How our DNA may prevent bowel cancer

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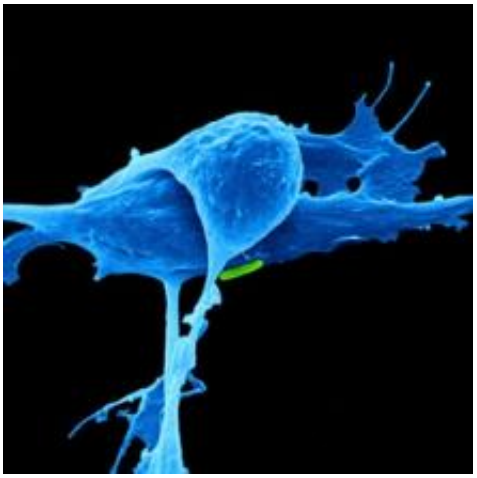

A new study published in the prestigious *Journal of the American Medical Association* (*JAMA*) suggests the link between aspirin and colon cancer prevention may depend on a person's individual genetics.

The link between taking aspirin, and similar medications called non-steroidal anti-inflammatory drugs (or NSAIDS), and bowel (colorectal) cancer prevention is well established.

However, the mechanisms behind the protective effect have not been understood and it is not known why some people appear to benefit while others do not.

Conducted by investigators from four countries, including Professors Mark Jenkins and John Hopper from the University of Melbourne, the findings suggest this protection differs according to variations in DNA.

"We've known for a long time that aspirin lowers the risk of bowel cancer, but we also know that not everyone gets the same degree of protection," said Professor Mark Jenkins, a co-author of the paper and Director of the Centre for Epidemiology and Biostatistics, School of Population and Global Health.

"The aim of this study was to investigate if genetic variation can be used to determine who will benefit from taking aspirin and who will not," he said.

For the study, Professors Jenkins, Hopper and collaborators analysed the combined data from ten large studies conducted in Australia, USA, Canada and Germany.

They compared genetic and lifestyle data from 8,624 people who developed bowel cancer with that of 8,553 people who did not.

An important component of this data included 1,085 participants from Australia who enrolled in the Australasian Colorectal Cancer Family Study.

"This study confirmed that for most people, taking regular aspirin and NSAIDs lowered their risk of bowel cancer, but it also showed that the benefit from taking these medicines was not the same for everyone, and one of the differences was in their DNA" said Professor Jenkins.

"While most people benefit from aspirin, there was DNA evidence that about 1 in 25 people do not, and in fact may increase their risk of bowel cancer if they take aspirin," Professor Jenkins said.

"While these results are very promising, they do need to be validated in independent studies before they can be used to determine who should and should not take aspirin to prevent bowel cancer," cautioned Professor Jenkins.

Provided by University of Melbourne