- Digestion

What are postbiotics and how can they improve gut health?

Otago Daily Times · 15 Feb 2023 · 14

MANY are familiar with probiotics, such as certain yoghurts and fermented foods, that are full of ‘‘good’’ bacteria that can keep the gut healthy.

You might even have heard of prebiotics, foods rich in complex carbohydrates (dietary fibre) that help foster good bacteria in the large intestine. Popular prebiotic foods include oats, nuts and legumes.

But what about postbiotics? What are they and how do they affect gut health?

Postbiotics are essentially the byproducts of gut microbiota. In other words, your body produces postbiotics after digesting prebiotic and probiotic foods.

Examples include the shortchain fatty acids butyric acid (or butyrate), acetic acid (or acetate) and propionic acid (or propionate).

These molecules are produced when good probiotic bacteria break down dietary fibre.

These postbiotic molecules are important for your gut microbiota. Healthy probiotic bacteria thrive on these shortchain fatty acids in our gut.

Some postbiotics can help suppress ‘‘bad’’ bacteria. For example, probiotic bacteria (such as Lactococcus lactis) produce special chemicals called bacteriocins that can prevent the colonisation of pathogens such as E. coli in the gut.

Microbial fermentation is where microbes in the gut break down complex carbohydrates.

Microbial fermentation of plantbased diets (which are rich in polyphenols), in particular, leads to the production of the postbiotic phenylacetic acid.

This postbiotic can reduce the growth of harmful pathogens.

Not all postbiotics are heroes. One type is bile acids, which are produced when we eat too many highfat foods. Bile acids have been linked to inflammation and colon cancer. Staying on a highprotein, lowcarbohydrate diet for the long term often means people do not eat enough fibre, which is linked to a higher risk of colon cancer.

A recent review found shortchain fatty acids — particularly butyrate — have shown promising results against breast and colorectal cancer cells in previous laboratory studies.

One clinical study showed colorectal cancer patients produced significantly lower levels of shortchain fatty acids in their gut than healthy participants.

Another study found the numbers of bacteria that produce shortchain fatty acids were low in premenopausal breast cancer patients.

As reported in epidemiological studies, a fibrerich diet, particularly whole grains, can lower the risk of colorectal cancer, mainly because fibrerich diets lead to the production of shortchain fatty acids in the colon.

Dietary fibre is the key. Women and men should have at least 25g and 30g of fibre, respectively, every day. Few meet these recommendations. The best way to improve the levels of good postbiotics is to consume more vegetables, fruits, legumes, wholegrain bread, nuts and seeds.

Of course, further research is needed. But to ensure good gut health, include plenty of fruits, vegetables and legumes in your diet. — theconversation.com