
Probiotics: Everything You Need To Know

Dominick Hussey, Functional Medicine Practitioner - July 2, 2023



Introduction

Probiotics are microorganisms that provide benefits to their host. You have likely heard that yogurt contains probiotics. But there is much more to the world of these bacteria than just yogurt. For example, most people have around a thousand different species occupying their gut: yogurt may contain five to ten species. There is much confusion and dogma surrounding probiotics. Many new clients that come to my practice purchase probiotics with little understanding about what they put in their mouths, how they work, what conditions they can help, and how to use them effectively. In this ebook, I want to shed some unbiased light on the subject of probiotics.

We will discuss the following:

1. What are the four main types of probiotics and their benefits
2. How Probiotics Work
3. How to use probiotics

Chapter 1

What are Probiotics?

Types and Benefits

There are four main types of probiotics, including

1. Lactic Acid Producers
2. Non-Lactic Acid Producers
3. Fungal (Yeast) Probiotics
4. Ecoli Probiotics

1. Lactic Acid Producers

Many lactic acid-producing bacteria belong to the Lactobacillus and Bifidobacterium families of probiotics. Within these families are some probiotic species you may have heard of before, including Lactobacillus acidophilus or Bifidobacterium infantis. Lactobacillus Probiotics Most Lactobacillus probiotics are transient, which means they pass through the gut. There are over one hundred different species of lactobacillus bacteria. You do not usually find Lactobacillus acidophilus in humans. While other species of bacteria, like Lactobacillus gasseri and reuteri, are typical residents. Some lactobacillus bacteria are known as homo-fermentative, while others are known as hetero-fermentative.

Fermentative means to break down one thing and produce something else. Homo means single, while hetero represents many.

So, homo-fermentative bacteria produce lactic acid, while hetero-fermentative bacteria produce lactic acid and gases like carbon dioxide, hydrogen and methane. People with Small Intestinal Bacterial Overgrowth often report symptoms of bloating and gas. These symptoms may be because they have an overgrowth of hetero-fermentative bacteria. Bifidobacterium Probiotics Bifidobacterium bacteria typically reside in the small intestine. There are over thirty species of Bifidobacteria. We establish Bifidobacteria in the gut during breastfeeding. Bifidobacterium probiotics have various health benefits, from playing a role in the function of the lining of the intestines to protecting against colon cancer. The Lactobacillus and Bifidobacterium species are the most well-researched probiotics. Researchers have shown that these species have essential health benefits for people with Irritable Bowel Syndrome (IBS) and SIBO.

2. Non-Lactic Acid Producers

The most well-known non-lactic-producing probiotics are the Bacillus family of bacteria. These probiotics are also known as soil-based or spore-forming bacteria. These names are because you typically find this family of bacteria in soil and water and often spend part of their life cycle in a dormant "spore-state." Bacillus bacteria may be an essential type of probiotic to include in a supplemental program because they may help replace what we have been missing due to our reduced contact with soil and the natural environment. Many Bacillus species show health benefits, including Bacillus coagulans and subtilis. Researchers have shown that these probiotics improve and balance the microbiota. Some species of bacilli bacteria are harmful, so using well-labelled and tested strains is essential. These types of probiotics are contraindicated in critically ill patients but are otherwise safe.

3. Fungal (Yeast) Probiotics

The well-known fungal probiotic is Saccharomyces Boulardii (Sac B). Sac B is not a regular part of the human microbiota, meaning it is transient and does not colonize our gut. Sac B also does not appear to be affected by stomach acid or bile. Research has shown that Sac B is efficacious in treating diarrhea, and C.difficile infection, to prevent relapse of Crohn's Disease and as a treatment of Inflammatory Bowel Disease. Sac B has anti-fungal and biofilm disruptor properties. Biofilms are the protective coating that surrounds bacteria, fungi and parasites. These properties mean that Sac B can help fungal or candida overgrowths in the small intestine. Research has shown that Sac B effectively treats digestive parasites such as entamoebas, giardia and balstocystis hominis. When you coadminister antibiotics with Sac B, it increases the treatment outcome of treatment compared to antibiotics alone. Research has shown that Sac B is as effective as the antibiotic metroidazole (Flagyl) in treating Blastocystis hominis, a potential gut pathogen. Research has shown that Sac B is useful in treating H.Pylori bacteria. H.pylori are bacteria found in the stomach that we associate with stomach ulcers and cancer. Although Sac B does not appear to colonize our gut, research has shown that it can correct imbalances in our microbiota.

4. Escherichia Coli Probiotics

Escherichia Coli (E Coli) is a regular resident of the human gut and one of the most commonly found bacterial species in stool testing. We associate specific E.coli with food

poisoning, and therefore it is often seen as the "bad guy." This idea is accurate for some species of E.coli, like E. Coli O157:H7. However, E.coli appears to only become damaging after changing, definitely after acquiring specific genetic material. Some notable clinical trials have been treating diarrhea and IBD using the E.coli probiotic, E.coli Nissle 1917.

Chapter 2

How Probiotics Work

Transient Antimicrobial Agents Probiotics Are Transient Agents

Contrary to popular opinion, most probiotics do not appear to colonize your gut. Probiotics are more transient, meaning they are more like tourists than residents and pass through the gut.

In her article in the journal *Nature*, Catherine A. Lozupone states,

"The gut microbiota generally shows colonization resistance, in which the nature microbiota prohibits harmful and potentially beneficial microbes from establishing."

We find further support that probiotics are transient in a 2008 review paper. In the paper, the author states that "all probiotics appear to have a short life span within the gut and need repeated dosing to keep a constant level...it is apparent that after a week after stopping oral intake, they largely disappear from the stool." Further evidence that probiotics do not colonize comes from studies using "heat-killed" probiotics. If a heat-killed probiotic shows benefit, it supports the thinking that the benefits from probiotics are not due to colonization. Many studies show heat-killed probiotics have benefits, including treating diarrhea, improving IBS symptoms, treating skin allergies, and decreasing the incidence of colds in older people.

