

Re: Probiotic Organisms

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Probiotics
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Probiotics is a term that means "for life" and defined as "live microorganisms that beneficially affect the host by improving the balance of the intestinal microflora". It is commonly used to refer to "good" bacteria that one has to have in the body in order to maintain a healthy immune system.

There are over 400 different known species of bacteria that inhabit the normal bowel -- excluding viruses, yeasts, and parasites. To put it another way, there are 20 times more bacteria in the body than there are cells AND more than the total number of people that ever lived on Earth. Therefore, having the right kind of bacteria in the gut is very important since the intestinal tract is home to some 100 trillion microorganisms, but only a few of them are friendly.

History

Probiotics was first conceptualized by the Russian Nobel Prize winner and father of modern immunology, Elie Metchnikoff, at the beginning of the 20th century. He believed that the fermenting bacteria in milk products consumed by Bulgarian peasants were responsible for their longevity and good health. Recent research is now catching up with what he already knew. The actual word was first used by Lilly and Stillwell in 1965 as a contrast to the word "antibiotics". By the 1970s, "probiotics" was being used in the sense that we know it today.

The use of live microorganisms in the diet has a long history and is one of the oldest methods for producing and preserving food. Soured milks and such cultured dairy products as kefir, koumiss, leben, and dahi were often used therapeutically before the existence of microorganisms was recognized. Such dairy products are mentioned in the Bible and the sacred books of Hinduism.

It appears we have come full circle in our progress. The following "History of Medicine" sums up this very well.

2000 BCE – Here, eat this root.

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1000 CE – That root is heathen. Here, say this prayer.
1850 – That prayer is superstition. Here, drink this potion.
1920 – That potion is snake oil. Here, swallow this pill.
1945 – That pill is not effective. Here, take this penicillin.
1955 – Oops...bugs mutated. Here, take this tetracycline.
1960–1999 – 39 more "oops"... Here, take this more powerful antibiotic.
2000 – The bugs have won! Here, eat this root.
We could take this one step farther and add:
2001 – Roots are not enough. Here, take this probiotic.
"Probiotics will be to medicine in the 21st century what antibiotics and microbiology were in the 20th" (Dr. Michael L. McCann).

Today

Although probiotics are commonly used in Asia and Europe, the Western World remains skeptical, requiring massive studies and legislation. This may not be entirely a bad thing since an independent testing lab found that eight out of 25 probiotic supplements tested contained less than 1% of either the number of live bacteria claimed on the label or the expected minimum of 1 billion.

Much of the world depends upon various fermented foods as dietary staples. The most common fermented foods are kefir, yogurt, tempeh, miso, sauerkraut, and kim chi. Most of Probiotics are bacteria with the most common species being Lactobacillus and Bifidobacterium. An example of a Probiotic yeast is Saccharomyces boulardii.

Unlike drugs, herbs, vitamins, and minerals, you cannot take too many probiotics and overdose. It took some time for doctors to realize that, when antibiotics were given, they destroyed the beneficial bacteria as well as the harmful, thus making the body more prone to secondary infections. Even with this realization, doctors still have not yet associated the same type of flora destruction with what happens during chemo and steroid therapies. Today, some 20,000 people die every year from untreatable diseases caused by drug-resistant bacteria – and that number is growing alarmingly.

Benefits

Probiotic organisms have several decided health benefits, which include:

- Assist such other natural antimicrobial agents as echinacea, goldenseal, and garlic during intestinal cleansing programs.
- Assist the liver in the detoxification process, thereby helping to prevent such liver diseases as Hepatic encephalopathy (severe liver dysfunction).
- Bolster the immune system.
- Decrease the incidence and duration of diarrhea, whether it is caused by antibiotics, Clostridium difficile, rotaviral, or other pathogens.
- Enable better growth development in children.
- Have a positive influence on autistic children.

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Have anti-carcinogenic, anti-mutagenic, and anti-allergic activities.
Help alleviate such inflammatory conditions as Crohn's disease and ulcerative colitis.

