



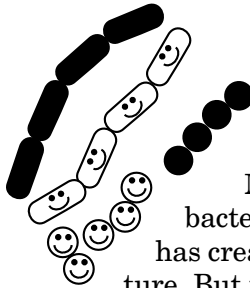
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Tips for Using Probiotics Effectively

- ◆ Probiotic supplements contain living microorganisms. Left on the shelf, these bacteria will multiply, use up their food supply and die. To prolong the shelflife of probiotic supplements, with the exception of *L. Reuteri*, they should be kept frozen or refrigerated.
- ◆ Digestive secretions destroy bacteria, including friendly ones. When trying to repopulate the intestinal tract with friendly flora, it is best to take probiotics apart from food so they are exposed to fewer digestive secretions. Take them first thing in the morning about 1/2 hour before breakfast, or between meals. Taking them with fiber buffers the action of digestive secretions.
- ◆ The exception to the above is foreign travel. When traveling, take probiotics *with* food. They compete with any harmful bacteria and help to prevent food poisoning and traveler's diarrhea.
- ◆ The best way to gain the benefits of probiotics is to implant them directly in the colon. This is done through a rectal injection. Mix the contents of 3-4 capsules of probiotics into a cup of lukewarm water and inject it into the rectum using an enema bottle or syringe. Retain the liquid as long as possible. This allows the probiotics to bypass the digestive secretions and implant themselves directly in the colon.
- ◆ Probiotics can also be used as douches for vaginal yeast infections. The powders can also be applied topically for diaper rash in infants.



Beneficial Bacteria

Supporting the "Good Guys"

Most of us associate bacteria with disease. We think of bacteria as something to be eliminated and destroyed. This has created an almost obsessive use of disinfectants in our culture. But not all bacteria are bad. It is the action of bacteria, for example, that allows milk to be fermented to create cheese, yogurt and kiefer. Bacteria also create other fermented foods such as sauerkraut and tofu. Another benefit of bacteria is that they breakdown minerals in the soil and make them available to the roots of plants. So, plants need bacteria to be healthy.

Our "roots," i.e., the place where we absorb water and nutrients, is our intestinal tract, and bacteria play an important role in our "root" system, too. In fact, there are about three to four pounds of friendly microorganisms living in our intestinal tract, most of them bacteria. A proper balance of these microbes is essential to our health.

There is growing evidence that our preoccupation with destroying microbes as a means of preventing disease doesn't really work. Overuse of disinfectants in the home increases asthma risk in children, and the constant use of antiseptic soaps has been linked with increased risk for skin infections. How can this be so?

The reason is that we live in a symbiotic relationship with microorganisms. Many strains of bacteria are actually part of our body's natural ecosystem. They serve to help protect the body against unfriendly microbes.

In addition to the internal ecosystem, where billions of microbes are inhabiting our gastrointestinal tract, there is also a surface ecosystem, with billions of additional microbes on the surface of the body. Excessive use of disinfectants destroys the surface ecosystem and increases risk of infection. The same is true for the beneficial bacteria in the intestines. Antibiotics and other germ-killing agents can disrupt the balance of the internal ecology, making the body more susceptible to infection.

The key here is balance. As long as these microbes are in balance, they help us remain healthy. Collectively, the microbes of the internal ecology are known as the *intestinal microflora*. This internal ecosystem is composed of 400-500 different strains of bacteria and other microorganisms. When it is balanced, it protects against infection and promotes health. When it is imbalanced, it creates the conditions that promote disease.

This issue of Sunshine Sharing will explain the role the intestinal microflora plays in the body and how to promote a healthy balance of bacterial "good guys" in the body.

The Health Benefits of Probiotics



There are many different species of beneficial bacteria inhabiting our intestines. Many belong to the genus *Lactobacillus*. These include *L. acidophilus*, one of the first strains sold as a supplement. Another genus containing species of friendly bacteria is *Bifidobacterium*, sometimes referred to as bifidophilus. A third major group belong to the *Streptococcus* genus. There are many others.

