

## Probiotics for Total Health

Miljana Z. Jovandaric\*

Clinic for Gynecology and Obstetrics, Department of Neonatology, Clinical Center of Serbia, Serbia

### \*Corresponding author

Miljana Z. Jovandaric, Clinic for Gynecology and Obstetrics, Clinical Center of Serbia, Department Neonatology, Visegradska 26, Serbia; E-mail: rrebecca080@gmail.com

Submitted: 14 Oct 2016; Accepted: 19 Oct 2016; Published: 22 Oct 2016

### Abstract

*Probiotics are live bacteria and yeasts that are good for your health, especially your digestive system. We usually think of bacteria as something that causes diseases. But your body is full of bacteria, both good and bad. Probiotics are often called “good” or “helpful” bacteria because they help keep your gut healthy. Probiotics are naturally found in your body. You can also find them in some foods and supplements.*

**Keywords:** Probiotics, Health, Safety

### Introduction

Many types of bacteria are classified as probiotics. They all have different benefits, but most come from two groups [1]. Lactobacillus, this may be the most common probiotic. It's the one you'll find in yogurt and other fermented foods. Different strains can help with diarrhea and may help with people who can't digest lactose, the sugar in milk [2]. Bifidobacterium, you can also find it in some dairy products. It may help ease the symptoms of irritable bowel syndrome [3,4].

Probiotics have received renewed attention recently from product manufacturers, research studies, and consumers. The history of probiotics can be traced to the first use of cheese and fermented products that were well known to the Greeks and Romans who recommended their consumption [5]. The fermentation of dairy foods represents one of the oldest techniques for food preservation [6].

The original modern hypothesis of the positive role played by certain bacteria was first introduced by Russian scientist and Nobel laureate Élie Metchnikoff, who in 1907 suggested that it would be possible to modify the gut flora and to replace harmful microbes with useful microbes [7]. Metchnikoff, at that time a professor at the Pasteur Institute in Paris, proposed the hypothesis that the aging process results from the activity of putrefactive (proteolytic) microbes producing toxic substances in the large bowel. Proteolytic bacteria such as clostridia, which are part of the normal gut flora, produce toxic substances including phenols, indols, and ammonia from the digestion of proteins. According to Metchnikoff, these compounds were responsible for what he called “intestinal autointoxication”, which would cause the physical changes associated with old age [8].

Probiotics are under considerable research, as the concept holds promise for human health and well-being, and corresponding commercial opportunities. Protection of consumers requires health claims to be confirmed with sufficient scientific evidence. Overall

scientific demonstration of probiotic effects requires defining a healthy microbiota and interactions between microbiota and host, and the difficulty to characterize probiotic effectiveness in health and disease. Recent developments of high-throughput sequencing technology and the consequent progresses of metagenomics represent a new approach for the future of probiotics research [9].

There's preliminary evidence that some probiotics are helpful in preventing diarrhea caused by infections and antibiotics and in improving symptoms of irritable bowel syndrome, but more needs to be learned. We still don't know which probiotics are helpful and which are not. We also don't know how much of the probiotic people would have to take or who most likely benefit from taking probiotics would. Even for the conditions that have been studied the most, researchers are still working toward finding the answers to these questions [1].

Probiotics are not all alike. For example, if a specific kind of Lactobacillus helps prevent an illness, that doesn't necessarily mean that another kind of Lactobacillus would have the same effect or that any of the Bifidobacterium probiotics would do the same thing [4].

Even for healthy people, there are uncertainties about the safety of probiotics. Because many research studies on probiotics haven't looked closely at safety, there isn't enough information right now to answer some safety questions. Most of our knowledge about safety comes from studies of Lactobacillus and Bifidobacterium; less is known about other probiotics. Information on the long-term safety of probiotics is limited, and safety may differ from one type of probiotic to another. For example, even though a National Center for Complementary and Integrative Health (NCCIH)-funded study showed that a particular kind of Lactobacillus appears safe in healthy adults age 65 and older, this does not mean that all probiotics would necessarily be safe for people in this age group [10].

---

## Conclusion

Probiotics are under considerable research, as the concept holds promise for human health and well-being, and corresponding commercial opportunities. Protection of consumers requires health claims to be confirmed with sufficient scientific evidence. Overall scientific demonstration of probiotic effects requires defining a healthy microbiota and interactions between microbiota and host, and the difficulty to characterize probiotic effectiveness in health and disease.

## References

1. Rolfe RD (2000) The role of probiotic cultures in the control of gastrointestinal health. *J Nutr* 130: 396S-402S.
2. Hatakka K, Savilahti E, Pönkä A, Meurman JH, Poussa T, et al. (2001) Effect of long term consumption of probiotic milk on infections in children attending day care centres: double blind, randomised trial. *BMJ* 322: 1327.
3. Anderson JW, Gilliland SE (1999) Effect of fermented milk (yogurt) containing *Lactobacillus acidophilus* L1 on serum cholesterol in hypercholesterolemia in humans. *J Am Coll Nutr* 18: 43-50.
4. Hove H, Nørgaard H, Mortensen PB (1999) Lactic acid bacteria and the human gastrointestinal tract. *Eur J Clin Nutr* 53: 339-350.
5. Gismondo MR, Drago L, Lombardi A (1999) Review of probiotics available to modify gastrointestinal flora. *Int J Antimicrob Agents* 12: 287-292.
6. Di Cerbo A, Palmieri B (2015) Review: The market of probiotics. *Pak J Pharm Sci* 28: 2199-2206.
7. Caramia G (2004) [Probiotics: from Metchnikoff to the current preventive and therapeutic possibilities]. *Pediatr Med Chir* 26: 19-33.
8. Bsted AC, Logan AC, Selhub EM (2013) Intestinal microbiota, probiotics and mental health: from Metchnikoff to modern advances: Part I - autointoxication revisited. *Gut Pathog* 18: 5:5.
9. Gueimonde M, Collado MC (2012) Metagenomics and probiotics. *Clin Microbiol Infect* 18 Suppl 4: 32-34.
10. Sanders ME, Akkermans LM, Haller D, Hammerman C, Heimbach J, et al. (2010) Safety assessment of probiotics for human use. *Gut Microbes* 1: 64-85.

**Copyright:** ©2016 Jovandarić MZ. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.