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Creating Health

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PERSONAL TRAINING & FITNESS SOLUTIONS

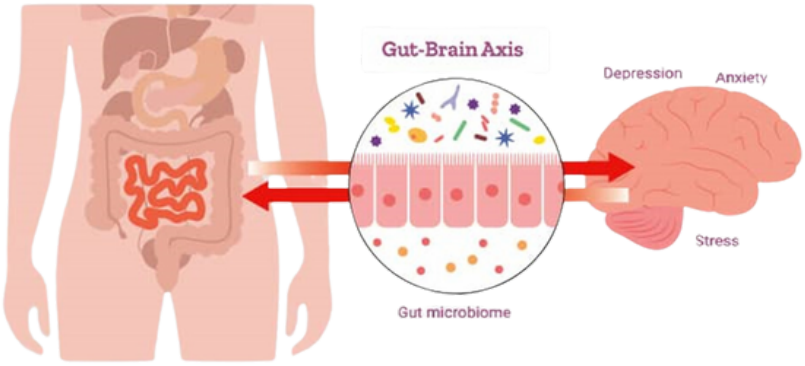
HEALTH TOPIC OF THE WEEK

12/11 - Depression and Anxiety

Introduction

Depression affects more than 21 million adults in the United States. Rates of anxiety and depression skyrocketed during the pandemic. Medication and counseling can help, but two thirds of those taking antidepressants experience side effects, including sexual dysfunction, fatigue, weight gain, and insomnia.

Only a small percentage of people taking anti-depressants get a clinically significant response. Because of this, many stop taking them. Roughly 60% of those affected by mood disorders are not receiving treatment. This article explores the role probiotics play in reducing depression and anxiety.



The Gut-Brain Axis

In multiple clinical trials, probiotics have been shown to provide some relief for symptoms of depression, and to a lesser extent, symptoms of anxiety. The reason is the gut-brain axis.

Though we think of neurons primarily as brain cells, a network of 200-600 million neurons lines the gastrointestinal tract. The gut-brain axis is a two-way communication system between the digestive system and the brain.

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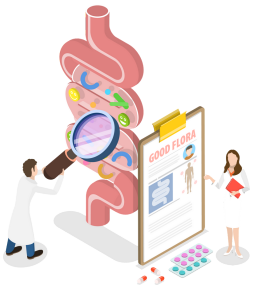
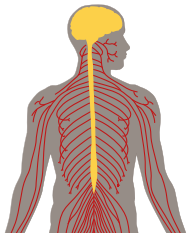
The gut microbiota is the name for the trillions of bacteria and other microorganisms that live in our digestive tract. The greatest amounts are in the large intestine. Some of these bacteria produce substances that contribute to immune response. They also alter the synthesis and degradation of neurotransmitters that neurons in the gut use to transmit signals to regions of the brain responsible for mood regulation and learning.



Stress and depression alter gut bacteria and promote secretion of pro-inflammatory cytokines and neurotransmitters. These signaling molecules can promote inflammation in the brain, which worsens symptoms of mood disorders and cognition. Some species may even encourage dysregulated eating.

Probiotics Improve Mental Health

Probiotics are beneficial bacteria that support immune, digestive, and oral health. They also play a vital role in psychological wellbeing.

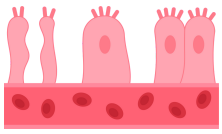


The gut contains trillions of bacteria with the neural system of the intestine composed of 200-600 million neurons, cells that receive, process, and transmit information.

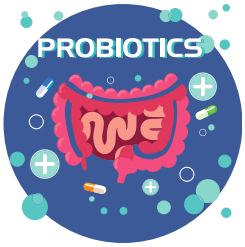
The gut communicates with the brain through these neurons and the vagus nerve. Gut microorganisms can produce/modulate many kinds of neurotransmitters, chemicals that send signals from one neuron to another. They include dopamine, serotonin, and norepinephrine, which are important to regulating mood

- Probiotics have been shown, in a study with healthy individuals, to reduce self-rated scores for depression, anxiety, and stress. Another study showed that treatment with Lactobacillus species resulted in lower levels of cortisol, an important stress hormone.

- Preclinical evidence has shown that certain intestinal bacteria increase brain levels of BDNF (brain-derived neurotrophic factor), a growth factor known to promote neuron development, survival, and function, and support synapse health.



- Stress is one of the factors that plays an integral role in intestinal barrier function, causing “leaky gut.” Leaky gut allows pro-inflammatory molecules to enter the blood, causing dysregulation of the immune system. Chronic stress can also change the composition of the microbiome and impact its barrier function. That, in turn, can negatively affect mood.