Who Needs Probiotics?

Most people living in western society can benefit from taking probiotics. Since antibiotics are the worst culprit for throwing intestinal flora out of balance, anyone who has had an antibiotic should take a probiotic supplement. Don't forget that antibiotics are also hidden in meat and dairy foods. So, if you use animal products, periodic supplementation with probiotics is very important.

Chlorine and other antibacterial chemicals added to drinking water also upset the balance of the microflora. Pesticides and herbicides present in our foods also have disruptive effects.

People who suffer from yeast infections of any kind, including athlete's foot, jock itch, vaginal yeast infections and nail fungus needs to restore balance to their intestinal microflora using probiotics. People with weak immune systems, frequent respiratory infections and congestion, food or respiratory allergies, inflammatory bowel disorders, skin eruptions, constipation or intestinal infections may also see health improvements from taking probiotics.

People who travel can avoid infections from foreign food and water by taking probiotics with meals. Probiotics can also be given to children and infants to reduce the risk of infection.

In short, probiotics are a basic health-building supplement, as important for most Americans as a multivitamin.

The friendly bacteria inhabiting the intestines are called *friendly flora* or *probiotics*. *Biotic* is from a Greek word that refers to life. So *pro-biotic* means favorable to life. This is in contrast with the word *anti-biotic*, which literally means against life.

Immune Enhancement

Antibiotics weaken the immune system because they destroy the friendly flora. These friendly flora are actually part of the immune system. Friendly bacteria enhance the immune system in several ways. First of all, they form a sort of living "blanket" that coats the intestinal tract and inhibits other species of microorganisms from "gaining a foothold" on the intestinal mucosa. They compete with other microbes for food, which also holds down the growth of infectious organisms.

Friendly bacteria even produce chemicals that are deadly to harmful forms of bacteria, so they act as natural antibiotic agents against harmful bacteria. Another benefit of friendly bacteria is that they have a stimulating effect on the body's immune system. For instance, animal studies showed that *S. thermophilus* and *L. bulgaricus* increased proliferation of lymphocytes, stimulated B lymphocytes and activated macrophages.

The final and best known benefit of friendly flora is their ability to prevent yeast such as *Candida albicans* from multiplying out of control. This is one of the primary problems with antibiotics. Antibiotics not only kill harmful bacteria, they also kill the friendly bacteria and encourage yeast overgrowth. Yeasts secrete a toxin that weakens the intestinal membranes and reduces the immune response. Probiotics are the antidote to this side effect of antibiotics, helping to restore a healthy intestinal microflora.

Other Benefits

Protection against infections and enhanced immunity, however, isn't the only benefit the intestinal microflora provide. A number of studies have shown that probiotics can help prevent diarrhea. By taking probiotics

with meals when traveling abroad, many people have been able to prevent diarrhea caused by unfamiliar microbes in the food and water.

Probiotics also help overall colon health. They reduce the risk of inflammatory bowel disorders such as colitis, Crohn's disease, and irritable bowel syndrome. They also reduce the risk of colon cancer. They should be used as part of a natural treatment plan for these diseases.

Healthy intestinal microflora improve the body's ability to digest fats and proteins. Probiotics synthesize certain vitamins the body needs, including B1, B2, B6, B12, folic acid and biotin. The synthesis of B12 by probiotics is particularly important for vegetarians who are not getting this vitamin in their diets.

The friendly flora also help detoxify certain poisons in the digestive tract. For instance, they help break down ammonia, cholesterol, and excess hormones.

The anthraquinone glycosides in stimulant laxative herbs like cascara sagrada and senna are activated by the intestinal microflora. In fact, these herbs are much less effective if the intestinal microflora is out of balance. Probiotics by themselves help to overcome constipation, too.

