

# Probiotics for the Gut: A Guide to Getting Started



## Dr Jarrod Lee

Gastroenterologist, Mount Elizabeth Novena Hospital

### Jarrood Lee Gastroenterology and Liver Clinic

Mount Elizabeth Novena Specialist Centre

38 Irrawaddy Road #10-58 Singapore 329563

Website: [www.drjarrodlee.com](http://www.drjarrodlee.com)

The concept of probiotics was introduced about 100 years ago, when Nobel laureate Elie Metchnikoff, known as the ‘Father of Probiotics’, proposed that ingesting bacteria could have health benefits for humans and prolong life. In recent years, probiotics have become a multibillion dollar industry, and can be found in many products from yoghurt to granola bars. The world of probiotics is filled with myriad options and long words like *Lactobacillus* and *Bifidobacterium*, and astounding numbers like 10-20 billion CFUs (colony forming units). This article is written as a practical guide to help busy clinicians start navigating this intimidating world of probiotics.

## What are probiotics?

Probiotics are defined as: live micro-organisms that confer a health benefit on the host when administered in adequate amounts<sup>1</sup>. This is differentiated from prebiotics, which are dietary substances that nurture a selected group of micro-organisms in the gut, favouring the growth of beneficial bacteria over harmful ones. Synbiotics are products that contain both probiotics and prebiotics, and thus have both effects.

## What should I prescribe it for?

There is strong evidence that probiotics are effective in a number of digestive disorders. The

more common conditions seen in the community are:

### Treatment of infectious diarrhoea

A Cochrane review of 23 studies (n=1,917) showed that probiotics significantly reduced the duration of diarrhoea by a mean of 30.5 hours<sup>2</sup>. Another meta-analysis in children showed that a similar effect in reducing the duration of diarrhoea in children<sup>3</sup>.

### Prevention of infectious diarrhoea

A meta-analysis of 12 studies (n=4,709) showed a modest decrease in the risk of traveller’s diarrhoea when probiotics are taken, with a relative risk of 0.85<sup>4</sup>.

### Antibiotic associated diarrhoea

A meta-analysis of 19 studies<sup>5</sup> showed that probiotics reduced the risk of antibiotic associated diarrhoea by 52%. The benefit was greatest when the probiotic was started within 72 hours of starting the antibiotic treatment. A meta-analysis of 6 randomised controlled trials in children showed a similar effect in children<sup>6</sup>.

### Irritable Bowel Syndrome (IBS)

A recent systemic review of 19 randomised controlled trials in IBS showed that probiotics were better than placebo, with a number needed to treat of 4<sup>7</sup>. A meta-analysis of 3 randomised controlled trials showed a similar effect in children<sup>8</sup>. Probiotics appear to be particularly useful for abdominal pain, bloating and global improvement of symptoms in IBS patients.

## Are probiotics safe?

Studies suggest that probiotics are safe with few side effects. Flatulence and mild abdominal discomfort have been reported, and are typically mild and self-limited. Long term safety data are limited. Probiotics have no known interactions with medications or other supplements.

There have been rare reports of pathological infection in severely ill or immune-compromised patients, and in children with short gut syndrome. Probiotics should be avoided in these patients. There have been no such reports in healthy patients.

## What probiotic should I use?

*Lactobacillus* and *Bifidobacterium* species have the most evidence for the above digestive disorders, and are the preferred components in probiotics used to treat these conditions. *Saccharomyces boulardii* is a probiotic yeast strain that has also been proven to be beneficial in diarrhoea conditions, and has the potential advantage of having resistance to most antibiotics.

## What dose should I use?

A wide range of dosages have been studied, mostly from 1 to 20 billion CFUs per day. In general, higher dosages of more than 5 billion CFUs per day in children, and 10 billion CFUs per day in adults were associated with better study outcomes for the various clinical conditions. Studies with *Saccharomyces boulardii* use a dose of 250 to 500 mg per day. Although there is no evidence that even higher dosages are unsafe, they may be more expensive and unnecessary.

## Conclusion

The use of probiotics is increasing, and they are becoming widely available. It is important for clinicians to be familiar with the basics of probiotics, so that they may be able to address the concerns of patients about these drugs. From a scientific viewpoint, probiotics are proven to be safe and effective for treating infectious and antibiotic associated diarrhoea. They are also possibly effective for IBS symptoms. When used for these purposes, probiotics can be prescribed using the simple steps outlined in this article.

## References:

1. World Gastroenterology Organization Global Guidelines. Probiotics and prebiotics. October 2011.
2. Allens SJ, Okoko B, Martinez E, Gregorio G, Dans LF. Probiotics for treating infectious diarrhoea. *Cochrane Database of Syst Rev*. 2004;(2)CD003048.
3. Canani RB, Cirillo P, Terrin G, et al. Probiotics for treatment of acute diarrhoea in children: randomised clinical trial of five different preparations. *BMJ*. 2007;335(7615):340.
4. McFarland LV. Meta-analysis of probiotics for the prevention of traveler's diarrhea. *Travel Med Infect Dis*. 2007;5(2):97-105.
5. Sazawal S, Hiremath G, Dhingra U, Malik P, Deb S, Black RE. Efficacy of probiotics in prevention of acute diarrhoea: a meta-analysis of masked, randomised, placebo controlled trials. *Lancet Infect Dis*. 2006;6(6):374-382.
6. Szajewska H, Ruszczyn' ski M, Radzikowski A. Probiotics in the prevention of antibiotic-associated diarrhea in children: a meta-analysis of randomized controlled trials. *J Pediatr*. 2006;149(3):367-372.
7. Moayyedi P, Ford AC, Talley NJ, et al. The efficacy of probiotics in the treatment of irritable bowel syndrome: a systematic review. *Gut* 2010;59:325-32.
8. Horvath A, Dziechciarz P, Szajewska H. Meta-analysis: *Lactobacillus rhamnosus GG* for abdominal pain-related functional gastrointestinal disorders in childhood. *Aliment Pharmacol Ther* 2011;33:1302-1310.