

Are Probiotics the New Prozac?



From the Desk of
Faith Pierce
Doctor of Naturopathy

While many think of their brain as the organ in charge of their mental health, your *gut* may actually play a far more significant role.

The big picture many of us understand is one of a microbial world that we just happen to be living in. Our actions interfere with these microbes, and they in turn respond having more effects to our individual health as well as the entire environment.

There is some truth to the old expression, having 'dirt for brains'. The microbes in our soil, on our plants, in our stomachs are all a result of our actions. Antibiotics, herbicides, vaccines, and pesticides, and the tens of thousands of synthetic chemicals we've created all have impacts and result in reactions from these microbes.

Mounting research indicates that problems in your gut can directly impact your mental health, leading to issues like anxiety and depression.

The gut-brain connection is well-recognized as a basic tenet of physiology and medicine, so this isn't all that surprising, even though it's often overlooked. There's also a wealth of evidence showing intestinal involvement in a variety of neurological diseases.

With this in mind, it should also be crystal clear that nourishing your gut flora is extremely important, because in a very real sense you have *two brains*, one inside your skull and one in your gut, and each needs its own vital nourishment. A recent article¹ titled "Are Probiotics the New Prozac?" reviews some of the most recent supporting evidence.

Probiotics Alter Brain Function, Study Finds

The featured proof-of-concept study, conducted by researchers at UCLA, found that probiotics (beneficial bacteria) actually altered participants' brain function. The study² enlisted 36 women between the ages of 18 and 55 who were divided into three groups:

- The treatment group ate yogurt containing several probiotics thought to have a beneficial impact on intestinal health, twice a day for one month
- Another group ate a "sham" product that looked and tasted like the yogurt but contained no probiotics
- Control group ate no product at all

Before and after the four-week study, participants underwent functional magnetic resonance imaging (fMRI) scans, both while in a state of rest, and in response to an "emotion-recognition task."

For the latter, the women were shown a series of pictures of people with angry or frightened faces, which they had to match to other faces showing the same emotions.

"This task, designed to measure the engagement of affective and cognitive brain regions in response to a visual stimulus, was chosen because previous research in animals had linked changes in gut flora to changes in affective behaviors," the researchers explained.

Compared to the controls, the women who consumed probiotic yogurt had decreased activity in two brain regions that control central processing of emotion and sensation:

- The insular cortex (insula), which plays a role in functions typically linked to emotion (including perception, motor control, self-awareness, cognitive functioning, and interpersonal experience) and the regulation of your body's homeostasis, and
- The somatosensory cortex, which plays a role in your body's ability to interpret a wide variety of sensations

During the resting brain scan, the treatment group also showed greater connectivity between a region known as the 'periaqueductal grey' and areas of the prefrontal cortex associated with cognition. In contrast, the control group showed greater connectivity of the periaqueductal grey to emotion- and sensation-related regions.

The fact that this study showed any improvement at all is remarkable, considering they used commercial yogurt preparations that are notoriously unhealthy; loaded with artificial sweeteners, colors, flavorings, and sugar. Most importantly, the vast majority of commercial yogurts have clinically insignificant levels of beneficial bacteria. Clearly, you would be far better off making your own yogurt from raw milk—especially if you're seeking to address depression through dietary interventions.

Yes, Your Diet Affects Your Mood and Mental Health

According to lead author Dr. Kirsten Tillisch:³

"Time and time again, we hear from patients that they never felt depressed or anxious until they started experiencing problems with their gut. Our study shows that the gut-brain connection is a two-way street... 'When we consider the implications of this work, the old sayings 'you are what you eat' and 'gut feelings' take on new meaning.'"

The implications are particularly significant in our current era of rampant depression and emotional "malaise." And as stated in the featured article, the drug treatments available today are no better than they were 50 years ago. Clearly, we need a new approach, and diet is an obvious place to start. Previous studies have confirmed that what you eat can alter the composition of your gut flora. Specifically, eating a high-vegetable, fiber-based diet produces a profoundly different composition of microbiota than a more typical Western diet high in carbs and processed fats.

