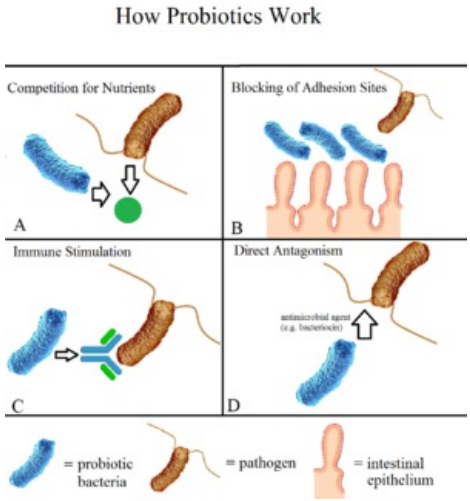
# Probiotics, prebiotics, synbiotics

Substances that have a beneficial effect on the health of the human body.

## Probiotics



The mechanism of functioning of probiotics

Probiotics are defined as living microorganisms that, when administered in adequate amounts, contribute to improving the health of the host. **Bacteria** that naturally inhabit the human digestive tract are usually used as probiotic cultures.

The most used are bacteria of the genera *Lactobacillus* and *Bifidobacterium*. Probiotic microorganisms are lactic acid bacteria, mainly the genera *Lactobacillus*, *Streptococcus*, *Lactococcus,* and *Enterococcus*. The beneficial effects of probiotic bacteria include **allergy control**, **immunostimulatory effects**, colorectal cancer prevention, **constipation,** and prevention and supportive care of inflammatory bowel disease and diarrhea.

Today, these cultures are commonly added to fermented dairy products (mainly bifidobacteria and *Lactobacillus casei*), cheeses (bifidobacteria, lactobacilli, propionic bacteria), fermented meat products (various dairy bacteria), but also to biscuit and wafer fillings (*Enterococcus faecium*). Healthy digestive bacteria belong mainly to the group of so-called **lactic acid bacteria**.

## Prebiotics

Prebiotics are indigestible oligosaccharides that stimulate the growth or activity of a particular bacterium or group of bacteria that have a positive effect on human health. *Inulin*, *oligofructose*, *galactooligosaccharides* and *lactulose* meet all the criteria for **prebiotics**. The target microorganisms for prebiotics are mainly **bifidobacteria**.

Prebiotics have many functions. They are a source of ballast, indigestible, and non-metabolizable substances, adjust the viscosity of the digestion, speed up the digestive tract passage, reduce the likelihood of parasites, temporarily bind food components (lipids, sugars, bile acids, cations, toxic substanses), increase fullness, prevent constipation, reduce **glycation curve** (reduction and prevention of *hyperglycemia* and *hyperinsulinemia*, i.e. type II diabetes), support the growth of probiotics and thus positively affect the health of the host and many others.

Fermentation of prebiotics by probiotics in the large intestine produces *acetic acid*, *butyric acid*, *propionic* acid, etc. This lowers the pH and suppresses the growth of pathogenic and putrefactive bacteria, the formation of intestinal mucosa (mucus) is supported. According to some studies, this **stimulates the immune system against tumors**.

## Synbiotics

There are combinations of probiotics and prebiotics, and the so-called **synergistic effect** of these two components is expected. An example of a synbiotic food is a sour milk product (yogurt) containing bifidobacteria and oligofructose.

## Links

### Related articles

- Microorganisms in food
- Nutrition recommendations

### References


- KOKEŠOVÁ, Alena. Imunomodulační účinky probiotik v klinické praxi. *Pediatrie pro praxi* [online]. 2009, y. 10(3), p. 2, Available from <http://www.solen.cz/artkey/ped-200903-0008_Imunomodulacni_ucinky_probiotik_v_klinicke_praxi.php>.


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