

Gut bacteria potential key to IBD and colon cancer prevention

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Researchers have isolated five strains of gut bacteria that could pave the way for new inflammatory bowel disease treatments and potentially help prevent some forms of bowel cancer.

The study by University of Queensland and Mater researchers identified gut bacterial strains that suppress inappropriate gut inflammation and debilitating [inflammatory bowel disease](#) (IBD) symptoms.

IBD is a chronic condition characterized by relapsing gut inflammation believed to be caused by an abnormal gut bacterial composition which produces an [immune response](#) in genetically susceptible people resulting in [severe symptoms](#).

University of Queensland researcher and Inflammatory Bowel Disease Research Group Leader, Associate Professor Jake Begun, said his team isolated bacteria found in the healthy gut and identified several species that produced a range of anti-inflammatory substances.

"While the [gut microbiome](#) is made up of trillions of bacteria that have co-evolved with humans over time, our lab tests identified five strains that were able to suppress inflammation in blood and tissue samples from IBD patients," Dr. Begun said.

"Furthermore, one of these healthy gut bacterial strains produced anti-inflammatory substances that were able to reduce disease severity in a pre-clinical model by inhibiting one of the master molecular regulators of inflammation called NF-kB, without causing any [side-effects](#)."

Mater Research and UQ Ph.D. candidate Rabina Giri said the research

found good [bacterial strains](#) inhibited the pro-inflammatory enzyme NF-kB by about half.

"Most importantly, this was enough to suppress inflammation but did not cause any side effects in animal models," she said.

"Our findings could pave the way for the development of therapies for IBD that are based on the natural substances produced by 'good' gut bacteria which may prove to be safer than existing drugs."

More than 100,000 Australians live with IBD which has two predominant subtypes—Crohn's disease and [ulcerative colitis](#).

About one in five people whose disease affects their colon, develops colorectal cancer—which is double the rate in the [general population](#).

Patients are generally treated with potent drugs that suppress the immune system in a bid to relieve symptoms—however these drugs only work for about 50 percent of patients.

Dr. Begun said the research findings were exciting, but it was also important to remember that lifestyle choices could drastically reduce a person's risk of developing IBD and bowel cancer.

"Studies show that diets rich in fiber and low in refined sugar, ultra-processed food, and processed meat can reduce the risk of IBD and bowel cancer," he said.

"Early detection and treatment are associated with the best outcomes in [colorectal cancer](#)—so also be sure to participate in the National Bowel Cancer Screening program after age 50.

"Patients with a family history of bowel cancer, or who are at high risk

of [bowel cancer](#), should discuss screening with their general practitioner."

56-year-old Lyn Savage was diagnosed with colon cancer in October 2021 and underwent treatment at Mater Hospital Brisbane.

Mrs Savage, who struggled with bowel disorders since her teenage years, said the research findings provided hope to patients living with bowel diseases.

"If researchers can find out what's causing bowel disease there's a chance that one day down the track my children or grandchildren won't have to go through what I have experienced over the past decades," she said.

More information: Rabina Giri et al, Secreted NF- κ B suppressive microbial metabolites modulate gut inflammation, *Cell Reports* (2022). DOI: [10.1016/j.celrep.2022.110646](https://doi.org/10.1016/j.celrep.2022.110646)

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