



Diet and Depression: Exploring the Connection

By Lindsay Morris
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More than 8 percent of American adults age 20 and older have experienced depression in a given two-week period, according to [Centers for Disease Control data](#). Here are key ways in which diet can impact depression and overall mental health.

The Gut Is Connected to the Brain

Mounting research suggests that clinical depression may be affected by the bacteria in the gut. In a [2019 study](#) published in *Nature Microbiology*, researchers observed that gut bacteria produce neurotransmitters, such as dopamine and serotonin, that are connected to the brain via the vagus nerve, immune system, and other pathways, potentially influencing mood and behavior. They also noticed that depressed subjects tend to be lacking in two specific species of gut bacteria.

“We are only beginning to understand the impact that the microbiome has on cognition, emotions, and behavior,” says Richard Aiken, MD, author of *Neurodietetics: The Dietary Science of Human Flourishing*. “Diet is considered to be one of the most crucial factors impacting the human gut microbiota from infancy to old age. Dietary interventions may have the potential to modulate psychiatric symptoms.

Inflammation Has Been Linked to Depression

Inflammation is the body’s fight response to bacteria, viruses, and toxins. It’s closely linked to what we eat, and it’s also linked to depression. For example, a [study published in the Archives of General Psychiatry](#) tested levels of C-reactive protein (CRP), a marker of inflammation, in more than 70,000 Danish adults. Researchers found that the higher the blood levels of CRP, the more likely someone was to use

antidepressants or be hospitalized for depression.

“The evidence suggests that people who are depressed have raised inflammatory markers, such as C-reactive protein, and inflammatory illnesses are associated with greater rates of major depression,” says [Michael Greger, MD, FACLM](#), author of *How Not to Die*. “This is the case for a variety of inflammatory conditions, including relatively benign inflammatory conditions, such as asthma and allergies. And that’s important, suggesting the mood symptoms are not simply feeling bad about having a terrible disease—but may be directly tied to the inflammation.”

Food and Depression

The old adage “you are what you eat” is more true than we might think. The foods we consume fuel our bodies and brains, and they can either help or hinder us on our journey toward a healthy life. Let’s take a look at some of the biggest connections between diet and mental health.

• Saturated Fats and Trans Fats Spike Inflammation

“The most pro-inflammatory food components are saturated fat and trans fat,” Greger says. “Essentially, the top five sources of saturated fat in the United States are cheese, desserts like cake and ice cream, chicken, pork, and then burgers.” Thanks to the ban on artificial trans fats, the only remaining trans fats in the food supply are the small amounts found naturally in meat and dairy, and those created in the refining of vegetable oils, Greger adds.

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• Fatty Foods Reduce Blood Flow

If you've ever experienced a so-called food coma, you've felt the effects of reduced blood flow, says [Neal Barnard, MD, FACC](#), adjunct associate professor of medicine at the George Washington University School of Medicine and president of the Physicians Committee for Responsible Medicine. "Saturated fat increases the viscosity of your blood. That reduces the oxygenation of your tissues, reduces blood flow overall, and makes you just feel tired and rotten all the time," he explains.

• Fish Oil Isn't the Answer for Better Moods

You may have heard that the omega-3 fatty acids EPA and DHA may play a role in boosting your mood. But think twice before turning to [fish oil](#). Omega-3 supplements are not regulated by the FDA and may be contaminated with unacceptable levels of mercury, dioxin, and PCBs. In recent years, research suggests that neither EPA nor DHA is more effective than sugar pills as a remedy for depression, Greger says. "We used to think omega-3 supplements were useful, but several recent studies have tipped the balance the other way."

• Omega-6 Fatty Acids May Play a Role in Depression

Consuming high levels of inflammatory omega-6 fatty acids may play a role in depression, according to a [2005 study](#) published in the *Journal of Lipid Research*. Researchers found that rats exhibiting symptoms of depression had higher concentrations of arachidonic acid, a metabolite of the omega-6 fatty acids found primarily in vegetable oils, chicken, and eggs.

• Processed Foods Can Increase Depression

Processed foods aren't just bad for your waistline; research shows eating a diet low in whole foods is also bad for your mental health, according to a [University College London study](#) published in the *British Journal of Psychology*. Researchers split 3,500 participants—all middle-aged civil servants—into two diet groups: one that focused on whole foods including plenty of fruits and vegetables, and one that ate lots of processed foods such as sweetened desserts, fried foods, processed meats, refined grains, and high-fat dairy products. Within five years, participants in the processed-foods group had a 58 percent greater risk of depression than those who ate more whole foods.

A Plant-based Diet May Alleviate Depression and Anxiety

An [18-month study](#) published in the *American Journal of Health Promotion* tested the impact of a low-fat vegan diet on well-being and workplace productivity. Researchers with the Physicians Committee for Responsible Medicine placed 292 GEICO employees who were either overweight or had previously been diagnosed with type 2 diabetes into one of two groups: a control group and a vegan dietary intervention group. The vegan group experienced reduced feelings of depression, anxiety, and fatigue—and a boost in overall productivity and well-being.

Food Can Affect PMS

What women eat throughout the month may have an impact on PMS symptoms, according to research published in *Obstetrics & Gynecology*. Researchers followed 33 women over four menstrual cycles. For two cycles the participants ate a vegan diet; for two cycles they ate their customary diet and took a placebo pill.

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During the vegan phase, the majority of women experienced less discomfort, bloating, and behavioral change (including PMS-related mood shifts).

Overcoming Depression with the Help of a Plant-Based Diet: Real-Life Stories

- [How I Conquered Severe Depression With a Whole Food, Plant-Based Diet](#)
- [I Went Plant-Based and Left Life-Threatening Depression Behind](#)
- [At 45, I'm Healthier and Happier Than I Was in My 20s](#)
- [Type 2 Diabetes, Addiction, Depression, 130 Pounds—Gone in Three Years on a Plant-Based Diet!](#)

Ready to get started? Check out our [Plant-Based Primer](#) to learn more about adopting a whole-food, plant-based diet.