The featured research tells us that the composition of your gut flora not only affects your physical health, but also has a significant impact on your brain function and mental state. Previous research has also shown that certain probiotics can help alleviate anxiety:

- *The Journal of Neurogastroenterology and Motility*⁵ reported the probiotic known as *Bifidobacterium longum* NCC3001 normalized anxiety-like behavior in mice with infectious colitis by modulating the vagal pathways within the gut-brain.
- Other research⁶ found that the probiotic *Lactobacillus rhamnosus* had a marked effect on GABA levels—an inhibitory neurotransmitter that is significantly involved in regulating many physiological and psychological processes—in certain brain regions and lowered the stress-induced hormone corticosterone, resulting in reduced anxiety- and depression-related behavior. It is likely other lactobacillus species also provide this benefit, but this was the only

It's important to realize that you have neurons both in your brain *and* your gut -- including neurons that produce neurotransmitters like serotonin. In fact, the greatest concentration of serotonin, which is involved in mood control, depression and aggression, is found in your *intestines*, not your brain! Perhaps this is one reason why antidepressants, which raise serotonin levels in your *brain*, are often ineffective in treating depression, whereas proper dietary changes often help...

Your Gut Bacteria Are Vulnerable to Your Diet and Lifestyle

Processed, refined foods in general will destroy healthy microflora and feed bad bacteria and yeast, so limiting or eliminating these from your diet should be at the top of your list. Following my recently revised nutrition plan is a simple way to automatically reduce your intake of sugar from all sources. Processed foods wreak havoc on your gut in a number of different ways:

- First, they are typically loaded with **sugar**, and avoiding sugar (particularly fructose) is in my view, based on the evidence, a critical aspect of preventing and/or treating depression. Not only will sugar compromise your beneficial gut bacteria by providing the preferred fuel for pathogenic bacteria, it also contributes to chronic inflammation throughout your body, including your brain.
- Many contain **artificial sweeteners** and other synthetic additives that can wreak havoc with brain health. In fact, depression and panic attacks are two of the reported side effects of aspartame. Preliminary findings presented at the 65th annual meeting of the American Academy of Neurology also report that drinking sweetened beverages—whether they're sweetened with sugar or artificial sweeteners—is associated with an increased risk of depression.
- Processed foods are also typically loaded with **refined grains**, which turn into sugar in your body. Wheat in particular has also been implicated in psychiatric problems, from depression to schizophrenia, due to Wheat Germ Agglutinin (WGA), which has neurotoxic activity.
- The majority of processed foods also contain **genetically engineered (GE) ingredients** (primarily corn and soy), which have been shown to be particularly detrimental to beneficial bacteria.

There are several mechanisms of harm at work here. For example:

- Eating genetically engineered Bt corn may turn your intestinal flora into a sort of "living pesticide factory," essentially manufacturing Bt-toxin *from within* your digestive system on a continuing basis
- Beneficial gut bacteria are very sensitive to residual glyphosate (the active ingredient in Roundup). Due to mounting resistance, GE Roundup Ready crops are being drenched with increasing amounts of this toxic herbicide. Studies have already confirmed that glyphosate alters and destroys beneficial gut flora in animals, as evidenced by the increasing instances of [lethal botulism](#) in cattle
- Recent research also reveals that your gut bacteria are a *key component* of [glyphosate's mechanism of harm](#), as your gut microbes have the identical pathway used by glyphosate to kill weeds!

