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Gene offers bowel cancer 'shield'



Bowel cancer is a common form of the disease

A gene known to shield the body from harmful chemicals may also protect against bowel cancer, a study suggests.

Dundee scientists found that removing a single gene from mice predisposed to cancers of the small intestine led to a 50-fold increase in tumours.

The rise in adenomas - pre-cancerous growths - appeared to be linked to increased inflammation of the bowel, the study in the journal PNAS reported.

The GSTP gene has previously been linked to a reduction in lung tumours.

Several studies have shown it appears to provide protection to both the lungs and the skin against cancerous growths. But this latest research from the University of Dundee suggests in the bowel it may work in another way.

Specifically it found that there was more inflammation in the small intestines of mice who had the GSTP gene removed.

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Bowel Cancer UK

Inflammation has already been associated with the risk of developing polyps - some types of which may go on to become cancerous, like adenomas - and it may be here that the gene plays a protective role.

Doctors already know of two genetic conditions which increase the risk of developing bowel cancer: FAP, or familial adenomatous polyposis, and HNPCC, which stands for hereditary

non-polyposis colorectal cancer.

These conditions are however only responsible for about one in 20 cases of bowel cancer.

Inflammatory responses

The findings do not have any immediate clinical application, but experts note studies have suggested that certain types of food such as broccoli may boost GSTP levels.

"If this can be confirmed in humans, it could suggest another way of reducing the risk of bowel cancer," said Dr Lesley Walker, director of cancer information at Cancer Research UK, which funded the research.

Dr Rob Glynne Jones, chief medical adviser at Bowel Cancer UK welcomed the latest research.

He said: "We are beginning to realise that inflammatory responses are very important - both in terms of a predisposition to cancer but also how you respond to treatment.

"We are in the process of unravelling the story, and a study like this is another piece of the jigsaw. Anything we can find out about possible causes helps us at every level - and what this looks like here is another potential pathway to disease."

Professor William Steward of Beating Bowel Cancer said it was encouraging that this was a gene which could be influenced by diet.

"These findings lead to the possibility of developing approaches to preventing colorectal cancer," he said. "Given the marked rise in the number of cases of bowel cancer, in particular among young people, this research could have important implications for reducing the risk and for tackling this worrying trend."