Help prevent osteoporosis.

Help prevent colon cancer by preventing the breakdown of enzymes that contribute to the growth of cancer-causing agents.

Help alleviate food, chemical, and/or environmental sensitivities.

Improve digestion and balance cholesterol metabolism.

Increase nutritional value of foods through better digestibility and an increased absorption of nutrients.

Influence better intestinal and urogenital flora, especially after antibiotic and radiation therapies, which are known to induce colitis, yeast infections, and vaginitis.

Maintain mucosal integrity.

Manufacture, process, and help to absorb nutrients, especially the B vitamins.

Manufacture lactase, which promotes intestinal lactose digestion.

Prevent and reduce intestinal tract infections, including those caused by bacteria or viruses, Candida, and Helicobacter pylori.

Promote a feeling of well-being.

Provide an antagonistic environment for pathogens by normalizing beneficial organisms. This encourages friendly ones to crowd out of harmful ones, thereby blocking their adhesion sites in addition to inactivating enterotoxins.

Reduce catabolic products (bile pigments) eliminated by kidney and liver.

Reduce and eliminate overgrowth of small bowel bacteria.

Regulate gut motility, thereby reducing such conditions as constipation.

Specific Probiotic Bacteria and Conditions

The following clinical probiotic studies have been reported as having beneficial effects:

Normalize intestinal flora: Lactobacillus (acidophilus, casei, plantarum) and Bifidobacterium bifidum

Stimulate the immune system: Lactobacillus (acidophilus, casei, rhamnosus, plantarum, delbrueckii, johnsonii) and Bifidobacterium bifidum

Diarrhea associated with antibiotics: Lactobacillus (rhamnosus, acidophilus, bulgaricus), Saccharomyces boulardii, Bifidobacterium longum, and Enterococcus faecium.

Diarrhea associated with traveling: Lactobacillus (rhamnosus, acidophilus, bulgaricus, johnsonii), Bifidobacterium bifidum, and Streptococcus (thermophilus, boulardii)

Diarrhea associated with the Rotavirus: Lactobacillus rhamnosus, Bifidobacterium bifidum, and Streptococcus thermophilus

Acute diarrhea: Bifidobacterium bifidum, Lactobacillus (bulgaricus, acidophilus, rhamnosus, reuteri) and Streptococcus thermophilus

Recurring Clostridium difficile colitis: Lactobacillus (rhamnosus, boulardii)

Anti-tumor properties: Lactobacillus (acidophilus, casei, plantarum,

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delbrueckii, gasseri) and Bifidobacterium (longum, bifidum, adolescentis, infantis)

Reducing lactose intolerance: Lactobacillus (bulgaricus, rhamnosus, johnsonii) and Streptococcus thermophilus

Lowering fecal enzyme activity: Lactobacillus (rhamnosus, casei, gasseri, delbrueckii, acidophilus)

Consumption

During antibiotic therapy, taking probiotics as well keeps the intestinal flora in proper balance. They can be taken together, but not at the same time of day. In order for the probiotics to be the most effective, they should be taken at least two hours after each dose of antibiotic. When the treatment has been completed, double or triple the probiotic supplements for about ten days or two weeks. Probiotics should be taken with food or shortly after eating as food dilutes the stomach acids enough for them to survive their trip through to the intestines where they belong.

When taking beneficial bacteria or an antimicrobial agent, pathogens begin to die off. This sometimes causes unpleasant side effects known as The Jarisch–Herxheimer Reaction, so named for the German dermatologist who first identified it. As pathogens begin to die, others try to escape by quickly exiting the body. When these microbes appear in large numbers, the exit routes from the body begin to clog — much like rush hour traffic! It is at this point that the host may begin to experience headaches, bloating, gas, or allergy-type symptoms. Depending on the individual's level of tolerance for these unpleasantities, the dosage of probiotics may have to be reduced until the symptoms subside, and then increased slowly to the maximum recommended. Regardless of first appearances, it is important to realize that this reaction is a positive indication that all is going well.