

## **PROBIOTICS**

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Probiotics are live bacteria and yeasts that are good for digestive system. We usually think of these as germs that cause diseases, but our body is full of bacteria, both good and bad. Probiotics are often called "good" or "helpful" bacteria because they help keep our gut healthy. They're meant to prevent and treat dysbiosis — an imbalance or a deficit of beneficial microbes in your microbiome. When they work, the microbes take up residence on or in your body, adding to the populations already living there.

According to World Health Organization Data for India, diarrhoeal and digestive infections rank among the prominent mortality and disease burden contributors, with diarrhoeal diseases causing an estimated 34 to 43 deaths per 100,000 individuals. According to National Health Estimates: Non-communicable and communicable gastrointestinal complications form a substantial share of morbidity, with broader national surveys (such as ICMR and NITI Aayog reports) noting that over 56% of general chronic disease burdens link back to dietary and gut-health factors

### **HOW DO PROBIOTICS FUNCTION**

Researchers are trying to figure out exactly how probiotics work. Among other things, probiotics help send food through gut by affecting nerves that control gut movement. Researchers are still trying to figure out how probiotics work though it helps in maintaining:

**Gut Balance:** probiotics help restore or maintain a healthy balance of good bacteria in our digestive tract, especially after illness or antibiotic use. A healthy gut microbiome can boost overall immunity, reduce inflammation and help keep bowels regular. Everyday things like stress and food choices can diminish gut microbiome, and probiotics are one way to help restore it. Within digestive system, we know that a healthy gut microbiome:

- ✓ Helps break down and absorb certain nutrients and medications.
- ✓ Produces other important nutrients as byproducts.
- ✓ Helps break down and recycle bile after digestion.

**Immune Support:** It interacts with immune cells and help strengthen the intestinal lining to block harmful pathogens. In fact, it helps train immune system to recognize and eliminate harmful microbes.

### **SOME COMMON CONDITIONS PROBIOTICS TREAT**

Irritable bowel syndrome, Inflammatory bowel disease (IBD), Infectious diarrhea (caused by viruses, bacteria, or parasites), Diarrhea caused by antibiotics, Chronic bacterial infections like H. pylori. Small intestinal bacterial overgrowth (SIBO), Inflammatory bowel diseases, like ulcerative colitis and Crohn's disease. And general digestive difficulties, like constipation, gas and irritable bowel syndrome (IBS).

There is also some research that shows they're useful for problems in other parts of your body such as: Skin conditions, like eczema, Urinary and vaginal health, Preventing allergies and cold as well as Oral health

## **TYPES OF PROBIOTICS**

Many types of bacteria are classified as probiotics:

- **Lactobacillus.** This may be the most common probiotic. Lactobacillus Acidophilus is found naturally in mouth, gut, stomach, lungs, vagina and urinary tract, and it can help restore balance in all of these microbiomes. It's the one you'll find in yogurt and other fermented foods. Different strains can help with diarrhea and may help people who can't digest lactose, the sugar in milk.
- **The Bifidobacterium genus, including Bifidobacterium longum and Bifidobacterium breve.** You can find it in some dairy products. It may help ease the symptoms of irritable bowel syndrome (IBS) and some other conditions.
- **Saccharomyces boulardii** is a yeast found in probiotics. It appears to help fight diarrhea and other digestive problems

- **SOURCES OF PROBIOTICS-**

You can get probiotics in less concentrated quantities from fermented foods and drinks, including: Yogurt and kefir., Cottage cheese. Miso soup., Kombucha., Sauerkraut or kimchi., Pickles and pickle juice.

## **TOP PROBIOTIC SOURCES IN INDIAN FOODS**

**Curd (Dahi):** Homemade curd contains live strains like Lactobacillus acidophilus, which support digestion and boost immunity.

**Buttermilk (Chhaas):** A refreshing, diluted drink made from cultured curd that aids hydration and digestion.

**Idli and Dosa Batter:** The overnight fermentation of rice and lentil batter fosters beneficial bacteria such as Leuconostoc mesenteroides (though live culture counts drop if thoroughly cooked).

**Kanji:** A traditional North Indian fermented drink made from black carrots, water, and mustard seeds that acts as a natural gut tonic.

**Traditional Pickles (Achaar):** Naturally fermented mango, lemon, or mixed vegetable pickles made with salt and oil (without vinegar) contain active cultures, though they should be eaten in moderation due to high sodium.

**Fermented Rice (Pakhala / Pazhaya Sadam):** Rice soaked and fermented overnight in water, popular in Eastern and South Indian traditions, is rich in natural probiotics

## **DIFFERENCE BETWEEN PROBIOTIC AND PREBIOTICS**

**Probiotics and prebiotics are two parts of food that may support gut health.**

**Probiotics** are specific living microorganisms, most often bacteria or yeast that help the body digest food or help with symptoms of certain illnesses and are naturally found in fermented foods such as yogurt and sauerkraut. Probiotic vegetables have lived, friendly bacteria added through fermentation.

Prebiotics are parts of food the body doesn't digest but that may be used by microorganisms. Prebiotics may trigger the growth of the "good" germs in the gut. Prebiotics mainly are in high-fiber foods. Prebiotic vegetables (like garlic, onions, and asparagus) do not contain bacteria, but instead provide the fiber and fuel needed for good gut bacteria to grow

Probiotics and prebiotics also are added to some foods and come in the form of dietary supplements.

**When mixed, probiotics and prebiotics are called synbiotics.**

Fermented foods and drinks are one way to get more probiotics into your GI tract. Food processing can sometimes destroy these natural probiotics, though, so check the labels for “live and active cultures”.

Not all probiotics are alike, though. Different types of microbes function differently within your body, so different types might be better or worse for your condition. Probiotic foods in India are regulated by the Food Safety and Standards Authority of India (FSSAI). It's a good idea to consult a knowledgeable healthcare provider about which probiotics might work best for your needs.

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