

Dietary fiber is good for you, except when it's not

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People who suffer from inflammatory bowel disease may soon have access to personalized dietary guidelines to keep them feeling well, thanks to new research published in *Gastroenterology* on how dietary

fiber affects the disease.

The research team discovered that certain types of dietary fiber cause an [inflammatory response](#) in some patients, causing symptoms to worsen.

They are now working to develop a [stool test](#) to examine the microbes found in each patient's gut in order to predict who will have the [negative response](#), so they can tailor dietary recommendations and treatment for individual patients.

Approximately 0.7 percent of Canada's population, or [one in 150 people](#), [has IBD](#), including Crohn's disease and [ulcerative colitis](#), and that is predicted to grow to one percent by 2030.

IBD symptoms may include [abdominal pain](#), diarrhea, bloody stools, [weight loss](#), late puberty, and a long-term risk of colorectal cancer. The exact cause is unknown, but some risk factors include genetics, diet, environmental factors and changes in the gut microbes.

"We know there are [health benefits](#) to consuming dietary fibers and they promote good gut health in healthy individuals, but IBD patients quite frequently complain about a sensitivity when they consume dietary fibers," says Heather Armstrong, who started the research as a postdoctoral researcher at the U of A and is now an assistant professor of internal medicine at the University of Manitoba and Canada Research Chair in Integrative Bioscience. "We really wanted to understand the mechanisms behind this."

"By creating this stool test, we are hoping to be able to tell you how to adjust your diet to prevent flares or further worsening," says Eytan Wine, a professor in the U of A's Faculty of Medicine & Dentistry. "It's a dynamic situation so it's possible that a certain food you should avoid now, in a few months you'll be okay to eat that again."

Not all fibers are born equal

Unlike most of the food we eat, fiber is not digested in the small intestine. Tiny bacteria and fungi or "microbiota" in the large intestine or colon produce enzymes to ferment fiber. Chemically, fiber can be a short string of sugars like pectin, which is found in citrus fruit, or a very long and branched structure that is harder to ferment.

The researchers have identified that specific types of fibers found in foods such as artichoke, chicory roots, garlic, asparagus, and bananas, are especially hard to ferment if certain microbes are missing or malfunctioning, as is often the case for IBD patients.

Fiber has a beneficial anti-inflammatory effect in most healthy people and aids with digestion, but the researchers have found that select unfermented fibers actually increases inflammation and worsens symptoms in some IBD patients.

"We want to start uncovering why it is that 20 to 40 percent of patients experience sensitivity," says Armstrong, "while in the other portion of patients these dietary fibers can actually benefit health and protect against the disease and have very positive effects."

Wine and Armstrong both warn that the new [dietary guidelines](#) will not replace drug treatments, but should complement them so patients can avoid flares and get back into remission more quickly when they do experience inflammation.

"I myself have IBD so I often come up with research questions that I personally want answered," says Armstrong. "If we can find a way to reduce diet-related inflammation, we may be able to relieve some of the disease burden and even save some people from progressing to more serious disease."

More information: Heather K. Armstrong et al, Unfermented β -fructan fibers fuel inflammation in select inflammatory bowel disease patients, *Gastroenterology* (2022). [DOI: 10.1053/j.gastro.2022.09.034](https://doi.org/10.1053/j.gastro.2022.09.034)

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