Finally, about 70% of the energy requirements of the intestinal mucosa come from fatty acids produced as a by product of bacterial fermentation. This means that the intestinal microflora actually helps feed the intestinal lining. This demonstrates how vital this synergistic relationship is to health.

In fact, a healthy intestinal microflora is such an important part of total health, that some health researchers feel it should be considered as an independent body system. The intestinal microflora is a highly adaptable system, as it changes constantly, adapting itself to one's diet and environment. It is easy to see why a balanced intestinal microflora is such an important factor in a healthy body.

Probiotic Supplements for Your Health

A variety of probiotics are available for different needs and purposes. Here are four probiotic supplements available from Nature's Sunshine, and their benefits.

Acidophilus

NSP's **Acidophilus** contains the species *Lactobacillus acidophilus* in a dairy-free base. *L. acidophilus* is one of the major bacteria in the intestinal microflora of both the small and large intestines. These bacteria are also present in the mouth and vagina. Some of the benefits of acidophilus include:

- It enhances the digestion of milk sugar (lactose) by producing lactase. This helps prevent lactose intolerance of dairy foods.
- It aids in the digestion of other nutrients.
- It creates lactic acid and other inhibitory substances that suppress undesirable strains of microbes in the intestines.
- It produces natural antibacterial substances that inhibit hostile bacteria.
- It helps to break down and eliminate cholesterol.
- It reduces proliferation of yeasts such as *Candida albicans*.

Acidophilus is probably the most widely used probiotic supplement, but with so many other species available, it is often better to use a supplement that contains several strains.

Bifidophilus Flora Force

The **Bifidophilus Flora Force** supplement contains *L. acidophilus*, and includes three other species of friendly bacteria—*L. casei*, *L. rhamnosus*, and *Bifidobacterium longum*. This product is in a base of fructo-oligosaccharides, which serve as food for the bacteria and aid their implantation in the colon. This supplement provides the benefits of acidophilus with added benefits of the three additional strains.

B. longum is a very abundant organism found in the large intestine. It plays an important role in crowding out

pathological organisms and yeast. In clinical studies it has been found to reduce the frequency of gastrointestinal disorders such as diarrhea and nausea during antibiotic use. *B. longum* also helps balance pH levels in the intestines, further inhibiting undesirable bacterial growth. The bifido strains of bacteria also appear to suppress excess cholesterol production and help produce certain B vitamins.

L. casei is a transient bacteria found in the large intestine and mouth. It is found in milk and cheese. It has effects similar to *L. acidophilus*.

L. rhamnosus is found primarily in the small intestine and the vagina, where it helps inhibit bacterial infections. It is a species with a prolific growth pattern and has a high tolerance to bile salts (one of the digestive secretions that destroys bacteria). Research suggests it may be helpful in reducing gut sensitivity and helping with eczema and food allergies.

L-Reuteri

Lactobacillus reuteri is a strain of lactobacillus that is stable enough to allow it to be placed in a chewable tablet that does not require refrigeration. This strain of bacteria is found in breast milk and is indigenous to the human digestive tract. It is much more viable than *L. acidophilus* or *B. longum* in surviving stomach acid and bile salts, so it is more effective than other probiotics when taken orally. It also adheres better to the intestinal lining.

With over 50 years of clinical research involving over 1000 scientific articles, *L. reuteri* is clinically proven to provide a variety of health benefits. *L. reuteri* is unique among probiotic bacteria in its ability to form an antimicrobial substance called reuterin. This substance can inhibit and/or prevent the growth of many different types of microorganisms, both gram-positive and gram-negative bacteria, fungi and protozoa. It may also play a role in neutralizing toxins, including carcinogens. A more recent discovery is a substance called reutericyclin, which also combats other bacteria.

It supports the growth of other friendly bacteria, while inhibiting other unfriendly organisms. Thus, it promotes a healthier balance of microflora in the intestines.

L. Reuteri increases surface area in the microvilli of the intestinal tract. This improves mineral and nutrient absorption. It also helps break down cholesterol.

