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## Effect of Probiotic Supplements on Human Health

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### Abstract

Probiotics are live bacteria and yeasts that are good for our health, especially our digestive system. It helps in lowering the gut pH, produces  $\beta$ -galactosidases enzyme which digest lactose and stimulate IgA production. It produces short-chain fatty acid and vitamins especially vitamin-B like folate, biotin, vitamin B<sub>12</sub> and vitamin-K. It has anti-hypertension, anti-diabetic effect. The presence of probiotics in our body leads to reduce the risk of cancer. Probiotics are also beneficial for oral health.

### Introduction

Probiotic is defined as the microorganisms associated with health benefits of human when consumed. 'Probiotic' originates from the Greek word 'pro' means "for" and 'biotic' means "life". Probiotics are often called as "good" or "helpful" bacteria because it keeps the gut healthy. We can find probiotics in different forms sourced from foods and supplements. Probiotics can be supplied through foods, beverages, and dietary supplements. They can be ingested as food which reach intestine as alive. The gastro-intestinal tract (GIT) is the best home where the probiotic lives. They are naturally found in the digestive, urinary and genital systems.

### Features of Probiotics

- Probiotics bacteria are mainly non-pathogenic, non-toxic and resistant to gastric acid.
- It helps to produce antibacterial substances.
- It remains for short period in the gastro-intestinal tract.
- It helps to resist the antibacterial mechanisms that operate in the gut.

### Types of Probiotics

There are two types of bacteria found in the gastro-intestinal tract,

- Friendly bacteria
- Non-friendly bacteria

Some of friendly bacteria known as probiotics include *L. acidophilus*, *L. salivarius*, *L. casei*, *L. thermophilus*, *B. bifidum*, *B. Longum*, etc. Unfriendly bacteria known as pathogenic bacteria includes fungi such as *Candida albicans*, etc.

### Health Benefits of Probiotics

- Probiotics promote a healthy balance of gut bacteria and linked with wide range of health benefits.
- Lactobacillus helps in preventing yeast infections, bacterial vaginosis, urinary tract infection, irritable bowel syndrome,

treating lactose intolerance, skin disorders (eczema, acne) and also prevention of respiratory infections.

- Bifidobacteria are appeared in the intestinal tract within days of birth, especially in breastfed infants which is best for intestinal health. It can help with improving blood lipids and glucose tolerance.
- It improves IBS symptoms like pain/ discomfort, bloating and digestive disorders.
- *Streptococcus thermophilus* produces large quantities of the enzyme called lactase which helps in the prevention of lactose intolerance.
- *Enterococcus faecium* is found in the intestinal tract of humans and animals and used in prevention of diarrhoea.
- Leuconostoc is used extensively in food processing and used to inhibit listeria monocytogens in dairy and meat products.
- It has anti-hypertension, anti-diabetic effect. The presence of probiotics in our body leads to reduce the risk of cancer and promotes oral health.
- Daily intake of a probiotic drink can play avital role in prevention of acute diarrhoea in young children (Sur D, et al., 2011).
- Probiotic beverage containing *Lactobacillus caseishirota* improves the gastrointestinal symptoms in patients with chronic constipation (Koebnick C, et al., 2007).
- Probiotic yogurt is very effective in increasing antioxidative activity and significantly decreases fasting blood glucose. Yogurt is a functional food that can exert antidiabetic and antioxidant properties (Ejtahed S, et al., 2012).
- Probiotics boost our immune system and helps inprotection against different types of germs. Various types of allergic reactions, autoimmune disorders like ulcerative colitis, Crohn's disease, and rheumatoid arthritis and infections like diarrhoea, *H. pylori*, skin infections, and vaginal infections etc. are the common phenomenon because of poor immune system response. Probiotics can work as a defence mechanism against these kind of infections.
- It helps in improving the symptoms of mental health disorders like anxiety, depression and stress.
- Protects the heart by reducing LDL cholesterol and lowering the blood pressure.

### Foods Containing Probiotics

- Shelf life of perishable foods can be enhanced through fermentation which is referred as the slow decomposition process of organic substances induced by microorganisms or enzymes that essentially convert carbohydrates to alcohols or organic acids.
- The lactic acid supplies the bacteria which add health benefits to the food.

- The best source of probiotic containing foods are yogurt, dosa, idli, dhokla, kanji, *Tofu* (food made from condensed soy milk), tempeh (fermented soybean) etc.
- Probiotic foods available in the market are generally seen in three forms *i.e.* powder form, liquid form and in capsules form. Powder forms of probiotics are easily available in market such as Nestle nan-pro probiotics, cerelac, ORS etc. Liquid forms of probiotics are available in market such as Yakult (fermented skimmed milk with a special strain of the bacterium *Lactobacillus casei Shirota*), Kevita (fermented coconut water), Vibactoral suspension for children etc. Lacto spore probiotic, Biogut, probiotis-10 etc. are available in the medicine store in capsules form.

### Status of Probiotics in India

- Yakult Dannone released their probiotic drink named yalult. Yakult is prepared by fermenting skimmed milk adding a special strain of bacteria *L. Sc*.
- The latest and recent addition to the list of probiotics in India is ViBact (which is made up of genetically modified *Bacillus mesentricus*), which acts as an alternate to B- complex capsules launched by US vitamins.
- Probiotic yogurts have been launched by Mother Dairy.

### Conclusion

Probiotics are made up of good bacteria that helps keep our body healthy and well. It is beneficial for both adults and kids. It helps to fight with the bad bacteria during our illness. Dairy products, particularly yoghurt continue to be the most important vehicles for delivery of probiotic bacteria to the consumer with the non-dairy sector continuously evolving as well as a result of food technology advances and the growing demand. Probiotics helps in prevention of infectious diarrhoea, abdominal pain, ulcerative colitis and fatty liver etc. In addition, the regulatory status of probiotics as food components needs to be established on an international level with emphasis on efficacy, safety and validation of health claims on food labels.

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