

The Prebiotics and Postbiotics

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Received: May 22, 2019; **Published:** July 01, 2019

Keywords: *Prebiotic; Postbiotic; Fiber; SCFA*

Prebiotic fiber is a non-digestible part of foods like bananas, onions and garlic, the skin of apples, chicory root, beans, and many others.

When passes through the small intestine it is not digested but fermented when it reaches the large colon.

This fermentation process feeds are beneficial to the bacteria in colon including probiotic bacteria, it helps to increase the number of desirable bacteria in the gut which are associated with better health and reduced disease risk.

Postbiotics is a term that refers to compounds that are produced by the metabolic activity of probiotic bacteria on prebiotics. The probiotic-produce postbiotic compounds which play an important role in the regulation and maintaining a healthy microbiome.

Postbiotics are non-viable bacterial products or metabolic byproducts from probiotic microorganisms that have biologic activity in the host.

Synbiotic is a product that contains both probiotics and prebiotics.

The definition of a prebiotic has been modified to 'a substrate that is selectively utilized by host microorganisms conferring a health benefit'.

The appropriate use of the term "prebiotics" requires a more specific definition.

Most current prebiotics are administered orally, some are administrated locally.

Manipulation of the intestinal microbiota with prebiotics is possible to prevent or treat certain diseases like obesity and other inflammatory status.

However, for the time being, little is known about the ability of prebiotics to specifically modify gut microbiota in children with such status.

The effects of prebiotics on body composition, markers of inflammation, and composition of the intestinal microbiota in children has been recognized.

Major advances have been made in the field of prebiotics, which was influenced by the progress made in the role of the microbiota in health and disease.

The probiotics and/or prebiotics with documented efficacy and safety is proven to be effective in well-designed trials in many gastrointestinal diseases.

Health effects of prebiotics are evolving, it includes many benefits to the gastrointestinal tract; inhibition of pathogens, immune stimulation, reduction in blood lipid levels, effects upon insulin resistance, mental health; metabolites that influence brain function, energy and cognition and bone; mineral bioavailability. Intake of prebiotics has been linked to many powerful benefits, including; lower risk for cardiovascular disease, healthier cholesterol levels, better gut health, improved digestion, lower stress response, better hormonal balance, higher immune function, lower risk for obesity and weight gain, lower inflammation and autoimmune reaction.

Prebiotic targets extend beyond stimulation of *Bifidobacteria* and *Lactobacilli* and recognizes that health benefits can derive from effects on other beneficial taxa including *Roseburia*, *Eubacterium* or *Faecalibacterium* spp. Prebiotics rely upon microbial metabolism and require selective utilized by live host microorganisms, in a manner that sustains, improves or restores host health through its microbial flora.

Since prebiotic cause changes to the host microbial ecosystem. Prebiotics should be non-digested by the host but utilized by the microbiota. Both prebiotic safety and use at appropriate dose is necessary.

An appropriate dose must be sufficient to generate a prebiotic effect, but not too high so not to induce unwanted or adverse effects such as excessive gas formation or non-selective utilization. The 'adequate' dose will vary depending upon the microbial ecosystem and associated metabolic effects. Demonstration of health benefits in well-controlled studies in the target host is required [1-3].

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Volume 6 Issue 7 July 2019

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