

# Did you know your gut is smart and tough?



## You're strong, on the inside and out

In some cultures, the gut is thought of as the root of instinct and emotions. The saying goes, “trust your gut,” which means trusting your intuition about something. The gut is also associated with toughness of character and stamina. Remember the saying, “Doing that took guts!” As it turns out, these are both great characterizations of the gut.

### The gut is smart

It is sometimes called the “second brain” based on the enteric nervous system (ENS) of about 100 million nerves in the lining of the gut. Its main function is controlling digestion, from the moment you swallow, to the release of enzymes that break down the food to nutrient absorption and waste elimination. In the womb, the ENS actually develops from the same tissue that makes up the central nervous system. This is why the ENS has many structural and chemical similarities to your brain.<sup>1</sup> While the ENS is not capable of forming thoughts like the brain in your skull, they communicate back and forth. Even now, as you're reading this, the brains in your gut and your head are communicating.

### The gut is tough

The gut has an army of microorganisms defending your body. In fact, without them, it would be extremely difficult to survive. 95 percent of the bacteria and microorganisms living on and in your body are found in the gut — about one hundred trillion microbes. These tiny beneficial bacteria, which are 10 to 50 times smaller than human cells, act together as a physical barrier protecting your gut.<sup>1</sup> They join together against pathogens (anything that causes a disease, like a virus or bad bacteria).<sup>2</sup> It's been found that we are first exposed to microbes when passing through the birth canal, even possibly when inside the womb. As we grow, our gut microbiome diversifies. As the microbiome grows, it can affect the body in numerous ways, including:

- Digest fiber, which helps prevent weight gain, diabetes, heart disease and certain forms of cancer
- Regulate the immune system, which controls how the body reacts to infection
- Control brain health, including improving symptoms of anxiety and depression
- Benefit heart health by promoting “good” cholesterol and triglycerides
- Reduce the risk of diabetes by controlling blood sugar



Sources:

1. Cleveland Clinic. Gut-Brain Connection, December 3, 2020. Available from [www.clevelandclinic.org](http://www.clevelandclinic.org).
2. *Nature Outlook*, The Gut Microbiome, January 29, 2020. Available from [www.nature.com](http://www.nature.com).

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