

The Mind-Gut Connection

From one end to the other, the gut is filled with billions of “good” and “bad” bacteria. Together, they weigh about as much as the brain, and some doctors believe they operate like a fully integrated organ in the body. The word for this organ is the microbiome or gut microbial flora.

Most of the advances in understanding depression in the past 20 years have not been in brain chemistry. Rather, it’s in our understanding of how the body affects the brain that the strides are being made. Metabolic health, inflammation, and – yes – the health of the microbiome all affect the brain and – in doing so – can dial mood and concentration up or down.

What that means is you’ve got to look out for the health of this microbiome to ward off depression. The so-called “good” bacteria in there help you stay alert and balance stress hormones like cortisol, which means you’ll be less worn down by stress. The “bad” bacteria do the opposite. They make you feel more fatigued and less motivated.

We literally feed these bacteria, and the bad ones like to eat sugar and junk food, while the good ones enjoy fiber, fruits, and vegetables. The bad bacteria actually make you crave more fats and sugars (so when you crave that pint of ice cream, it may not even be you who is craving it).

Benefits of a Healthy Gut

What is a “healthy microbiome.” It’s kinda like a healthy diet – well balanced and diverse – and a healthy diet is the main way to build it. The first evidence that better microbiome health leads to better brain health came from studies with probiotics, which are capsules full of healthy bacteria. These bacteria are dried up in a dormant state, but amazingly when put in a living organism they spring alive.

Since 2010 over a dozen clinical studies have found that anxiety and depression go down when healthy bacteria are added to the microbiome, whether through diet or probiotic capsules. They also sharpen memory and concentration and aid weight loss.

In one study, probiotics reduced the rate of bipolar episodes 3-fold over a 6 month period. They've also helped people with autism and schizophrenia, and are good for physical health (particularly diabetes and gastrointestinal disorders), and even have anti-aging effects. As we age, microbiome health declines.

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How do these little bacteria communicate with the brain? Lots of ways. They talk through the vagus nerve, which travels from the brain down to the body and is involved in depression. They balance stress hormones and lower inflammation. They raise growth factors like BDNF and produce vitamins that the brain uses to make serotonin.

Bad bacteria eat away at the gut lining, creating "leaky gut." This is syndrome that makes byproducts of digestion leak into the blood stream. That leakage raises inflammation, and inflammation causes depression by wearing down dopamine, the neurotransmitter responsible for pleasure, energy, and motivation. About 1 in 3 people with depression have elevated markers of inflammation, and when it comes to treatment-resistant depression the rate is even higher: 1 in 2.

Building a Healthy Gut

The secret to building a healthy gut is to eat more foods that the good bacteria flourish on. Likewise, reduce the foods that cause the bad bacteria to grow: Sugar (including artificial sweeteners, they love that stuff!), fried or fast foods, and processed foods (that is, anything pre-made or packaged with chemical ingredients or preservatives). You can also take a probiotic, but those capsules aren't going to stick around long enough to do much good unless you've prepared a good environment for them to grow in. That's what the steps below are all about.

A Step-by-Step Guide to Microbiome Health

• Prebiotics Foods

Prebiotics are foods that give your healthy bacteria the nutrients they need to thrive. Use them as part of a healthy, Mediterranean style diet that is low in red meat, fast food, processed foods, sugary and fried foods.

Inulin and fructooligosaccharides

These prebiotics are found in bananas, asparagus, artichoke, onion, garlic, leeks, dandelion greens, chicory, blue agave, jicama root, yacon root, wheat bran

Polyphenols

Fruits and berries, vegetables, walnuts, tea, coffee, dark chocolate, turmeric

Polyunsaturated fatty acids

Oily fish, flaxseeds, walnuts, oils (canola, corn, soybean, safflower)

Other

Barley, oats, seaweed



2. Probiotic Foods

Next, add foods that with live probiotics to repopulate your gut. Ancient food preparation techniques like fermenting, pickling, and brining depend on probiotics, and you can find these items at most grocery stores today.

Dairy

Yogurt, kefir, cottage cheese (look for products with live cultures), aged cheeses (swiss, parmesan, provolone, cheddar, mozzarella, Gruyère, gouda, blue cheese)

Fermented foods

Pickles brined in salt water (not vinegar), olives, sauerkraut, tempeh, kimchi, miso, natto, poi

Drinks

Kefir, kombucha, non-alcoholic ginger beer, shrubs (vinegar drinks), Indian lassi, Russian beet kvass, apple cider vinegar

Other

Sourdough bread



3. Probiotic Capsules

This step is optional, but probiotic capsules can supplement a healthy diet and do have evidence on their own to improve depression, anxiety, and cognition. The products below were approved by ConsumerLabs or US Pharmacopeia and contain bacterial strains that were used in the psychiatric research.

Low cost (\$0.20/day)

Trunature Advanced Digestive Probiotic (Costco) Member's Mark 10 Strain Probiotic (Sam's Club)

Higher cost (\$0.6-1.2/day)

Bayer Phillip's colon health, Dr. Mercola complete probiotics, Garden of life raw probiotics ultimate care or once daily women's, GNC probiotic complex, Jamieson probiotic 5 billion, Nature's Way fortify everyday care 30 billion, PB8, Pure Encapsulations probiotic GI, Visbiome high potency, Hyperbiotics pro women

Read more in *The Psychobiotic Revolution* by Ted Dinan

4. Lifestyle

Along with diet, the three lifestyle factors below are the ones that have the biggest effect on microbiome health.

Exercise

Microbiome diversity improves with aerobic exercise, such as 30 minutes a day of anything fun that gets your heart rate up

Sleep

Insomnia, poor sleep quality, and jet-lag are associated with poor microbiome health

Stress Reduction

Both active and early-life stress impair microbiome health, and poor microbiome health worsens stress-related disorders

