

10 Reasons You Should Eat More 'Fermented' Foods

Our bodies house ten times more bacteria than cells, and there are more than 100 trillion bacteria on and within the body. Only ten percent of our cells are human. The remaining 90 percent of the cells living within the body are bacterial.

For some of us, that is almost too uncomfortable to think about, but what we should really start to realize is the important role that bacteria play in our overall well-being: This includes the bacteria in the gut.

1. Bacteria in the human body. The 100 trillion bacteria residing on and in our bodies are responsible for things like making the immune system stronger, synthesizing vitamins, and digesting the food we eat. Just as light needs dark to exist, we need bacteria if we are going to continue to exist. The microbiome, which is all of the bacterial cells inside the body, is one of the biggest factors playing a role in our health. Gut bacteria is part of the reason our bodies are capable of assimilating and digesting food. Now, scientists are finding that some bacteria may influence behaviors, thoughts, moods, and personality.

2. Birth and bacterial exposure. When a child is born it is the moment the child begins receiving exposure to the bacteria the body requires. The baby's first exposure to bacteria comes from vaginal delivery and the second comes from when the mother breastfeeds the child. While in the uterus, a baby remains within a sterile environment. However, passage through the birth canal causes bacteria from the mother to pass to the child's skin, eyes, and mouth: This bacteria then colonizes on and within the child. If the mother breastfeeds the child, it exposes the baby to bacteria that passes from the mother to child through the breast milk and skin-to-skin contact.

Researchers have found children who come into the world through C-section do not end up with a healthy mix of the bacteria needed for optimal well-being. In various hospitals there are ongoing experiments where health care professionals place gauze inside the birth mother's vagina for about an hour before the child is delivered through Cesarean birth. Once the baby is taken from the mother's womb, a health care professional takes the bacteria soaked gauze and rubs it onto the child's skin, face, and eyes in an effort to mimic the effects of a vaginal birth where bacterial exposure occurs. Of course, if such actions will prove beneficial remains unknown. It will take a number of years to assess if there are beneficial health effects from the bacterial exposure in the children involved in the experiment.

3. Vitamins & gut bacteria. Even harmful bacteria has different strains of which some prove harmless and beneficial to the body. For instance, *Escherichia coli* (E coli) has more than a single strain, and some strains of E. coli and another bacteria called *Bacillus subtilis* are responsible for synthesizing Vitamin K. Researchers have discovered that bacteria synthesizes a variety of intestinal bacteria. In addition to Vitamin K, the healthy bacteria synthesizes an array of B vitamins. Now recall for a moment how babies first come into the world and are not exposed to bacteria until passing through the vaginal canal, and then you can understand why doctors feel the need to give babies a shot of Vitamin K at birth: when born, the child lacks the bacteria in the gut to trigger its synthesis. A lack of certain bacteria in the gut may be responsible for the onset of at least some vitamin deficiencies as well.

4. The autism & gut bacteria connection. A study is currently ongoing at Arizona State University where researchers are looking into a possible connection between gut bacteria and Autism. Researchers have already found that individuals who have been diagnosed with the condition also have gut bacteria

that differs from the bacteria of an otherwise healthy individual. In fact, the bacteria is in differing ratios, as those who have Autism tend to be lacking hundreds of bacterial strains considered beneficial to the body.

It is too soon to suggest that the absence of different bacterial strains is responsible for the neurological dissimilarities between neurotypical people and those people who are on the Autism Spectrum. Nevertheless, there are experiments occurring involving the beneficial transfer of bacteria through fecal transplants. The transplantation is done in an effort to bring balance back to the bacteria in the guts of Autistic individuals who have gastrointestinal difficulties.

There is some promising evidence of a link between gut bacteria and Autism, since scientists have been able to produce autistic like behaviors in mice simply by changing the balance of the bacteria in their gut. Once the microbiome was rebalanced in the same mice, the autistic-like behaviors disappeared and the mice regained behaviors considered neurotypical. Additional experiments were conducted with a pregnant mouse where the mother's microbiome was altered; the newborn mice demonstrated autistic like behaviors following the changes to the mother's microbiome.

