

HEALTHY BACTERIA

Having a healthy gastrointestinal (GI) tract is important at every age. Our intestines contain over 500 different strains of bacteria (Manson, Rauch, & Gilmore, 2008). Many bacteria improve our health by improving immunity, digestion, and by protecting us from harmful bacteria and viruses (Gupta & Garg, 2009). Eating probiotics and foods that feed these healthy bacteria may help keep us healthy and stable.



What Are Probiotics?

The World Health Organization (2002) defines probiotics as “live microorganisms which when administered in adequate amounts, confer a health benefit to the host”. In other terms, probiotics are healthy bacteria that when eaten in the right amounts can provide many health benefits.

What Are the Health Benefits of Probiotics?

There are a number of different probiotic strains. Certain strains have shown to help with constipation, whereas other strains are thought to lessen the frequency of diarrhea often caused by taking antibiotics. Others may lessen the symptoms of lactose intolerance, irritable bowel syndrome (IBS), and other conditions of the bowel such as ulcerative colitis and Crohn's disease (de Vrese & Marteau, 2007).

Helicobacter pylori (*H. pylori*) infection is often what causes swelling of the stomach lining and stomach ulcers. Research is promising in showing that probiotics may prevent *H. pylori* and the increased growth of harmful bacteria (Lesbros-Pantoflickova, Cortesy-Theulaz, & Blum, 2007). Probiotics may also help prevent and treat infections of the urinary and genital tracts. Most often affecting women, yeast and bladder infections can be common, painful, and irritating. Certain strains of *Lactobacillus*, a probiotic often found in many yogurts, may be particularly helpful in preventing and treating these infections (Reid, 2001).

Some studies suggest probiotics may help prevent cancer as these good bacteria help lessen the number of cancer-promoting enzymes and/or bacteria in the GI tract. Although more studies on probiotics are needed, current research is promising (de Moreno de LeBlanc, Matar, & Perdigon, 2007).

Probiotics are found in many fermented milk products such as yogurt. The type of bacteria is an important factor when choosing a food with probiotics. Check the ingredient list on the food label for live bacteria cultures such as *lactobacillus*, *bifidobacterium*, and *streptococcus thermophilus*. They may be written as either the full form, “*lactobacillus acidophilus*” or the short form, “*L. acidophilus*”.

Foods that have probiotics include:



- Yogurt - should list the active bacteria cultures present in the yogurt (e.g., *L. acidophilus*)
- Miso - fermented seasoning made from soy used in Asian cuisine
- Fortified foods - i.e., milk, cheese, or cottage cheese, where probiotics have been added for increased health benefits
- Kefir - fermented drink made from milk
- Tempeh - fermented soy product with a meaty texture
- Kimchi - spicy fermented mixture of cabbage, onions, occasionally fish; often used in Korean cuisine
- Sauerkraut - cabbage fermented by bacteria

What Are Prebiotics?

Prebiotics are non-digestible food ingredients that can help regulate our digestive systems by helping the good bacteria in our intestines survive (Gupta & Garg, 2009). In other words, they help the growth of probiotics. Prebiotics are naturally found in many foods such as vegetables and fruit, and whole grains.

Foods that contain prebiotics include the following:



- Legumes (e.g., lentils, kidney beans, navy beans, black beans, white beans, chick peas)



- Oatmeal
- Flax
- Wheat
- Barley
- Chicory root
- Onions, leeks



- Dark green leafy vegetables (e.g., spinach, collard greens, dandelion greens, chard, kale, mustard greens, asparagus and artichokes)
- Fruit

How can you add more prebiotics and probiotics to your day?

- Make a yogurt parfait by layering yogurt, fruit, and oatmeal.
- Add ground flaxseed to your yogurt, ready-to-eat cereal, or cooked oatmeal.
- Try kefir instead of milk.
- Make yogurt pops by freezing yogurt in small paper cups, or ice cube tray.
- Make a fruit smoothie using frozen berries, bananas, yogurt, and ground flaxseed.
- Try using tempeh in a stir-fry, soup, or stew.
- Make a soup using barley, vegetables, and legumes.

Eating a variety of foods is key to helping you get the prebiotics and probiotics you need.

Many of the foods found in *Canada's Food Guide* (CFG) contain either probiotics or prebiotics. Follow CFG by choosing the correct number of food servings for your age and sex. Choose three to four food groups per meal and two food groups per snack to help meet your nutrient needs. Although supplements may be tempting, not all are regulated by Health Canada and may not work as claimed. Whole foods, like vegetables and fruit, fermented dairy products, and probiotic or prebiotic fortified foods, are better choices as they contain other active ingredients that work in the body to promote health. Check the food label to help you make food choices that are right for you and your family.

KEY REFERENCES:

- de Moreno de LeBlanc A., Matar C., & Perdigon G. (2007). The application of probiotics in cancer. *British Journal of Nutrition*, Suppl 1: S105-10.
- de Vrese, M., & Marteau, P. (2007). Probiotics and Prebiotics: Effects on diarrhea. *Journal of Nutrition*, 137, 803-11S.
- Food and Agriculture Organization of the United Nations/World Health Organization Working Group on Drafting Guidelines for the Evaluation of Probiotics in Food. *Guidelines for the evaluation of probiotics in food*. London, Ontario, Canada. April 30 and May 1, 2002. Retrieved February 2010, from <http://ftp.fao.org/esn/food/wgreport2.pdf>
- Gibson, G., & Roberfroid, M. (1995). Dietary modulation of the human colonic microbiota. Introducing the concept of prebiotics. *Journal of Nutrition*, 125,1401-12.
- Gupta V., & Garg, R. (2009). Probiotics review article. *Indian Journal of Medical Microbiology*, 27, 202-209.
- Lesbros-Pantoflickova, D., Corthesy-Theulaz, I., & Blum, A. (2007). Helicobacter pylori and probiotics. *Journal of Nutrition*, 137, 812S-818S.
- Madsen, K., Cornish, A., Soper, P, McKaigney, C., Jijon, H., Yachimec, C., et al., (2001). Probiotic bacteria enhance murine and human intestinal epithelial barrier function. *Gastroenterology*, 121, 580-9.
- Manson, J., Rauch, M., & Gilmore, M. (2008). The commensal microbiology of the gastrointestinal tract. *Advances in Experimental Medicine Biology*, 635, 15-28.
- Reid, G. (2001). Probiotic agents to protect the urogenital tract against infection. *American Journal of Clinical Nutrition*, 73, 437S-43.



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