



Probiotics and Prebiotics

By Kathleen O'Bannon, CNC

Your body requires “good” bacteria to function efficiently. Probiotics and Prebiotics are “good” bacteria. Do you have them?

You need a balance of intestinal bacteria favorable to digestion in order for your body, especially the intestines, to utilize minerals and other nutrients from your food. This bacteria works off carbohydrates and sugars, often called fructooligosacharrides, found in vegetables and fruits, a large part of a balanced diet. A balanced diet is essential for health to provide the nutrients needed for energy and vitality. A balanced diet consists of protein, carbohydrates, fiber, vitamins and minerals, and fats. The US Department of Agriculture reports that to be healthy each person needs to have 6-10 half-cup servings of vegetables and some fruits daily, and at least one serving must be raw. Whole grains should be the only kind of grain products eaten in a balanced diet. Even when following a balanced diet the proper balance of intestinal bacteria is essential or the nutrients in food and/or supplements cannot be utilized. Probiotics and prebiotics are the solution to obtaining that balance of intestinal good bacteria.

Balance the Bacteria

Fruits and fiber-rich vegetables provide the food for the good bacteria to create a balance of bacteria. The good bacteria should be about 85% of the total bacteria and the bad bacteria, around 15% of the total bacteria. This is considered an acceptable balance. When the so-called bad bacteria are allowed to increase to more than this amount, problems can occur and the medical term for this is dysbiosis. Many things can cause the good bacteria to decrease or not be produced such as stress, poor dietary habits, drugs, smoking or drinking alcohol to excess, and especially over consumption of sugar and nutrientless foods or fast foods. When the supply is allowed to replenish by eating the nutrient dense prebiotic foods of whole grains, root vegetables, onions and garlic, asparagus, and Jerusalem artichokes and the probiotic bacteria of *Bifidobacterium bifidum*, *Lactobacillus acidophilus*, and *L. bulgaricus* the body will create its own proper balance of bacteria in the intestines and help create a healthy intestinal environment.

Some Results of an Imbalance of Intestinal Bacteria

- Gas, bloating, indigestion
- Frequent colds or bouts of flu
- Irritable Bowel Syndrome (IBS)
- Chronic fatigue and/or fibromyalgia
- Diarrhea and/or constipation
- High cholesterol levels

- Ulcerative colitis
- Skin problems like psoriasis, acne, eczema or atopic dermatitis
- Candida type yeast infections
- Bad breath and body odor
- Burning or itching anus
- Allergies
- Crohn's Disease

Probiotics

Probiotics are also called beneficial bacteria or flora and they are the “good” bacteria that are required by your body to have proper digestion and intestinal health. They are actually live microbial food ingredients that, when ingested in sufficient quantities, exert a health benefit on the person and their digestion. Probiotics are live flora that allow for bacterial colonization of the colon and their function is to activate the mucosal immune system and prevent pathogen colonization and translocation by strengthening the mucosal barrier interfering with pathogen colonization, and in some instances, producing secretory antibacterial substances. (Chen, CC. 2005) We all need to have these beneficial bacteria in our bodies if we want to be healthy. Antibiotics destroy all bacteria including the good kind so it is essential to replenish the supply by taking a probiotic after taking antibiotics. Some people prefer to take yogurt with live cultures in it others prefer to take liquid or capsules of probiotics to replenish the supply of good bacteria.

Prebiotics

Prebiotics are nondigestible carbohydrates that are fermented by the colon, stimulating the proliferation of the good bacteria and producing short-chain fatty acids. Inulin is the most common prebiotic and belongs to a class of compounds known as fructans. Most inulin comes from chicory and the best is organically grown. Inulin is resistant to digestion in the upper gastrointestinal tract and therefore reaches the large intestine (colon) essentially intact where it is fermented into indigenous bacteria.

