

Beneficial Bacteria

Boosting Your Health with a Better Microbiome



Bacteria don't have a very good reputation and with good reason. Just a little over 100 years ago, the leading cause of death was infectious disease and many of these diseases were caused by bacteria. The discovery of infectious microbes, like bacteria, resulted in improvements in sanitation and food handling that have saved millions of lives.

Of course, bacterial infections are still around. (See *Bacterial Bad Guys* on page 2.) However, with the development of various antiseptics, disinfectants and antibiotics relatively few people in Western countries die from infection.

Unfortunately, because of bacteria's association with disease, it's all too easy to become obsessed with killing germs. This obsession is actually leading to health problems caused by a lack of bacteria. It turns out that some species of bacteria are beneficial to health and that over sterilizing your environment makes you more likely to develop allergic reactions, asthma and autoimmune disorders.

This has also led to unwittingly breeding stronger strains of bacteria that are becoming resistant to antibiotics and disinfectants. So, it's time to take a new look at bacteria and health.

Intestinal Dysbiosis and the Microbiome

At this very moment there are several pounds of bacteria living inside of you, along with various species of yeasts, fungi and maybe even a few parasites. Don't be alarmed, this isn't a bad thing at all. In fact, you need them to be healthy.

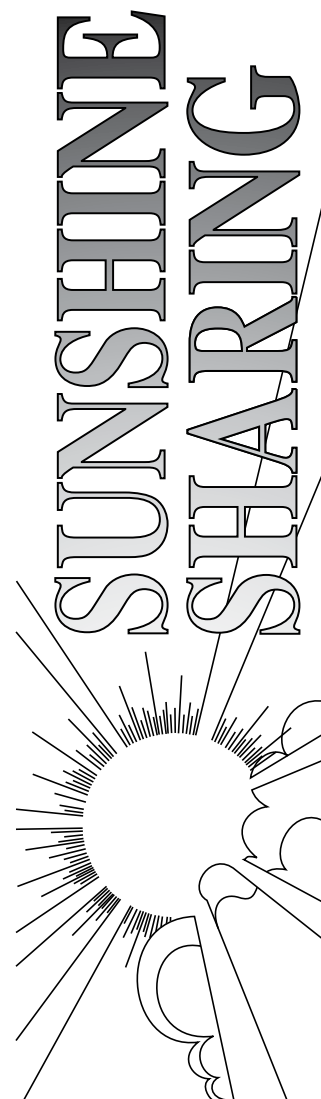
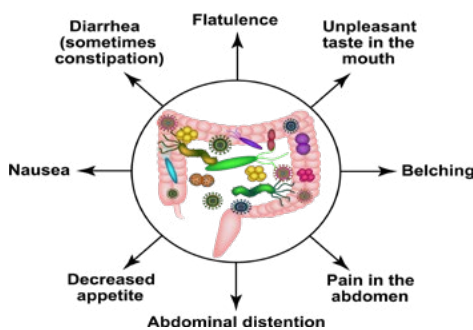
These organisms are known collectively as the intestinal microbiome and people with strong immune systems tend to have a more diverse microbiome. Research is suggesting that healthy people have more species of microbes in their gut than unhealthy people.

In fact, when the microbes in your gut are out of balance, a problem known as dysbiosis, you'll experience a lot of digestive discomfort. Symptoms like gas, bloating, nausea, belching, irritable bowel syndrome, diarrhea or constipation may all be due to intestinal dysbiosis.

But the effects of dysbiosis go beyond these digestive symptoms. Your immune system will be weaker when you have dysbiosis. It's easier to catch colds and flu and you may even experience chronic infections like sinusitis. It's also harder to lose weight with intestinal dysbiosis.

There is a link between the gut and the brain, so intestinal dysbiosis can also affect your mental focus and mood. The wrong bacteria in your gut can contribute to conditions like brain fog, depression and anxiety, and they may also be involved in more serious problems such as mental illness, autism and Parkinson's.

So, if you want to be healthy, you need to avoid the bad bacteria, but you also need to cultivate the good bacteria, which is what this issue of *Sunshine Sharing* is all about.



Your guide to better health the natural way.

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Probiotics, Antibiotics and Dysbiosis

The bacterial good guys have been called friendly flora or probiotics. The term probiotic comes from the roots, *pro*, meaning *for*, and *biotic*, meaning *life*. Probiotic literally means *for life*.

