelings can trigger a tightening in your chest, shortness of breath, and disturbances in your gastrointestinal (GI) tract. Irritable bowel syndrome (IBS), is a disorder of the GI tract. It's referred to as a "syndrome" because there are no biological markers in the body and hence no physical diagnostic tests.

"We diagnose by using symptom criteria," explains Dr. Kirsten Tillisch, MD, Chief, Integrative Medicine, Oppenheimer Family Center for the Neurobiology of Stress, Division of Digestive Diseases, David Geffen School of Medicine at UCLA. "Abdominal pain or discomfort that occurs in the context of a change in bowel frequency, change in stool consistency or a relief of that pain after a bowel movement are among the typical IBS symptoms."

## How the gut influences the brain: a new scientific frontier

Doctors aren't sure exactly why IBS occurs, but among the culprits may be poor communication between the brain and nerves of your gut. A lot of research is underway to explore the brain-gut axis. Early outcomes point to possible changes in the way a number of diseases are treated in the future. For example, although serotonin is well known as a brain neurotransmitter, it is estimated that 90 percent of the body's serotonin is



*The communication between the brain and gut goes both ways. They influence each other.*

made in the digestive tract. Serotonin plays multiple roles in the body, influencing everything from mood to sleep to GI function. Altered levels of serotonin have been linked to diseases such as IBS, cardiovascular disease, and osteoporosis.

In Dr. Tillisch's lab, researchers explored what effects probiotic bacteria in yogurt might have on the brain. They found the participants (healthy women) who ate yogurt were calmer when exposed to images of angry and frightened faces. The fight or flight reflex was less reactive at the level of the brain in the yogurt eaters. Study participants didn't report being less anxious; rather researchers saw a change in the way the brain responded on a subconscious level.

"The bacteria that live in our gut communicate through the gut to the nervous system to the brain, and it's a conversation back and forth," explains Dr. Tillisch. "Gut bacteria can adjust to how we feel pain and how we secrete fluid into the gut and how the gut works. IBS can respond to probiotics in yogurt in some circumstances."

## The good news about IBS

IBS is referred to as a functional disorder, meaning that there is nothing wrong with the actual structure of the bowel. It's how the GI tract is working (or not) that causes problems. On the

plus side, therefore, it's not considered dangerous or progressive when compared to cancers or autoimmune diseases that worsen through time. That does not mean IBS isn't painful or disruptive to quality of life. Before receiving a diagnosis of IBS, some patients, especially older patients, may need a few simple tests to rule out other diseases that might cause similar symptoms.

## Treatments that can improve IBS include:

Stress reduction and some medications can help with IBS. Recommended treatments that target the brain-gut axis include:

- Cognitive behavioral therapy
- Hypnosis
- Mindfulness-based stress reduction
- Some antidepressants

Contrary to popular belief, IBS is not always caused by diet. Some people have specific food triggers, but in many people just the act of eating can lead to symptoms. Various diets exist for IBS and can be effective. To keep the gut's bacterial populations healthy it's best to eat a diverse diet that incorporates lots of different fruits and vegetables.

Stress is a big factor in IBS. Retirement can actually bring on stress because of the huge lifestyle changes and loss of positive distractions. Also, people might be under chronic stress and not realize it because it is such a constant in their lives. "When you take a bird's-eye view of someone's symptoms you can sometimes identify long-term stressors," says Dr. Tillisch. "In an older population, I often see people who are taking care of either a much older parent or spouse who is ill. That can cause real stress on the emotions, and that can translate to symptoms in the body."

Defining personal stressors and finding ways to reduce reactivity can help quell IBS symptoms. As for eating yogurt, the current recommendation is it can't hurt and it just might help. Look for yogurt with live cultures and without added sugar. ■