Your gut bacteria are also very sensitive to and can be harmed by:

Antibiotics, unless absolutely necessary (and when you do, make sure to reseed your gut with fermented foods and/or a probiotics supplement)	Conventionally-raised meats and other animal products, as CAFO animals are routinely fed low-dose antibiotics, plus genetically engineered grains , which have also been implicated in the destruction of gut flora
Chlorinated and/or fluoridated water	Antibacterial soap

How to Reseed Your Gut Flora

Considering the fact that an estimated 80 percent of your immune system is located in your gut, reseed your gut with healthy bacteria is important for the prevention of virtually ALL disease, both physical and mental. The first step is to clean up your diet and lifestyle by avoiding the items listed above. Then, to actively reseed your gut with beneficial bacteria, you'll want to:

- **Radically reduce your sugar intake.** I'm being repetitive here, to drive home the point that you can take the best fermented foods and/or probiotic supplements, but if you fail to reduce your sugar intake you will sabotage your efforts to rebuild your gut flora. This would be similar to driving your car with one foot on the accelerator and one on the brake simultaneously. Simply not a good strategy at all. When you consume sugar at the level of the typical American you are virtually guaranteed to have a preponderance of pathogenic bacteria, yeast and fungi, no matter what supplements you are taking.
- **Eat traditionally fermented, unpasteurized foods:** Fermented foods are the best route to optimal digestive health, as long as you eat the traditionally made, unpasteurized versions. Some of the beneficial bacteria found in fermented foods are also excellent chelators of heavy metals and pesticides, which will also have a beneficial health effect by reducing your toxic load. Healthy choices include:
 - Fermented vegetables
 - Lassi (an Indian yoghurt drink, traditionally enjoyed before dinner)
 - Fermented milk, such as kefir

Ideally, you want to eat a variety of fermented foods to maximize the variety of bacteria you're consuming. Fermented vegetables, which are one of my new passions, are an excellent way to supply beneficial bacteria back into our gut. And, unlike some other fermented foods, they tend to be palatable, if not downright delicious, to most people.

As an added bonus, they can also be a great source of vitamin K2 *if* you ferment your own using the proper starter culture. We tested samples of high-quality fermented organic vegetables made with our specific starter culture, and a typical serving (about two to three ounces) contained not only *10 trillion* beneficial bacteria, it also had 500 mcg of vitamin K2, which we now know is a vital co-nutrient to both vitamin D and calcium. Most high-quality probiotics supplements will only supply you with a fraction of the beneficial bacteria found in such homemade fermented veggies, so it's your most economical route to optimal gut health as well.

- **Take a high-quality probiotic supplement.** Although I'm not a major proponent of taking many supplements (as I believe the majority of your nutrients need to come from food), probiotics are an exception if you don't eat fermented foods on a regular basis.

Nurture Your Gut for Optimal Health and Mental Well-Being

Foods have an immense impact on your body and your brain, and eating whole foods as described in my nutrition plan is the best way to support your mental and physical health.

Mounting research indicates the bacterial colonies residing in your gut may in fact play *key roles* in the development of brain, behavioral and emotional problems—from depression to ADHD, autism and more serious mental illness like schizophrenia. Certainly, when you consider the fact that the gut-brain connection is recognized as a basic tenet of physiology and medicine, and that there's no shortage of evidence of gastrointestinal involvement in a variety of neurological diseases, it's easy to see how the balance of gut bacteria can play a significant role in your psychology and behavior.

With this in mind, it should also be crystal clear that nourishing your gut flora is extremely important, from cradle to grave, because in a very real sense you have *two brains*, one inside your skull and one in your gut, and each needs its own vital nourishment.

Cultured foods like raw milk yogurt and kefir, some cheeses, and fermented vegetables are good sources of natural, healthy bacteria. So my strong recommendation would be to make cultured or fermented foods a regular part of your diet; this can be your primary strategy to optimize your body's good bacteria. If you do not eat fermented foods on a regular basis, taking a high-quality probiotic supplement is definitely recommended. A probiotic supplement can be incredibly useful to help maintain a well-functioning digestive system when you stray from your healthy diet and consume excess grains or sugar, or if you have to take antibiotics.



2001 W. Kenosha * Broken Arrow, OK , 74012 * betterhealthstore.org *

For mail order of supplements and vitamins call:

1-866-929-HERB