In contrast, antibiotic comes from the roots, *anti*, meaning *against* and *biotic*, or *life*, which means antibiotics are *against life*. There's no question that antibiotics have saved many lives, but broad spectrum antibiotics have been over-prescribed and overused. This has resulted in a lack of diversity in the microbiome and an increase in people suffering from dysbiosis.

And it isn't just antibiotics. Other factors that have contributed to intestinal dysbiosis include the use of NSAIDs, birth control pills, chemotherapy and other drugs. The chlorine in drinking water also kills friendly flora.

In order to restore a healthy microbiome you need to do three things. First, you need to knock down populations of unfriendly microbes in the gut, which include bacteria like *E. coli* and *H. pylori*, and yeasts like *Candida albicans*.

Then you need to alter your diet to make your intestines less friendly to the bad guys and more friendly to the good guys. You need to feed the good bacteria with prebiotics and starve the bad bacteria by limiting FODMAPs (Fermentable Oligosaccharides, Disaccharides, Monosaccharide and Polyols).

Finally, you need to eat probiotic rich foods and/or take probiotic supplements to build a healthier microbiome. The more diverse you make your microbiome, the healthier you will be.

Knocking Down the Bad Guys

If you have symptoms of dysbiosis, supplementing with **berberine** may be helpful. Berberine is an alkaloid found in herbs like barberry, goldenseal and Oregon grape, which have been traditionally used for fighting infection. It is helpful for correcting intestinal dysbiosis, reducing both bacterial and fungal overgrowth. It also helps reduce sugar cravings.

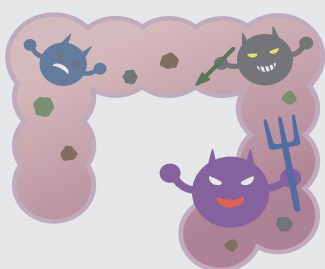
Pau d'arco bark is used for yeast overgrowth, but it has some antibacterial properties as well. It works very well as a tea, so try drinking about one quart of the tea daily. You can also take about 8-9 capsules per day with plenty of water.

A **Fungal Cleanse Program** is a good way to help rebalance the gut microflora. It contains pau d'arco along with oregano (a great herb for both bacterial and fungal overgrowth), caprylic acid (which helps control yeast), and black walnut (which helps with parasites). Although it was created to combat yeast overgrowth, it also helps knock down unfriendly bacteria, too.

A great feature of this cleanse is the enzyme packet it contains which is taken between meals. Bacteria and yeast colonize the digestive tract in a thin film known as a biofilm. (Dental plaque is an example of a biofilm.) This protects them from antibacterial or antifungal substances. The enzymes digest or break down the biofilm, exposing them so they can be destroyed.

Another great antimicrobial for the gut is cinnamon. A **Cinnamon Blood Sugar Formula** containing cinnamon, nopal,

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Bacterial Bad Guys

Although deaths from bacterial infection have declined dramatically over the past 100 years, there are still plenty of bacteria to be concerned about.

Salmonella is a genus of bacteria that causes food poisoning. Millions of people are affected by food poisoning each year, with young children being particularly susceptible. *Shigella* is a genus of bacteria that are closely related to *Salmonella*. They are the leading cause of diarrhea worldwide and cause millions of deaths every year.

Clostridium botulinum is the bacteria that causes botulism, another food-borne illness. It produces a toxin that blocks nerve function and causes muscle paralysis. Interestingly, this toxin is used commercially for cosmetic purposes under the name Botox.

Paying attention to food sanitation is the best way to avoid food poisoning and food-borne illness. Also, smell your food when eating and don't eat anything that smells "off" in any way.

Staphylococcus aureus, commonly known as staph, is a common cause of respiratory infections, skin infections and food

poisoning. There are harmful varieties and friendly varieties of these bacteria, but the evolution of an antibiotic resistant strain, methicillin-resistant *Staphylococcus aureus* or MRSA, is causing serious infections in hospitals from time to time.

Other strains of bacteria that cause infections you don't hear much about anymore, but are still around, include *Vibrio cholera* (cholera), *Yersinia pestis* (bubonic plague), *Mycobacterium leprae* (leprosy) and *Bacillus anthracis* (anthrax). These infections are best treated medically, but there are natural remedies that can help.

Patented Colloidal Silver preparations are effective at killing staph, including MRSA, and all other pathogenic bacteria. The silver must come in direct contact with the pathogen to be effective, so apply topically where possible. When dealing with a serious *internal* infection you should take high doses of the silver, 4-8 ounces per day.

