



The ileostomy & internal pouch

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PROBIOTICS FOR POUCHITIS

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Probiotics are products containing beneficial bacteria. There is growing evidence that they can help prevent the development of pouchitis (inflammation of the lining of the internal pouch).

The symptoms of pouchitis can include: crampy abdominal pain, fever, urgency, faecal incontinence, rectal bleeding and diarrhoea. Pouchitis mostly affects people who had ulcerative colitis (UC) prior to the formation of an internal pouch. Studies show a range of between 15% and 53% of former UC patients with a pouch who have experienced at least one episode of pouchitis. (The wide range is probably explained by differing diagnosis criteria). The risk of developing pouchitis is highest in the first six months after completion of the pouch operation. People who had sclerosing cholangitis or extraintestinal manifestations in addition to UC have a higher chance of developing pouchitis.

The inflammation of the internal pouch is believed to be associated with the high numbers of bacteria found in an internal pouch. In most cases, pouchitis can be treated easily by a short course of antibiotics. About 10% of those who experience pouchitis will have long-term inflammation that requires continuing medication, including anti-inflammatory drugs.

Evidence is growing that the beneficial bacteria in probiotics can help to reduce the severity of difficult-to-treat pouchitis, as well as prolong the period of remission for those with intermittent pouchitis. Most of the research has used a probiotic called VSL#3, which contains eight types of beneficial bacteria as a freeze-dried powder. The bacteria is in a form of 'suspended animation' and they become active again when added to water. In a single sachet of VSL#3 there are 450 billion beneficial bacteria.

Several controlled trials have shown good effect against pouchitis. For example, 36 people with persistent pouchitis were brought into remission by two types of antibiotic, and then given VSL#3 or a placebo (blank treatment) for one year. At the end of the year, 85% of those receiving VSL#3 were still in remission compared with only 6% of those receiving the placebo.

The idea of consuming bacteria as a treatment can sound peculiar. Perhaps this is because we normally think of bacteria as being harmful, as in the TV adverts for anti-bacterial kitchen and toilet products. In fact, the vast majority of bacteria are neither particularly harmful nor beneficial to humans. There are, however, some bacteria that cause disease and some bacteria that help protect against disease.

The concept of using bacteria to counteract disease-causing bacteria is about 100 years old. A Russian scientist and Nobel Prize winner, Elie Metchnikoff, developed the concept while working at the Pasteur Institute in Paris. Metchnikoff believed that putrefactive bacteria (those that ferment proteins) produce poisons in the colon which cause illness.

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He also believed that beneficial bacteria in fermented milks counteracted the putrefactive bacteria and made the colon safe.

The consumption of yoghurts and other fermented milks became temporarily fashionable because of Metchnikoff's views, but gradually lost favour within the medical profession. Antibiotics were proving so effective against infectious disease, there seemed little point in considering beneficial bacteria.

Towards the end of the twentieth century, two developments helped to revive the concept of beneficial bacteria (now called probiotics). Firstly, the over-use of antibiotics in both farmed animals and in humans meant that the numbers and types of antibiotic-resistant bacteria grew substantially and there were fears that antibiotics would become ineffective. Secondly, new molecular methods of analysing bacteria enabled the gut microflora (billions of bacteria residing in the human intestine) to be better understood. The improved techniques helped to show that the microflora were essential to the continued inflammation in UC and Crohn's disease. It was also discovered that on the mucosa (the lining of the intestine) there were different mixtures of bacteria compared with those in people without bowel disease. In people with UC or Crohn's there are fewer bifidobacteria and lactobacilli, which are types of beneficial bacteria.

Researchers wondered whether, by consuming more of the beneficial bacteria, it would be possible to redress the imbalance and reduce the severity of disease. Studies so far suggest that this is achievable. And the best results have come from treating pouchitis with probiotics.

There are some difficulties with probiotics. Firstly, they are currently not available on the NHS. This is because they are classified as foods or food supplements, rather than drugs, and are not prescribable by doctors. This means that the patient has to pay the full price. A second difficulty is that it is not easy to identify a good product. The best researched probiotic, VSL#3, is not at present readily available in the UK; it has to be imported from the Netherlands. It is also a relatively expensive product. [Details on website: www.vslpharma.com]. Readily-available products in the UK may be of good quality, but they lack research in relation to pouchitis.