Probiotics As Antimicrobial Agents

So, probiotics are transient but still have beneficial effects. Research has shown that Probiotics are an effective treatment for SIBO. We also have evidence showing that probiotics are as effective as anti-fungal drugs in treating fungi and are as effective as anti-parasitic drugs in treating parasites. So, probiotics are antimicrobial. The antimicrobial effect can help to reduce bacterial overgrowths and clear fungus and parasite infections.

Probiotics Work Better In The Small Intestine

In your intestines, the more densely populated with bacteria, the harder it is for the probiotics to affect that environment. As a result, probiotics may exert more of an effect on the small intestine than the more highly populated large intestine.

Chapter 3

How To Use Probiotics

In Chapter 1, we covered the four main types of probiotics and their benefits. In chapter two, we covered how probiotics work to achieve their benefits. In this chapter, we will explain:

- What to use in a probiotics protocol
- How to interpret recommended dosages
- What to expect when using probiotics
- How to understand and manage reactions
- How to personalize a probiotics protocol
- What to use in a probiotics protocol

The following protocol is the one I typically recommend in my practice. The protocol uses three of the four probiotic types we described in chapter one.

1. Lactobacillus/Bifidobacterium (LactoBifido) blend

The LactoBifido blend is the most studied, and research has shown it to help various conditions. I recommend Probiotic Supreme by Designs for Health (DFH). Take one capsule once to twice daily, preferably on an empty stomach.

2. Saccharomyces Boulardi (Sac B)

Sac B is not a bacteria but a healthy fungus. I recommend FloraMyces by DFH. FloraMyces is a unique freeze-dried strain of non-GMO Sac B. Unlike other SAC blends, FloraMyces is dairy and lactose-free and does not require refrigeration. I recommend taking one capsule twice a day, preferably away from food.

3. A Soil-Based or Spore-Forming Probiotic

My regular soil-based probiotic Prescript Assist is unavailable at the time of writing. Currently, I recommend a spore-forming probiotic called Megasporebiotic by Microbiome Labs. I recommend one capsule, two times per day, with food.

How to interpret recommended dosages

Anytime you see a dose range of one or two capsules, starting at the lowest dose is best. After a few days on this dose, observe how you feel. If you are feeling great, then stay at this dose. If you still need improvement, then increase to the full amount.

Following these steps will help you find the minimal dose, which should always be the goal. Remember, more is not always better.

What To Expect When Using Probiotics

After a couple of days or weeks on these probiotics, you may experience an improvement in how you are feeling.

What exactly will you notice?

As we covered in chapter one, probiotics can help various conditions and symptoms. The improvements you experience will depend on your current symptoms. You may experience less bloating, clearer thinking, improved stool consistency and regularity, clearer skin or less joint pain. Several things may improve (not limited to this list), and if the improvement coincides after taking the probiotics, the probiotics are likely the reason for the change.

How to understand and manage reactions

There are two types of responses you may experience after taking probiotics, die-off and allergic reactions.

Die-Off Reactions

As we discussed in Chapter 2, probiotics can cause antibacterial effects. When bacteria die, they can cause what is known as die-off reactions in the body. These die-off reactions take the form of symptoms.

These symptoms may include feeling unwell, tiredness, headaches, irritability, digestive upset, and flu-like symptoms. If you experience die-off symptoms, they should last no more than a few days to a week. These symptoms are not harmful, so you should not be alarmed. If the symptoms become a concern, you can always reduce your dosage to lessen the die-off reactions.

Allergic Reactions

If your symptoms do not go away after a week, they might not be due to die-off reactions. In such cases, you may be experiencing an allergic reaction to an ingredient in the

probiotics. Symptoms of an allergic response typically include itching, swelling and redness, but also bloating. If you have this experience, stop all the products and experiment with trying one probiotic at a time to see if you can pinpoint the source of the reaction.

How to personalize a probiotics protocol

Should you take your probiotics with food?

It does not matter. I have expressed what might be an ideal recommendation for each probiotic, but I often instruct patients to disregard these instructions and take them at the most convenient time. Will taking more probiotics improve or speed up the process?

As I mentioned before, doing more is not always better. You should be aware that treating symptoms is a process. By giving your body probiotics, you are aiding your body's innate ability to heal itself. The probiotics bring balance back to your microbiota. This effect will start the healing process. Taking too many probiotics will overwhelm your body if you try too hard.

Chapter 4

Closing Thoughts

What have we learnt?

Probiotics are not all the same. There are four main types. All these types have benefits for improving both gastrointestinal and symptoms outside the gut. Contrary to popular belief, probiotics do not colonize but are transient and have antimicrobial effects that help rebalance gut bacteria. Probiotics are safe, but you should be mindful of reactions and not do too much.

When to use probiotics?

Probiotics are a safe and effective first-line treatment for gastrointestinal symptoms that you feel might be related to the gut.

What should I do if probiotics do not help?

If the probiotics help you, you should see significant improvement in your symptoms within two to three weeks. If you notice no change, you probably have an underlying cause requiring a more in-depth and extensive intervention.

I am here to help.

If you want assistance uncovering your symptoms' cause, I am here to help.

In my over 20 years of clinical practice, I have helped thousands of people like you identify and resolve the root cause of their chronic health conditions and symptoms.

If you want to learn more, I offer a FREE **Functional Medicine Discovery Session**, in person or via video, to chat about your issues and whether I can help.

Alternatively, you can learn more about my work by visiting my website at: **www.dominickhussey.ca**.