Disinfectant essential oils such as thyme, cinnamon, eucalyptus, rosemary, lemon and tea tree oil may also be helpful when applied topically or diffused. Look for a good **Disinfectant Essential Oil Blend** that has these oils.

Bacteria like *H. pylori* (involved in forming ulcers) and *E. coli* can actually be part of a healthy microbiome, but cause problems when the biome is out of balance. The best way to keep them in check is to follow the suggestions in this newsletter for correcting dysbiosis.



Bacterial Good Guys

Let's discuss some of the major species of good bacteria that are beneficial to your health, starting with those in the *Lactobacillus* genus. These bacteria get their name from the Latin word *lacto*, which

means milk. These acid-loving bacteria are commonly found in fermented dairy products or other fermented foods. *Lactobacillus* produce lactic acid, a substance that gives these fermented foods their sour taste and inhibits the growth of harmful bacteria.

They also help digest lactose, a sugar found in milk that can cause gas and intestinal distress in people who don't produce the enzyme lactase. People who don't produce lactase will get gas and bloating when they eat unfermented dairy products, a condition known as lactose intolerance.

L. acidophilus is commonly known as simply acidophilus. It is one of the most well-known strains of friendly bacteria. It produces both hydrogen peroxide and lactic acid to inhibit the growth of harmful microbes.

Acidophilus is present in the mouth and the vagina, as well as the bowel, where it reduces the proliferation of yeasts like *Candida albicans*. By knocking down acidophilus bacteria, antibiotics may contribute to thrush (a yeast infection in the mouth or throat) or vaginal yeast infections, as well as yeast overgrowth in the intestines.

L. brevis is a species of *Lactobacillus* that is found in fermented dairy foods like kefir and cheese. It is also present in raw sauerkraut. It produces lactic acid and other antibacterial agents that inhibit unfriendly microbes. It also aids with the synthesis of vitamins D and K.

L. bulgaricus is used along with another bacteria, *Streptococcus thermophilus*, to create yogurt and cheese. It is a transient bacteria, which means it doesn't colonize the intestinal walls. Transient species can still be important by helping to maintain a healthy balance of intestinal microbes. *Bulgaricus* produces lactic acid and helps digest lactase to ease lactose intolerance.

L. plantarum is another transient bacteria found in dairy products, sauerkraut, raw dill pickles and kimchi. It has been used to treat gut disorders and reduces the growth of bacteria in the intestines that cause gas and bloating. In a study giving this probiotic to children with Autistic Syndrome Disorder, many positive results were noted.

Supplementing with *Plantarum* was found to stimulate nerve growth in the area of the brain responsible for memory and emotions. It may be helpful in reducing depression.

L. salivarius is also helpful in maintaining a healthy intestinal microflora. It may inhibit the growth of *H. pylori*, the bacteria associated with developing ulcers.

L. reuteri produces a substance known as reuterin, which inhibits the growth of both Gram-positive and Gram-negative bacteria. It helps prevent the growth of yeasts, fungi, protozoa and *H. pylori*. It also helps with *E. coli* infections.

Research suggests that *L. reuteri* may play a role in mental health. Researchers who gave autistic mice *L. reuteri* found that it normalized some of their behaviors. It appears to increase production of oxytocin. Oxytocin has been called the "bonding hormone," because it promotes human bonding, feelings of love and general well-being.

Bifidobacterium bacteria are other commonly used bacteria in probiotic supplements. They also produce lactic acid.

B. infantis gets its name from the fact that it is one of the first probiotics to colonize the digestive tract in infants. Breast milk contains a complex sugar that specifically feeds this species of bacteria. It is an important strain that helps stimulate the immune system and helps to reduce the population of pathological organisms like clostridia, salmonella and shigella. It also helps digestion, produces vitamins and reduces inflammatory reactions. It is also reported to be helpful in easing irritable bowel syndrome.

B. longum is an abundant probiotic in the large intestine, which crowds out pathological organisms and undesirable yeast. Clinical studies show it reduces the frequency of gastrointestinal disorders such as diarrhea and nausea during antibiotic use. It also helps to balance pH levels in the intestines, further inhibiting undesirable bacterial growth. Other potential benefits are its ability to produce certain B vitamins and to suppress excess cholesterol production.

B. bifidus is a probiotic organism that colonizes the mucus membrane lining of the colon and the vaginal tract. It enhances mineral assimilation and prevents invading pathogenic bacteria from attaching to the intestinal wall.