L. Reuteri is clinically proven to enhance colon health in children, reducing bowel distress, irregularity and infections. It also helps reduce allergic

Continued on page 4

The Care and Feeding of Intestinal Flora

Our intestinal ecosystem can be thought of as a little internal "garden" that needs a certain amount of care and feeding. It isn't enough just to plant the seeds by ingesting probiotics. We also need to do things to create a friendly environment for their growth.

Diet plays a critical role in keeping the intestinal environment balanced. Excessive sugar, fat, or heavily cooked meat in the diet will encourage the growth of undesirable species of microbes. On the other hand, eating fermented foods like fresh, non-pasteurized yogurt, kefir, kimchi, or sauerkraut can enhance our friendly flora and improve intestinal health.

We can do other things to feed our microflora. Fructo-oligosaccharides (FOS), such as inulin, are excellent food for microflora. Inulin is found in many herbs used to promote intestinal health. It is common in members of the sunflower family such as **Dandelion**, **Burdock**, elecampane, Jerusalem artichokes, and chicory root.

Oligosaccharides are also present in foods such as bananas, onions, leeks, asparagus and whole cereal grains. Eating foods or using herbs containing oligosaccharides can help promote a healthier balance in our intestinal "garden."

Probiotic Supplements

Continued from page 3
reactions in children.

Because of its unique properties, **L-Reuteri** is one of the best probiotic supplements to take after a round of antibiotics to restore balance to the intestinal flora.

Probiotic Eleven

You've probably heard of broad spectrum antibiotics, a term that refers to an antibiotic that kills a broad range of bacteria. Well, **Probiotic Eleven** is a broad spectrum probiotic, because it contains eleven different species of friendly bacteria. In addition to the *L. acidophilus*, *B. longum*, *L. rhamnosus*, and *L. casei* we've already discussed, Probiotic Eleven also contains the following.

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

L. brevis is a bacteria found in milk, kefir, cheese, and sauerkraut. It helps produce lactic acid and natural antibacterial agents that inhibit unfriendly strains of microorganisms. It also helps with the synthesis of vitamins D and K.

L. bulgaricus is a transient, but important, bacteria in the ecology of the intestines. It is used along with

Streptococcus thermophilus to create yogurt and is found in both yogurt and cheese. It helps digest lactase (milk sugar) to improve tolerance to dairy products. It also produces lactic acid to inhibit the growth of harmful microbes.

L. plantarum is another transient bacteria found in dairy products, sauerkraut and pickled vegetables. They are another lactic acid producing strain of bacteria.

Streptococcus thermophilus is the other bacteria in yogurt culture. It also produces lactase to digest milk sugar. In fact, it is the best strain for helping break down dairy products.

B. infantis is an important strain that helps stimulate the immune system. It has been observed to have action against pathological organisms like clostridia, salmonella and shigella.

L. salivarius helps normalize the intestinal microflora and may inhibit *H. pylori*, the bacteria associated with stomach ulcers.

Using Probiotics

Always take probiotics after any round of antibiotics. Probiotics should also be taken as part of a health building program for anyone who is chronically ill or who has weak immunity.

Generally speaking, the best times to take probiotics are first thing in the morning or on an empty stomach right before going to bed.

Sources

For more information about probiotics, talk to the person who gave you this newsletter. His or her name should appear below. You can also consult some of the sources listed below for additional information.

Foundations of Health: The Liver and Digestion Herbal by Christopher Hobbs

Digesting the Facts about Probiotics by Carol Radice, Vitamin Retailer, October 1994.

www.reuteri.com

A Chart of Microorganisms Used as Probiotics by Jeremija Lj. Rasic, PhD.

Prescription for Nutritional Healing by James F. Balch and Phyllis A. Balch

Some of the material for this newsletter was obtained from an unpublished paper called *Understanding Probiotics* by Dr. Rob Greenburg.

Important Notice

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