

# Probiotics

## What are Probiotics?

### *The superheroes of your gut*



**PROBIOTICS** are living microorganisms (microscopic organisms) that, when taken by mouth, benefit your health by improving the balance of bacteria in the intestines. These microorganisms are most often bacteria, but also include other kinds of organisms such as yeast. Probiotics are similar, or the same as the “**good bacteria**” already in your body, particularly those in your gut. The normal human intestinal tract contains 300-1,000 different kinds of bacterial species with about  $10^{14}$  individual bacteria.

**PREBIOTICS** are dietary sugars that stimulate the growth of intestinal, protective bacteria.

Probiotics have been most commonly used when the bacterial balance of the GI tract has been disrupted by the use of antibiotics (which deplete nearly all the bacteria in your GI tract) or when “bad” bacteria (such as *C. difficile*) that for various reasons have overgrown in your GI tract and can cause illness.

When you take **ANTIBIOTICS**, they can disrupt the bacterial balance by not only killing the bad bacteria in the GI tract, but by also wiping out the beneficial bacteria. Probiotics help restore a healthy balance by adding “good” bacteria back to the gut and reducing the growth of any “bad” bacteria.

## How might they work?

Probiotics are used for multiple different types of digestive problems but since there are many different kinds of probiotics not all will have the benefit that you are looking for as it relates to your health.

Possible beneficial effects of probiotics include:

- Absorbing and/or destroying toxins released by certain “bad” bacteria that can make you sick.
- Producing substances that prevent infection.
- Preventing harmful bacteria from attaching to the gut wall and growing there.
- Boosting your immune system
- Sending signals to your cells to strengthen the mucus in your intestine, which helps it act as a barrier against infection.
- Production of B vitamins. Vitamin B is important in maintaining healthy skin, a healthy nervous system and preventing anemia
- Decrease gas production and bloating

**In IBD**, there is evidence that an abnormal bacterial balance in the intestine may trigger the immune system leading to inflammation in the small intestine and colon.

You should **BE AWARE** that there are many different brands of probiotics. They may have several different activities depending on what strain they are and what part of the intestine they are in. With so many different probiotics available in stores and on the internet it can be very difficult to sort out what will be helpful or not. Scientists are still trying to make sense of this by looking at different combinations of probiotics in different disease states.

## What has been studied in IBD?

Some studies suggest that probiotics may help decrease inflammation and delay the next bout of disease. Ulcerative colitis and Pouchitis seem to respond better to probiotics than Crohn's disease does. So far, *E. coli* Nissle, and a mixture of several strains of *Lactobacillus*, *Bifidobacterium* and *Streptococcus* may be most beneficial. Research is continuing to determine which probiotics are best to treat IBD.

Most of the studies available have shown that *Lactobacillus* GG (one of the common strains in live culture yogurt) **alone** is not beneficial for primary treatment or maintenance treatment in Crohn's disease or ulcerative colitis.

## Meanwhile in the intestines...



## Are they safe?

Most probiotics are thought to be safe, although it is not yet known if they are safe for people with severely impaired immune systems or in the case of IBD – those with bad inflammation that may make the gut “leaky”. They are often taken by people without digestive problems. They have been used for a long time in dairy foods like yogurt, cheese and milk without reported problems.

More studies are needed looking at safety of these products in patient with illness as well as long at combination products. **REMEMBER** these are considered dietary supplements and they do not undergo the same type of testing that some of the other “drugs” that you take have undergone – both in terms of benefit and in terms of safety.

**SENIORS:** Some probiotics may interfere with or interact with medications and might not be appropriate for seniors. Your doctor will be able to help you determine if probiotics are right for you based on your medical history.

**CHILDREN:** Studies have shown that probiotics may help to treat infectious diarrhea in babies and small children. It is not clear that they have benefit in children with inflammatory bowel disease. In the breastfeed infant there is likely minimal benefit – breast milk stimulates the growth of normal gut organisms that are important for the developing immune system. Ask your child's pediatrician about probiotics before giving them to your child.

Probiotics are considered **dietary supplements** and are not FDA-regulated like drugs. They may be made in different ways by different companies. Non-active ingredients in the probiotic preparation may also differ; even with the same company the different batches of probiotics may differ. They are living organisms and the number may vary between companies and batches. It is not clear whether this matters but may explain differences in response to a certain product. Probiotics also differ greatly in price, and the cost does not necessarily mean that one is better than the other. Unfortunately most insurance companies do not cover the cost of dietary supplements such as probiotics.

**SIDE EFFECTS:** The most common side effects are excess gas and bloating (usually mild and temporary). More serious side effects include allergic reactions, either to the probiotics themselves or to other ingredients in the food or supplement.

## How to choose a probiotic

Probiotics are available in many different forms: yogurt and other dairy products (look for live culture on the label), chocolate and granola bars, juices, powders, and capsules. Probiotics are available in health food stores, grocery store, pharmacies, and the internet. Here are some steps to help choose the right probiotic for you!

**CHECK THE LABEL:** The label will tell you the probiotic's group, species and strain. It should also give the number of organisms (CFU = colony forming unit = number of organisms) and how many of the microorganisms will still be alive on the use-by date.

**CALL THE MANUFACTURER:** Many labels don't say exactly which strain is in the product, they may list only the group and the species, such as *Lactobacillus acidophilus* or *Bifidobacterium lactis* or they may say something like "colon health" without giving the names of the organisms. If you're planning to take a probiotic for a specific condition such as diarrhea or IBD, call the company and find out which strains are in the probiotic and if they have done any research on the health benefit of their probiotics. Some companies post their research on the web.

**BE CAREFUL OF CLAIMS ON THE INTERNET:** Make sure that you know the product and company you are ordering from. Since these products are unregulated there may be fake products advertised. Some may not be what they say they are and some false advertising claims may be people out there trying to take your money.

**LOOK FOR PROBIOTICS FROM WELL-ESTABLISHED COMPANIES & COMPANIES YOU KNOW:** The longer a company has been around the more likely that there is available research and safety data on their products.

CHOOSE



YOUR



GI HERO



### Helpful references

<http://www.gastro.org/patient-center/diet-medications/probiotics> This site provided by the American Gastroenterological Association. Includes a podcast.