

# Eating plenty of fruit and veg can protect against asthma: High fibre diet prevents lung inflammation

- Findings suggest what we eat can influence immune cell development
- Consuming fibre alters the composition of bacteria in the gut
- Bacteria release fatty acids that enter blood and influence development of immune cells elsewhere in the body - including in the lungs

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Eating plenty of fruit and vegetables protects against asthma, according to new research. Mice fed a diet high in fibre had less inflamed lungs when exposed to the house dust mites that trigger the condition than those given little of the healthy food. The researchers said the findings published in *Nature Medicine* may apply to humans and underline how what we eat can influence immune cell development and disease outside of the gut.

A previous study found asthma and irritable bowel syndrome (IBS) could be caused by the same inflammatory reaction. People who suffer from IBS are twice as likely to have asthmatic symptoms as well.



New research suggests that eating a lot of fruit and vegetables can protect against the development of asthma

IBS is a common digestive disorder that produces a range of symptoms including cramp, a feeling of bloating, and a change or disruption of bowel habit, such as constipation or diarrhoea.

Dr Benjamin Marsland, of the University of Lausanne, Switzerland, said: 'Over recent decades, the incidence of allergic asthma has increased in developing countries, while the consumption of dietary fibre has decreased in these countries.'

His team found mice fed a low fibre diet developed increased lung inflammation in response to dust mites whereas those whose food was enriched with pectin found in the cell walls of plants had reduced allergic airway disease.

The soluble fibre used to combat constipation altered the composition of bacteria in the gut. Once ingested, these bugs process the fibre and release metabolites, called short chain fatty

acids, which enter the blood and influence the development of immune cells elsewhere in the body, including those entering the lung.

In the mice administration of propionate, a short chain fatty acid produced when gut bacteria metabolises fibre, also reduced allergic inflammation in the lung and resulted in the same protective effect as the pectin.



Eating a lot of fibre reduces the inflammation in the lungs which occurs as a result of exposure to the dust mites that trigger asthma

Dr Marsland said the work highlights the importance of roughage and provides a cellular mechanism for controlling asthma.

He added: 'Moreover, these data can be interpreted within the context of epidemiological studies showing as fibre content in the diet has decreased, the incidence of allergies has increased.

'Taken together, our findings support the concept intervention strategies targeting diet are a valuable approach for not only intestinal diseases but also respiratory inflammatory diseases.' Dietary fibre has many known benefits, including reduced risk of heart disease and certain cancers with health organisations around the world recommending daily minimum levels. But most people in western countries like Britain, Australia and the United States eat much less fibre than they require to remain healthy.

Read more: <http://www.dailymail.co.uk/health/article-2534568/Eating-plenty-fruit-veg-protect-against-asthma-High-fibre-diet-prevents-lung-inflammation.html#ixzz2uj6O0ucy>

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