Synbiotics

Synbiotics are a new class of digestive aid that contain both probiotics and prebiotics resulting in a greatly enhanced immunoprotective and immunosupportive factors in the body than probiotics and prebiotics individually. (Bengmark S. 2005)

Pro- And Prebiotics Can Be Effective For

- Improving digestion
- Reducing bloating
- Improving mineral absorption
- Restoring intestinal function
- Increasing intestinal motility
- Improving immune function
- Balancing pH
- Reducing foul smelling stools

- Modulating transit time
- Reducing digestive problems
- Improving constipation &/or diarrhea

Uses for Children

Many of the health problems of children can be helped safely with the use of prebiotic-prebiotic synbiotic products. Recently published research using probiotics and synbiotics in children above the age of 2 years showed significant improvement in atopic dermatitis. (Passeron T. 2006) Every study using probiotics or synbiotics with children has had excellent and even dramatic results while maintaining complete safety. (Feklisova LV. 2005) Infantile diarrhea, particularly rotaviral gastroenteritis, antibiotic-induced diarrhea, and intestinal food allergies are all greatly helped by taking probiotics and prebiotics in young children. (Chen CC. 2005) Probiotics containing *bifidum bacterium* have been successfully used in children from newborn to age three with intestinal dysbiosis by improving putrefactive dyspepsia (heartburn and acid reflux) and increasing body mass index. (Amerkhanova AM. 2005)

Allergy and Asthma Prevention

Since the mid-1990s new research has been conducted showing that allergies and the immune response to ubiquitous allergens can be avoided or even prevented by increasing the microbial environment of the intestines by the use of probiotics early in life, even in infancy. Our modern lifestyles prevent children from having contact with the protective factors that were previously part of the lifestyle that encouraged autoimmunity. The destruction of or failure to form an intestinal barrier is directly related to the incidents of allergic response, asthma, and “leaky gut” in both adults and children. (Bjorksten B. 2005) This is why protective bacteria such as probiotics and prebiotics are so essential in preventing allergies and asthma at the intestinal level. Regular use of probiotics and prebiotics can help to reduce allergies and asthma as well as reduce the effect of contact with allergens.

Some Common Symptoms of Poor Small Intestine Function

- Indigestion and fullness that lasts 2-4 hours after eating
- Bloating
- Excessive passage of gas
- Abdominal cramps or aches
- Nausea and/or vomiting
- Dry flaky skin, dry brittle hair
- Difficulty gaining weight
- Weakness and fatigue
- Specific foods/beverages aggravate indigestion
- Roughage and/or fiber causes constipation
- Alternating constipation and diarrhea
- Undigested food in stool
- Greasy shiny stool
- Yellowish and foul smelling stool
- Black stool

- Mucus in stool
- Rectal spasms
- Overgrowth of yeast
- Pounding heart
- Iron deficiency anemia

Some Common Symptoms of Poor Large Intestine Function

- Lower abdominal pain, cramping, and/or spasms
- Lower abdominal pain relieved by passing stool or gas
- Raw fruits and veggies aggravate bowel pain
- Loose watery stool
- Excessive gas and bloating
- Painful, difficult, or straining during bowel movements
- Hard, dry, or small stool
- Overgrowth of yeast
- Thin or extremely narrow stool
- Feeling that bowels do not empty completely
- Bright blood following bowel movement
- Anal itching
- Moody and irritable
- Rash under breast, armpit, around naval or groin area
- Damp, rainy, or moldy setting make you feel ill

Gastrointestinal Problems

Probiotics are used to treat acute infectious diarrhea, antibiotic related diarrhea, *Clostridium difficile* infection, travelers diarrhea, diverticular disease, and *helicobacter pylori*. (Novak J. 2006) More recently probiotics are shown to also be effective in treating the symptoms of lactose intolerance, allergies, and infections in children in daycare. New research is being conducted on the effectiveness of using probiotics for the treatment and prevention of relapse of inflammatory bowel disease, in the treatment of irritable bowel disease, treatment of intestinal inflammation in cystic fibrosis patients, and the prevention of necrotizing enterocolitis in premature infants. There is also speculation that because of the improvement in autoimmunity, probiotics will one day be used in the treatment of rheumatoid arthritis, prevention of cancer, and the treatment of graft-versus-host disease in bone marrow transplant recipients. (Doron S. 2006)

Mineral Absorption

Probiotics and prebiotics, especially those containing inulin, improve the functioning of the intestines. This greatly improves the absorption of calcium and magnesium, both essential for health of the heart, relaxation of muscles, stress reduction, and general well being. (Roberfroid MB. 2005) There is some indication that calcium is required for a healthy colon and for prevention of colon cancers.

