

Natural Health Tips

Probiotics

There are about 100 trillion bacteria in our digestive system (that's 100,000,000,000). This number is higher than the total number of the cells in our body. There are 400-500 types, many of them having even more sub-strains and their overall weight is about 4 pounds.

But not all of them are harmful to us. Yes, there are the "bad guys", that produce substances that make us sick, or prone to sickness. Some can cause acute illness, others can lead to chronic diseases and even cancer. Salmonella, Staph, Candida, E. coli, Klebsiella, Yersinia enterocolitica are only a few of the microbes and fungi that have been linked to digestive and autoimmune problems.

But our guts can be inhabited also by friendly bacteria. Known under various terms (*probiotics* – literally meaning "for life", *eubiotics* - Greek for "good, healthy for life", *intestinal flora*) they offer both protective and nutritive properties. Acidophilus (short term for Lactobacillus acidophilus) and Bifidum (short for Bifidobacteria bifidum) are two of the better known friendly bacteria and are available in fermented foods and as supplements.

There are several mechanisms by which the friendly bacteria are beneficial to us.

1. They compete against the harmful bacteria on availability of food and living ground. The acids secreted by the friendly flora change the pH of the intestine to a level that is hostile to the pathogenic harmful microbes and to yeast.
2. They improve absorption of calcium, magnesium, iron and a few other minerals that require an acidic environment for proper absorption.
3. In the process of their metabolism they produce vitamins (B₁, B₂, B₃, B₅, B₆, B₁₂, biotin, folic acid and vitamin K) and some essential fatty acids.
4. They help regulate the bowel movements, treat diarrhea and generally improve digestion (they feed on cellulose – that otherwise feeds gas-producing bacteria, break down bile acids and bacterial toxins)
5. Some will actually indirectly "kill" harmful pathogens in the gut. For example acidophilin, secreted by Acidophilus, is toxic for streptococcus, staph and a few other bacteria. Hydrogen peroxide is produced by some strains of lactobacillus and is lethal for yeast (Candida) and E. coli.

With the increasing threat of food poisonings we want to turn even more towards natural, traditional approaches to keep our digestive system healthy.

Natural sources of probiotics are all fermented foods. The "fermentation" is actually the process naturally done by the bacteria feeding on the sugars in the food. Depending on the food selected

we'll find a different variety of probiotics. Cultured yogurt is probably the best natural source of important types of friendly bacteria: it naturally contains two lactobacilli and you want to look for products that are also enriched with two more: Acidophilus and Bifidum.

Other good sources are: sauerkraut, cottage cheese, tofu, miso soup and soy sauce (traditionally brewed). Eat these in moderation due to their high sodium contents.

It is a good idea to consume probiotic foods on a daily basis for a healthy, preventive diet. If you want to treat a digestive condition with probiotics, beside consulting your physician, you may want to use a probiotic supplement that contains at least 2 billion microbes of each of the protective species (Acidophilus and Bifidum). Keep in mind that the best products will be found in natural food stores and will be kept refrigerated, to keep the bacteria in a live but dormant state.

One of the sites providing additional valuable information on probiotics is <http://nccam.nih.gov/health/probiotics/>.

For a deep and broad analysis and understanding of probiotics read Probiotics in Food Safety And Human Health by Gogtepe, Juneja and Ahmedna – CRC Press.