

# Banana plantain fibers could treat Crohn's disease

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Crohn's is a condition that affects one in 800 people in the UK and causes chronic intestinal inflammation, leading to pain, bleeding and diarrhoea. Researchers are working with biotechnology company, Provexis, to test a new plantain based food product that could treat patients with the disease.

Scientists have previously shown that people with Crohn's disease have increased numbers of a 'sticky' type of *E. coli* and weakened ability to fight off invading [intestinal bacteria](#). The team investigated whether dietary agents could influence *E. coli* entering the lining of the gut.

The sticky *E. coli* are capable of penetrating the gut wall via special cells, called M-cells that act as 'gatekeepers' to the [lymphatic system](#). In patients with Crohn's disease this leads to [chronic inflammation](#) in the gut. Scientists found that plantain soluble fibres prevented the uptake and transport of *E. coli* across M.cells. They compared these results with tests on polysorbate-80 - a fat emulsifier used in processed food to bind ingredients together. The tests revealed that polysorbate had the opposite effect to plantain fibres, and encouraged the movement of bacteria through the cells.

Scientists are now conducting clinical trials to test whether a medical food containing plantain fibres could keep Crohn's patients in remission.

University of Liverpool Professor, Jon Rhodes, part of the Liverpool Biomedical Research Centre (BRC), said: "[Crohn's disease](#) affects

people from all over the world, but it is much more prevalent in developed countries, where a diet of low fibre and processed foods is common. There has been a rapid increase in incidence of the disease in Japan, for example, which now has more of a western processed food diet. Dietary factors and the increased numbers of *E. coli* in the intestine of Crohn's patients suggested to us that there could be a link between the food that we eat and the transportation of bacteria in the body."

Dr Barry Campbell, from the University's Institute of Translational Medicine, added: "This research shows that different dietary components can have powerful effects on the movement of bacteria through the bowel. We have known for some time the general health benefits of eating plantain and broccoli, which are both high in vitamins and minerals, but until now we have not understood how they can boost the body's natural defences against infection common in Crohn's patients. Our work suggests that it might be important for patients with this condition to eat healthily and limit their intake of processed foods."

Peter Laing, Head of Research and Development, Provexis, said: "In partnership with the BRC, we are hopeful that this new medical food, containing soluble plantain fibres, could help halt the progression of the disease and prevent it from returning."

The research, funded by the Wellcome Trust and the National Institute for Health Research, is published in *Gut*.

Provided by University of Liverpool

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