Proceedings of the Nutrition Society (2023), **82 (OCE5)**, E366 doi:10.1017/S0029665123004652

Summer Conference 2023, 3–6 July 2023, Nutrition at key stages of the lifecycle

The Effect of Probiotics on the treatment of irritable bowel syndrome (IBS) in human adults: a systematic review

B. Ghuloom, K. Lane and F. Abdulmannan
School of Sport and Exercise Sciences, Liverpool John Moores University, Liverpool, UK

The etiology of irritable bowel syndrome (IBS) involves interactions between gut-brain axis, changes in serologic biomarkers, enhanced inflammatory indicators, gut microbiome disruption, and genetic and environmental factors[1,2]. One of the most important factors in the development of IBS is a change in the gut's microbial balance, which can be influenced by diet[3]. Pharmacological approaches and novel drugs have been used to manage IBS, but probiotics, which are live microorganisms, have also gained attention in recent years[4]. This systematic review aims to assess the existing evidence on the effectiveness of probiotics as a treatment option for IBS in adult patients and provide future recommendations for researchers.

Relevant studies were identified through electronic database searches, including PubMed, ScienceDirect, and Cochrane Library. The search terms used included 'Irritable bowel syndrome, OR 'IBS', OR 'colitis', OR 'mucous colitis', OR ' spastic colon' OR 'nervous colon' OR 'spastic bowel' OR 'irritable colon' OR '1BS adults' OR 'IBS patients' [title/abstract] AND 'Probiotics' OR "Lactobacillus' OR 'Bifidobacterium' OR 'Bacillus coagulans' OR 'Streptococcus thermophilus' OR 'Acidophilus' [title/abstract]. The retrieved papers were published in English, between 01/01/2018 to 30/11/2023 and used appropriate quantitative measures of IBS symptoms and severity after adult humans consume probiotics. Papers were extracted and included based on their eligibility criteria: IBS-diagnosed adults (≥18 years).

Out of 69 extracted records, 7 studies met the eligibility criteria. All studies conducted a randomized controlled trial with either probiotics or a placebo as the intervention and were controlled with varying durations, from 2 to 12 weeks. Some studies recruited patients with IBS with diarrhea (IBS-D), while others included patients with other IBS subtypes, such as IBS with constipation (IBS-C), mixed IBS (IBS-M), and unsubtyped IBS (IBS-U). The probiotic strains varied, with some studies using a multi-strain mixture, while others used a single strain. The overall findings suggest that probiotics aided in alleviating IBS symptoms and improving the overall quality of life. Studies with *Bifidobacterium*-based probiotics showed more consistent findings for reducing and managing IBS symptoms than *Lactobacillus*-based probiotics. Probiotics were shown to have the potential to become the primary approach for IBS therapy as pharmaceutical drugs carry more serious side effects, The review also showed that the interventions were well-tolerated by participants and can be incorporated into daily routines.

To conclude, probiotics aid in alleviating IBS symptoms, however, the effect varies depending on the probiotic strain, and the IBS subtype. The effects of probiotics on IBS symptoms may also vary between individuals due to differences in the gut microbiome and the condition's pathophysiology. Future randomised controlled trials should aim to have larger sample sizes, longer study durations, and measure multiple probiotic strains and IBS symptoms to provide more comprehensive and generalizable results.

References

1. Daulatzai MA, (2014) *Neurochem Res* **39**, 624–44.
2. Saito YA, (2011) *Gastroenterol Clin* **40**, 45–67.
3. Bokic T, Storr, M & Schicho R, (2015) *Pharmacology* **96**, 76–85.
4. Lukic J, Chen V, Strahinic, *et al*. (2017) *WRR* **25**, 912–22.