

Study on inflammatory bowel disease in First Nations people adds to understanding of disease

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Inflammatory bowel disease is relatively rare in Canadian First Nations people but common in white people, possibly due to different genetic variants, according to a new study in *CMAJ (Canadian Medical Association Journal)* that helps improve understanding of the mechanisms of the disease.

Inflammatory bowel disease (IBD), a painful chronic immune disease that includes Crohn disease and ulcerative colitis, has a [genetic predisposition](#). Studies in Manitoba in the 1990s found significantly lower prevalence rates of Crohn disease (16/100 000 people) and ulcerative colitis (56/100 000) than non-First Nations people: 209/100 000 people and 176/100 000 people respectively. However, they have higher rates of other autoimmune diseases such as rheumatoid arthritis, [systemic lupus erythematosus](#) and ankylosing spondylitis (the latter is often found with IBD in other populations).

There have yet to be studies on the genetics of IBD in First Nations people, and this study by Canadian researchers helps expand the understanding of the mechanism of IBD.

Researchers from the University of Toronto and Mount Sinai Hospital, Toronto, and the University of Manitoba, Winnipeg, looked at DNA from 340 healthy First Nations people and 285 white participants from Manitoba who did not have any chronic [immune diseases](#) or first-degree

relatives with a chronic immune disease. They focused on 69 different genetic markers for immune regulation called [nucleotide polymorphisms](#) (SNPs) that are associated, or suspected to be linked, with IBD.

"We found substantial [genetic variation](#) between First Nations and white people at loci associated with [inflammatory bowel disease](#)," write Drs. Charles Bernstein, Director of the Inflammatory Bowel Disease Clinical and Research Centre, University of Manitoba and Travis Murdoch, Inflammatory Bowel Disease Group, Mount Sinai Hospital, and coauthors.

They found that First Nations people compared with white people had lower numbers of genetic variants involved in recognition of bacteria, which may impact how they respond to bacteria. A current favoured hypothesis as to the cause of IBD is that the bowel is reacting against bacteria present within the bowel lumen.

"There is a paucity of research chronicling the genetics of First Nations people in Canada, particularly in relation to immune-mediated inflammatory diseases," write the authors. "However, the unique susceptibility and protection patterns in this population for complex diseases...make studying the genetics of First Nations people potentially insightful."

Understanding which gene mutations are absent in groups who do not get a certain disease can help underscore which gene mutations may be the most relevant in the groups who do get the disease.

More information: www.cmaj.ca/lookup/doi/10.1503/cmaj.110613

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