A third difficulty is that any beneficial effect from probiotics is temporary. Within a week or so of ceasing to take a probiotic product none of its bacteria remain in the intestine. This is because if they do attach to the gut wall the attachment is temporary.

The main criteria for a good probiotic product are:

- A large number of probiotic bacteria
- Packaged and stored so there is a minimal reduction in numbers of live bacteria from the time of production
- Protection from the effects of stomach acid, either by special coatings or by the use of acid-resistant strains of bacteria
- Fermentable food mixed with the probiotic bacteria to help them live and grow as they travel through the intestine

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- Containing species and strains that can attach themselves to the lining of the colon, to enable them to reproduce more easily and have a greater effect
- Containing species and strains for which there is some scientific evidence of health benefit
- A mixture of probiotic species, rather than just one species, to increase the chances that at least one will be very effective.

Information about these matters may be found on the product labels and literature, on the company website and helpline, and occasionally in consumer research reported in the media.

Probiotics can be bought in supermarkets (mostly as live yoghurts and fermented milk drinks, but also as fruit drinks). They are also available in freeze-dried form in capsules, powders or tablets, from health food stores and vitamin mail order companies, as well as from nutritionists and related therapists.

The bacteria in probiotics usually have a very good safety profile, but no bacterium is completely safe. In people with very weak immune systems there is an increased risk, even if very small, of developing an infection. It is therefore advisable to discuss your interest in probiotics with your doctor and seek his or her advice.

Here are some tips to maximise the potential of probiotics:

- Take the probiotic with a main meal as this is the time when the stomach is least acidic. A higher proportion of the bacteria should survive passage through the stomach into the small intestine.
- The best time to start taking probiotics is immediately after completing a course of antibiotics. The antibiotics will kill a lot of the gut bacteria and there is greater scope for the probiotic bacteria to make an impact when the resident bacteria are depleted.
- Try a particular product for at least a month (preferably three months) and keep a diary of your symptoms and bowel habit. Try also to keep other changes in your life to a minimum. This will make it easier to judge whether the probiotics have been of any benefit. This is especially true if your pouchitis comes and goes, when it can be difficult to know whether remission of inflammation is just a routine fluctuation or caused by the beneficial bacteria.

Probiotics are concerned with adding desirable bacteria to the intestine. Another way of increasing the numbers of beneficial bacteria is to feed the beneficial bacteria already living in your intestine. This is achieved by consuming types of soluble dietary fibre called *prebiotics*.

Research on prebiotics shows that they are very good at increasing the numbers of bifidobacteria. There is limited research on UC and pouchitis. One study involving 102 people with UC found the prebiotic was as effective as the anti-inflammatory drug mesalazine in keeping UC from relapsing over a 12-month period. Another study involving 24 people with pouchitis found the inflammation was reduced while taking a prebiotic.

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The best known prebiotic is fructo-oligosaccharide (FOS) and this can be obtained from health food stores and mail order vitamin companies. It is available as a white powder or as a slow-flowing liquid. It has a slightly sweet taste and can be added to food in a palatable way.

FOS is obtained from the root of the chicory plant. It adds almost no calories to the diet, and arrives in the colon (or internal pouch) unaffected by digestive enzymes. It acts as fermentable food for the bacteria, particularly the desirable bifidobacteria, which are very efficient at fermenting FOS. The bifidobacteria grow in numbers as a consequence. The one difficulty with FOS is that it needs to be introduced gradually into the diet otherwise a lot of gas may be produced.

New and improved probiotic and prebiotic products are appearing on the market and a major new route is opening up to help reduce the very unpleasant symptoms of pouchitis.

Peter Cartwright is the author of *Probiotics for Crohn's and Colitis*, available from: Prentice Publishing, PO Box 1704, Ilford, Essex IG5 0WN. Price £11.99p incl. p & p. Further details: www.prentice-publishing.co.uk

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