

Probiotics in Inflammatory Bowel Disease (IBD)

Use this resource to learn about what probiotics are, what probiotics are commonly used for Inflammatory Bowel Disease, and how to know which probiotics to recommend to your patients.

<i>Probiotics</i>	
What are probiotics?	<ul style="list-style-type: none"> • According to Hill et al. (2014), probiotics are live microorganisms that, when administered in adequate amounts, confer a health benefit on the host. • There are several microorganisms, however the most common strains are: <ul style="list-style-type: none"> ○ Lactic acid bacilli (i.e., Lactobacillus and Bifidobacterium) ○ Clostridium butyricum ○ Streptococcus salivarius ○ Saccharomyces boulardii (strain of yeast) ○ Nonpathogenic strain of Escherichia coli (i.e., E. coli Nissle 1917)
What do probiotics do?	<ul style="list-style-type: none"> • The overall goal of probiotics is to improve the balance of good versus bad bacteria, which can aid digestion, promote a healthier immune system, and produce vitamins (National Center for Complementary and Integrative Health, 2019). • When probiotics are consumed, they become part of the community of bacteria in the digestive system (National Center for Complementary and Integrative Health, 2019). • The exact mechanism of action and how probiotics are beneficial is not fully understood. According to Sartor et al. (2022), the four main benefits include the following: <ul style="list-style-type: none"> ○ Suppression of growth of pathogenic bacteria ○ Strengthening of the intestinal barrier ○ Modification of the immune system to suppress proinflammatory cells ○ Reduction of pain perception in the gut
Where do probiotics come from?	<ul style="list-style-type: none"> • Most commercially available probiotics are derived from food products, primarily cultured milk products (Sartor et al., 2022). • Dairy products: look for the words “live and active cultures” on the label (Harvard Health, 2020). However, it is important to note that while yogurt is commonly recommended as a source of probiotics, not all bacteria in yogurt survive well in a highly acidic environment (Sartor et al., 2022). • Fermented foods: kefir, kombucha, sauerkraut, pickles, miso, tempeh, kimchi, sourdough bread (Harvard Health 2020). The live cultures within fermented foods are significantly more concentrated than yogurt (Sartor et al., 2022). <p>Dietary probiotic supplements (see list below)</p>
<i>Prebiotics</i>	
What are prebiotics?	<ul style="list-style-type: none"> • Indigestible nutrients that are broken down by gut microbiota; they feed the intestinal microbiota providing health benefits (Davani-Davari et al., 2019). • Examples include inulin, lactulose, asparagus, onions, bananas, honey, garlic, wheat, soybean, peas, tomato, seaweeds (Davani-Davari et al., 2019).

Synbiotics	
What are synbiotics?	<ul style="list-style-type: none"> • Products that contain both prebiotics and probiotics
Commonly Used Probiotics for IBD	
	<ul style="list-style-type: none"> • Visbiome®/VSL #3 ® <ul style="list-style-type: none"> *There are 2 commercially available versions of this product. Both originally were marketed as VSL3. The original version of VSL3 (developed by Sigma-Tau Healthscience/Alfasigma) was used in original studies showing efficacy in management of colitis. Its formulation was later changed in 2016 and continues to be marketed as VSL3 (Italian version). Although marketed to be the same, U.S court action determined that promotion to be false. This prompted the development of the US version (Visbiome®) which contains the original formulation (Palumbo et al., 2019). ○ Italian Version (VSL3®) contains: Streptococcus thermophilus BT01; bifidobacteria (B. breve BB02, B. longum BL03, B. infantis B104); lactobacilli (L. acidophilus BA05, L. plantarum BP06, L. paracasei BP07, L. debrueckii subsp. bulgaricus BD08) ○ U.S. Version (Visbiome®) contains: Streptococcus thermophilus DSM24731; bifidobacterial (B. longum DSM24736, B. breve DSM24732, B. infantis DSM24737); lactobacilli (L. acidophilus DSM24735, L. plantarum DSM24730, L. paracasei DSM24733, L. debrueckii subsp. bulgaricus DSM24734). • Mutaflor® (E.coli Nissle 1917) (Scaldaferri, 2016). • Align® (B. infantis) • Culturelle® (L. rhamnosus GG) • Florastor® (S. boulardii)
How do I know Which Probiotics To Recommend For My Patients?	
Ulcerative Colitis	<ul style="list-style-type: none"> • While it is understood that there may be potential for various probiotics to aid in the management of ulcerative colitis, there is not yet convincing data. E. coli Nissle 1917, Lactobacillus GG, and symbiotic (B. longum) have shown modest improvements in disease state and may be reasonable to try, in conjunction with standard medical therapies. Lactobacillus reuteri was shown in a small study to lower clinical and endoscopic disease activity in pediatric patients (Sartor et al., 2022).
Crohn's Disease	<ul style="list-style-type: none"> • The data is mixed when probiotics have been studied in patients with Crohn's disease. In addition, studies have not proven clinical effectiveness of probiotics for induction or maintenance of remission (Sator et al., 2022)
Pouchitis	<ul style="list-style-type: none"> • Several small studies suggest VSL #3 (original Italian formulation containing multiple strains of <i>Lactobacillus</i>, <i>Bifidobacterium</i>, and <i>Streptococcus</i>) may be helpful in the prevention of recurrent pouchitis (Sartor et al., 2022). • Several studies have demonstrated the potential for improvement of inflammation associated with inflammatory bowel disease, especially pouchitis (Sartor et al., 2022).

References

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