Streptococcus thermophilus was mentioned earlier as a bacteria used to culture yogurt. It produces the lactase enzyme to break down lactose. It's one of the best strains for people who have trouble digesting dairy foods.

The name of this genus, *Streptococcus*, comes from a Greek term that means easily bent. This refers to the way these bacteria group themselves into chains resembling strings of beads that have been twisted.

Bacillus coagulans is a lactic acid producing bacteria that forms spores, which means it can be used as a shelf-stable probiotic. A few studies have found it may be helpful for irritable bowel syndrome, constipation, intestinal gas and inhibiting respiratory tract infections. It can also help increase populations of other beneficial bacteria in the gut.

There are many situations where supplementing with probiotics like those above is very beneficial. They should always be taken after using antibiotics and following any colon cleanse. Anyone who suffers from compromised immunity, auto-immune diseases, asthma, allergies, frequent infections, yeast infections or cancer, should also consider taking probiotics. People with inflammatory bowel disorders, peptic ulcers, chronic fatigue, autism, chronic yeast infections or mood disorders may also benefit.

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fenugreek, dandelion and burdock can also be helpful for correcting dysbiosis, while balancing blood sugar. Cinnamon is not only antimicrobial, the oil in it helps break down intestinal biofilm. The dandelion and burdock in this formula are also sources of the prebiotic inulin.

Feeding the Good and Starving the Bad

Probiotics also need food and the substances that feed them are called prebiotics. Fructooligosaccharides are prebiotic compounds found in many plants. Inulin is the most well-known prebiotic and is found in many herbs and foods from the sunflower family, including burdock, dandelion, chicory, elecampane and Jerusalem artichokes. Many of these plants are known for their ability to improve intestinal health.



Generally speaking, a diet high in vegetables will provide plenty of prebiotics to help maintain a healthy gut flora. In contrast, a diet high in refined sugars and starches tends to promote the growth of unfriendly bacteria and yeast.

If you have a lot of gas, bloating and digestive distress, it would be wise to not only get rid of the refined carbohydrates in your diet, it would be wise to avoid FODMAPs in general. FODMAPs are food substances that intestinal bacteria can ferment, causing excessive gas, belching and digestive upset. A list of high FODMAP foods can be found on Tree of Light's *Blood Type, pH and Nutrition charts* and on various websites.

Probiotic Supplements and Foods

To rebuild the population of friendly bacteria in the intestinal tract you can use both supplements and cultured foods. *Bacillus coagulans* is a good probiotic with which to begin. It is shelf stable so it doesn't require refrigeration to remain potent. It will

help to knock down unfriendly flora, preparing the way for more friendly species.

This can be followed by a **Probiotic Supplement** containing most of the strains listed on page three. This broad-spectrum probiotic will introduce many valuable species into the microbiome.

Children benefit from *Bifidophilus* especially if they have thrush or are colicky. The powder from probiotic capsules can be sprinkled in the diaper for thrush-related diaper rash.

It's probably best to take probiotics before meals on an empty stomach. You can also implant them in the colon by mixing the powders from 3-5 capsules into a cup of room temperature water and injecting the solution rectally using a bulb syringe. This implants the bacteria right where they are needed.

When using probiotics to avoid diarrhea while traveling, double or triple the amount normally consumed and take them with meals.

Another big ally of a healthy microbiome is to eat naturally-fermented foods. Yogurt is the most familiar of these foods, but other cultured dairy products like kefir and soft cheeses can also help. Just make sure your brand has live cultures. It is also preferable to use grass fed, organic dairy products if you're not allergic to them.

Even better sources of probiotics are naturally pickled vegetables, such as natural pickles, sauerkraut and kimchi. Fermented soy foods like tempeh, miso and natural soy sauce are also helpful. These foods may contain an even broader range of good bacteria. For instance, probiotic-filled miso reportedly contains more than 160 bacteria strains. Again make sure to choose varieties with live cultures. You can also make your own fermented vegetables. Recipes can be found online and in Sally Fallon's book *Nourishing Traditions*.

Additional Help and Information

For more information about fighting bacterial infection naturally and rebuilding your microbiome with probiotic supplements contact the person who gave you this newsletter. You can also consult the following resources:

Gut Crisis by Robert Keith Wallace, PhD and Samantha Wallace
Nourishing Traditions by Sally Fallon