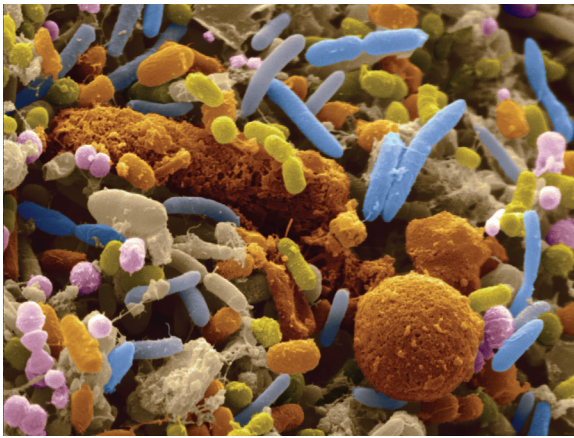




# Eating Disorders and Your Gut

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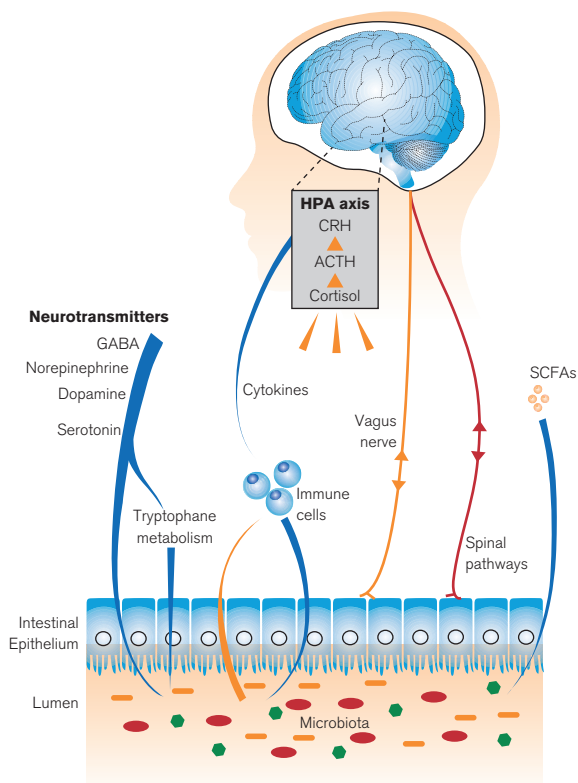


Gut bacteria develop during an individual's first year of life.

## FIGURE 10.10 How Do Your Brain and Gut Communicate With Each Other?

There are multiple pathways, which go in both directions between the brain and the gut. These pathways include the vagus nerve, the hypothalamic–pituitary–axis (HPA), the immune system (cytokines), and short-chain fatty acids (SCFAs).

Source: Dinan, Stilling, Stanton, & Cryan (2015). With permission from Elsevier.



An important new discovery concerning a possible contributing factor to eating disorders involves bacteria in the gut. As you will see, gut bacteria are involved in the emotionality and eating patterns of those with eating disorders. For all of us, there are more bacteria in our gut than there are cells in our body. It is estimated that there are around 150–200 species of common bacteria in the gut as well as 1,000 less common species (Dinan, Stilling, Stanton, & Cryan, 2015). Although there are similarities among people, each individual has a unique set of gut bacteria (Kleiman, Carroll, Tarantino, & Bulik, 2015). We now know that these gut bacteria (called the *microbiome* when referring to their genes) are associated with both health and illness. They also play a role in stress and psychopathology (De Palma et al., 2015). Gut bacteria can influence how medications can affect you, and they may reduce the effects of some psychotropic medications. That is, the medication interacts with the bacteria in your gut, and the bacteria in turn may influence how these substances are taken up by your body. In turn, the types of food you eat can influence the types of bacteria in your gut.

Gut bacteria develop during an individual's first year of life and are influenced by such factors as breast feeding (Bäckhed et al., 2015). We supply these gut bacteria with a constant source of nutrition, and they in turn are involved in brain development and functioning. Without gut bacteria, brain development, such as those processes involved in emotionality, do not develop appropriately. They are also associated with temperament during early childhood, although it is not known whether temperament influences gut bacteria or gut bacteria influence temperament (Christian et al., 2015). Recent investigations indicate that these microbes have a major impact on cognitive function and fundamental behavior patterns, such as social interaction and stress management. One mechanism is through changes in underlying biochemistry. That is, different forms of gut bacteria can generate specific neurotransmitters such as GABA, which is involved in anxiety. There are multiple pathways, which go in both directions between the brain and the gut as shown in *Figure 10.10*.

What is exciting to scientists is how these gut bacteria are involved in the emotionality and eating patterns of those with eating disorders. Initial research is beginning to offer a better