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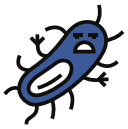
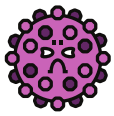
Specific Probiotic Strains

Two strains of probiotic bacteria, Lactobacillus helveticus R0052 and Bifidobacterium longum R0175, have been shown in animal models to play a role in beneficially modulating the gut-brain axis by:



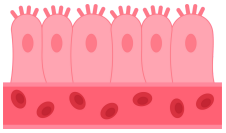
- Maintaining a balance of the microbiome by competitive exclusion of bad gut bacteria - such as clostridium. Clostridium bacteria, for example, are known to produce propionic acid that has been associated in animal studies with anxiety and aggression.

- Increasing levels of doublecortin (a protein that helps movement and differentiation of neurons) in the hippocampus (the brain's memory-processing region). Doublecortin is also a marker for new brain-cell formation in an experimental model of chronic stress. This increase may indicate that the brain is regenerating healthy tissue that can lead to future resilience against stress.



- Supporting the hypothalamic-pituitary-adrenal axis balance.

- Reducing levels of pro-inflammatory cytokines and improving production of anti-inflammatory cytokines.



- Tightening the "leaky gut" induced by stress.

Success in Human Trials

Human trials of these probiotics have shown impressive results in reducing symptoms of depression and anxiety.

In one clinical trial, healthy participants took either three billion CFUs (colony forming units) of combined Lactobacillus helveticus R0052 and Bifidobacterium longum R0175 or a placebo daily.

After one month, compared to placebo, those who took the probiotics had a:

- 50% improvement in depression scores,

- 49% improvement in global severity index, a measure of overall psychological distress,

- 60% improvement in anger-hostility scores.

- 13% reduction in free urinary cortisol, a measure of chronic stress.

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A follow-up analysis of this study found that the probiotic formula also worked well in improving self-rated anxiety and depression scores in patients who began the study with low stress levels as measured by urinary cortisol. As is the case with most probiotics, these were well tolerated with few, if any, side effects.

Anxiety and stress are associated with intestinal disturbances.
In another trial, participants aged 18-60, with at least two self-reported symptoms of stress, were given either a placebo or the probiotic combination at the same dosage as in the other studies.

After three weeks the probiotic-treated subjects experienced a complete elimination of stress-induced nausea and vomiting and compared to the placebo group, approximately 8.6 times the reduction in stress-induced abdominal pain, and nearly double the reduction in flatulence and gas.

Once again, the probiotics were found to be safe and did not cause unpleasant side effects.

Saffron Enhances Mood

Saffron has been used in Persian and Chinese medicine for centuries to treat depression.

Preclinical research suggests it may help relieve depression and anxiety because of its potential influence on three neurotransmitter-signaling pathways involved in mood regulation in the brain:

- Dopamine, which contributes to feelings of pleasure, learning, and motivation.
- Serotonin, responsible for a behavior pattern, mood, sleep pattern, anxiety, feelings of comfort, and well-being,
- Norepinephrine, responsible for alertness, arousal, decision-making, focus, and attention.

Effective in Clinical Trials

In a series of human studies, researchers tested 30 mg of saffron head-to-head against common antidepressant drugs, including:

- Imipramine (Tofranil®)
- Fluoxetine (Prozac®)
- Citalopram (Celexa®)

In each case, saffron was found to be as effective as the drug in treating depression.

Combining the probiotics Lactobacillus helveticus R0052 and Bifidobacterium longum R0175 with an extract of saffron offers a multipronged attack on anxiety and depression and a way to boost mood without side effects.

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Summary

Gut health is vital to so many physical and mental functions in our body. A significant portion of our mood and memory is regulated by the gut microbiota. Therefore, interventions for mental health should include managing and improving gut health.

The probiotics Lactobacillus helveticus R0052 and Bifidobacterium longum R0175 work through the gut-brain axis to reduce feelings of depression and anxiety.

Saffron extract interacts with neurotransmitters to improve mood and has been shown to work as well as prescription drugs to treat depression.

A combination of these ingredients is not associated with significant side effects and could help people struggling with anxiety and depression.

At EPT, we are always looking for natural ways to help improve your health. Gut health is complex – reach out to us for individualized nutritional and supplement consultations.

This article was contributed by David Trumbore PT, DPT, CSCI, CWT, CPI, CFNP,
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For his bio, please see https://www.eliteptf.com/david-trumbore

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