5. Gut bacteria and its influence on immunological functioning. Researchers experimenting on mice have revealed the role gut bacteria plays on the functioning of the immune system. Studies have indicated that when mice did not have well-developed bacteria in the gut, they were prone to illness and more likely to get seriously ill when compared to mice that had a healthy balance of gut bacteria. Likewise, in societies that heavily rely on products containing anti-bacterial ingredients, people are prone to illness more often and with greater severity than individuals living in societies that do not rely on antibacterial containing products.

The immune system is both adaptive and dependent on certain microbes responsible for releasing Immunoglobulin A (IGA). IGA tags or marks harmful bacteria and viruses and the immune system defends the body by destroying the marked microbes. Researchers surmise the immune system exists for the sole purpose of protecting the microbes in the gut.

6. The link between an absence of gut bacteria and autoimmune disease. When the immune system suddenly turns on the body and healthy tissue the condition is called an autoimmune disease. For reasons unknown, something triggers T-cells to start attacking healthy cells. The attack leads to inflammation in the body. The attacked tissues no longer work the way they should. Multiple Sclerosis (MS) is one such autoimmune disease where the immune system attacks the neurological system. Some researchers are suggesting that the reason for such autoimmune diseases could be due to the near or complete absence of *Bacteris fragellus* in the gut. *Bacteris fragellus* is found in minimal amounts or not at all in people suffering from autoimmune disease. The bacteria is responsible for the creation of polysaccharide A (PSA): a chemical that improves immune system functioning when it interacts with T-cells and triggers an anti-inflammatory response in the body. Tests in the lab reveal PSA not only treats and prevents MS and Inflammatory Bowel Disease. Within two to three years, *Bacteris fragellus* should go into clinical trials.

7. What is leaky gut syndrome? If the walls of the intestines weaken and the lining allows for the leakage of gut bacteria through its walls, thereby allowing molecules to reach other parts of the body, the condition is known as Leaky Gut Syndrome. Researchers have discovered that when minuscule particles of waste, food, and bacteria leak through the intestines and enter into the body, a whole host of symptoms can occur. Leaky Gut Syndrome produces issues with allergies, brain fog, pain, inflammation, and headaches. Thankfully, it is possible to restore the balance of gut bacteria so that the

leaky gut and intestinal walls heal.

8. How bacteria in your gut affects the human brain. The bacteria in your gut play a role in how your brain works. The physical body connects the body, the immune system, and the mind through multiple body functions and systems including neural pathways, hormones, the endocrine system, and gut microbes. Neurons travel from the human brain and send out electrical messages to the entire body; as much as 70 percent of all neurons that travel from the brain are actually in the gut. The Vagus Nerve gives the bacteria in your gut access to the brain. What's more, the same bacteria are capable of creating neurotransmitters that travel as messages to the brain.

The bottom line: gut bacteria has an influence on your brain. As an example, *Mycobacterium vaccea*, a bacteria found in abundance in soil, can reduce stress, depression, and anxiety in mice. In contrast, lab tests where mice were given antibiotics to minimize the amount of gut bacteria were seen to become aggressive. Once the gut bacteria were rebalanced, the mice were no longer aggressive. Research has revealed that people who consume bifidobacterium and lactobacillus, two probiotics, have experienced reduced anxiety and stress as a result.

9. Gut bacterial and your body weight. While obesity has reached epidemic proportions in America, only part of the problem may be due to lack of exercise and poor eating habits. The other part of the problem may actually have to do with an imbalance in gut bacteria. Researchers have found that in thin animals and people, the microbiome is completely different than the microbiome in obese animals and people. Experiments involving mice with microbes associated with being overweight eat more frequently and more with every feeding than thinner mice. Such studies suggest an imbalance of gut bacteria may contribute to or worsen Metabolic Syndrome: A disorder featuring conditions like Pre-Diabetes, Type 2 Diabetes,

hypertension, and increased belly fat. Appetite-controlling hormones are produced in your brain. The production of corticosteroids can alter the balance of microbes in the gut, while the existing microbes in the gut can play a role in the production of corticosteroids.

10. The microbiome and food intake. The bacteria in the gut play an important role in your general well-being. An imbalance in gut bacteria can contribute to weight gain, excessive hunger, changes in your mood, and can increase, not just the likelihood, but the severity of illness. Some foods actually contribute to the overgrowth of bacteria that's harmful to the body. Sugar is a substance that feeds yeast microbes that can cause an excess of yeast growth. In contrast, consuming fiber derived from some grains, vegetables, and some fats feed good bacteria while starving off the undesirable bacteria in the gut.

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