Triglyceride and Cholesterol Reduction

Inulin affects the metabolism of lipids by decreasing triglycerides and very low density lipoproteins (VLDL) particles in the blood. Cholesterol levels were reduced but not as much as the triglycerides were in recent studies conducted in Europe. (Roberfroid MB. 2005)

Colon Cancer

Because prebiotics are known to be colon cancer preventive much research has been done using inulin-type prebiotics. Inulin creates a fermentation that results in an environment in the intestines that produces health-promoting bacteria and reduces the number of potentially harmful species of bacteria thus modulating endocrine as well as immune functions. This has proven effective in reducing the risk of colon carcinogenesis or colon cancer. (Roberfroid MB. 2005)

Diabetes

Diabetes is considered an immune system disease with type 1 being an autoimmune disease and type 2 being an immune disease. Because probiotics and prebiotics improve immunity in the colon it has been useful in cases of diabetes in the past. New research has shown that probiotics prevent autoimmune diabetes when taken early and with continued use can have a positive effect on those already suffering with type 1 diabetes. (Calcinaro F. 2005)

Candida albicans

Candida is thought to be an immune system problem related to bowel dysbiosis, lowered immunity, and an imbalance of positive flora in the colon. Many health care practitioners are having great results in treating candida symptoms with large doses on an empty stomach of probiotics and prebiotics coupled with immune system fortification supplements such as sterols and sterolins found in high quantities in the sprouts of many seeds. The use of probiotics and prebiotics changes the balance of flora in the intestines to one unfavorable to candida thereby encouraging the reduction of any candida problems.

Body Balance

A natural balance of bacteria in the intestines is required to be healthy and prevent many illnesses that affect the gastrointestinal tract, stomach, and immune system. Probiotics and prebiotics effectively create the colonization of positive flora (good bacteria) in the intestines creating the proper balance for vital energy and dynamic health.

How to Take Probiotic/prebiotics

Because probiotics are sensitive to stomach acid it is best to take them on an empty stomach. This is generally right before bed for the best results. The usual dose is two to four capsules daily. Many people take probiotics and prebiotics with food for the effect of the prebiotics and that is also useful, but the full results are obtained by taking them on an empty stomach. This generally means at least 45-60 minutes before eating or 90-120 minutes after eating.

References

- Chen CC, Walker WA. "Probiotics and prebiotics: role in clinical disease states." *Advances in Pediatrics*. 2005;52:77-113
- Bengmark S, Martindale R. "Prebiotics and synbiotics in clinical medicine." *Nutrition in Clinical Practice*. 2005 April;20(2):244
- Passeron T, Lacour JP, Fontas F, Ortonne JP. "Prebiotics and synbiotics: two promising approaches for the treatment of atopic dermatitis in children above 2 years." *Allergy*. 2006 April;61(4):431-7
- Feklisova LV. "Optimization of treatment of children with acute intestinal infections by application of Russian biological microbial preparations." *Vestnik Rossijskoj akademii meditsinskikh nauk*. 2005;(12):17-24
- Bjorksten B. "Evidence of probiotics in prevention of allergy and asthma." *Current Drug Targets Inflammation and Allergy*. 2005 October; 4(5):599-604
- Amerikhanova AM, Lavroca AE, Dmitrieva GV, Pyrikova IA, Zubkova ES, Zhilenkova OG, Kuralenko AA. "Experience of pediatric application of bifidumbacterin multi, a biologically active food supplement." *Vestnik Rossijskoj akademii meditsinskikh nauk*. 2005;(12):30-32
- Tamboli CP, Nuet C, Desreumaux JF, Colombel JF. "Dysbiosis in inflammatory bowel disease." *Gut* 2004;53;1-4
- Novak J, Katz JA. "Probiotics and prebiotics for gastrointestinal infections." *Current Infectious Disease Reports*. 2006 March;8(2):103-9
- Doron S, Gorbach SL. "Probiotics: their role in the treatment and prevention of disease." *Expert Review of Anti-Infective Therapy*. 2006 April;4(2):261-75
- Roberfroid MB. "Introducing inulin-type fructans." *British Journal of Nutrition*. 2005 April;93 Suppl 1:S13-25
- Calcinaro F, et al. "Oral probiotic administration induces interleukin-10 production and prevents spontaneous autoimmune diabetes in the non-obese mouse." 2005 August;48(8):1565-75

These statements have not been evaluated by the Food and Drug Administration.

This article was written by Kathleen O'Bannon, CNC, and may be copied unchanged and used for educational purposes. Please credit Kathleen by referring to her web site: www.healthaliveproducts.com