

STRESS AFFECTS YOUR HEALTH AND YOUR DIGESTIVE SYSTEM

By Dr. DicQie Fuller

The word “stress” is such a broad term and often I hear it used to describe a feeling. Stress is actually a reaction to a stimulus or threat that may be real or perceived. This reaction disturbs our internal balance (homeostasis) both physically and mentally. Stress can be emotional strain and it can be either acute or chronic. It tends to be those chronic stressors from our lifestyle such as negative beliefs or our environment that are far more damaging to our health.

Your gut is especially vulnerable to the presence of chronic and even acute stress, demonstrating stress-induced changes in gastric secretion, gut motility, mucosal permeability / barrier function, visceral sensitivity, and mucosal blood flow. There has also been evidence to suggest that gut microorganisms may respond directly to stress-related host signals.

The biochemical changes that occur in times of stress have significant and immediate impact on gut function.

A family of peptides called corticotrophin releasing factors (CRF) are responsible for coordinating the body’s response to stress, and CRFs have a potent effect on the gut through modulation of inflammation, increase of gut permeability, contribution to visceral hypersensitivity, increased perception to pain, and modulation of gut motility. This hormone affects the hypothalamic-pituitary axis (HPA) to eventually stimulate the secretion of cortisol from the adrenal glands.

Not only does stress affect the physiological function of the gut, but it has also been shown to actually cause changes in the composition of the microorganisms, possibly due to the changes in neurotransmitter and inflammatory cytokine levels.

Chronic exposure to stress may lead to the development of a variety of gastrointestinal diseases such as gastroesophageal reflux disease (GERD), peptic ulcer disease, IBD, IBS, and food allergies. Our clinical studies have shown that psychological stress slows

normal small intestinal transit time, encourages overgrowth of bacteria, and even compromises the intestinal barrier. Chronic stress may therefore play an important role in the development of small intestinal bacterial overgrowth (SIBO) and leaky gut syndrome.

What is Leaky Gut Syndrome?

Leaky gut, or intestinal permeability, is a condition in which the lining of the small intestine becomes inflamed, damaged, and porous, allowing undigested foods, bacteria, fungus, and other foreign invaders into the sterile environment of the bloodstream. Once in the bloodstream these toxins trigger the immune system, causing inflammation which leads to a long and varied list of symptoms.



Stress in all its forms has been shown to cause leaky gut. Stress also disrupts the balance of healthy bacteria in the gut, which further promotes leaky gut. Toxins in our food, water, and environment (such as from pesticides in food, carpets in your home, exhaust fumes from vehicles, industrial food processing, and GMOs) also put stress on our systems, which results in leaky gut. Gluten causes leaky gut by increasing levels of a protein called zonulin, which opens up the spaces between the intestinal cells, even if you don't have gluten sensitivity. If you have been emotionally stressed in addition to being exposed to gluten, pesticides, and/or heavy metals (in water and/or dental fillings) it is quite likely that you have at least some degree of leaky gut.

Did you know what goes on in your gut could dictate your mood, your perspective, and your sense of optimism? Having earned the title of "the second brain," the gut is in constant dialogue with the brain.

The connection between the gut and our psychology is a two-way street. On the one hand, gastrointestinal inflammation and infection can contribute to things like depression and brain fog. On the other, mental stress or trauma can cause intestinal permeability or "leaky gut." As it turns out, psychological stress can do more than influence the integrity of our own cells. Scientists have found that the bacteria living inside of us can actually detect whether or not we feel stress.

When we experience mental, emotional, or physical stress, we release stress hormones like cortisol and norepinephrine. These stress hormones are meant to protect us during

potentially dangerous events. They move energy stores into the muscle, increasing our heart rate and our breath. In the process, cortisol and norepinephrine shut down our digestive system and our immune system. Stress hormones move our body from digestion to a fight-or-flight response.

Stress-caused Leaky Gut is the root of many health conditions.

As I mentioned before, the bacteria that are normally present in the digestive system can read stress in the body and detect the presence of stress hormones. Researchers have found that usually harmless microbes will suddenly become *pathogenic* in response to the stress hormones that we release.

When bacteria become pathogenic, they multiply rapidly or mutate, and this often leads to infection. Once this happens, the inner ecology of the gut is thrown out of balance. And once the inner ecology of the gut becomes imbalanced, the door opens for a wide range of health conditions to develop and manifest.

Keep in mind that stress not only signals bacteria to multiply and mutate, it also *shuts down* the digestive system and the immune system. These systems usually protect us from disease. This means that when we experience stress, we are more vulnerable than ever to bacterial overgrowth and infection.

In addition to the unnoticed stressors of daily living, many of us spend a great deal of time feeling additional stress due to global catastrophes, family drama, or personal struggles. Regardless of the cause, the body releases the same stress hormones. And these stress hormones can ultimately contribute to a long list of health disorders, including infection from opportunistic bacteria.

As it turns out, the health of the digestive system is central to how good we feel on a daily basis. And our mental wellbeing influences whether or not the bacteria normally present in the digestive tract are able to cause disease.

Considering that *chronic diseases* such as diabetes, autoimmunity, and the liver's failure to neutralize harmful substances as well as *common symptoms* like eczema, anxiety, fatigue, weight gain, bloating, and muscle/joint pain can all be caused by Leaky Gut Syndrome otherwise known as LGS or intestinal permeability, it is imperative that you determine whether it may be occurring in your body.

Leaky gut is not well recognized by most medical practitioners, and is not found with the usual tests such as endoscopy or colonoscopy. Still, there are close to 11,000 research

studies about intestinal permeability from the past sixty years that clearly indicate that this is a real health issue, including 35 new studies released in just the past month.

For many, identifying leaky gut can be life changing because it is a condition that can be addressed with diet changes, supplemental enzymes, and probiotics that help the intestinal lining to heal.* In a medical system where people often find themselves reliant on medications, it is empowering to discover that there are natural solutions to address not only leaky gut but also challenging health concerns throughout their body.

Ask your health care professional how you can reverse the effect of stress in your life.



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