

Dairy intolerance real, "not in people's heads"

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A study participant takes her milk "challenge." Credit: University of Auckland

For the first time, scientists have shown that dairy intolerance is a physiological condition distinct from lactose intolerance, and not "all in people's heads".

"Lots of people suspect that they have some intolerance to [dairy](#) foods, but testing shows they aren't lactose intolerant," says Dr Amber Milan, a research fellow at the Liggins Institute, University of Auckland, New Zealand. "Before this study, there had not been any detailed analysis of dairy intolerance to see if something else could be causing it.

"Our findings show dairy intolerance is a 'real thing' with a particular symptom profile - not something that's just in people's heads. That means sufferers and doctors can better identify it. Now, we need to find out more about what's going on and how to measure it better."

Her team gave 30 healthy young [women](#) who reported being dairy intolerant, and a control group of 10 dairy-consuming women, two "challenges": drinking 50g of lactose – an equivalent amount of the poorly digested sugar naturally occurring in about a litre of milk – to determine if they had [lactose intolerance](#) or not. On a separate visit, the same women downed 750ml of standard dairy milk. The women were aged 20-30, and had BMI within the normal range.

The researchers closely tracked each woman's digestion and metabolism of the milk with a battery of tests. Immediately after the women consumed the milk, and at 30 minute intervals for three hours, the researchers took blood, urine and breath samples, measured their waist, and performed MRI scans. The women also recorded how they felt.

Two distinct patterns of symptoms emerged. The clearest difference was that the discomfort and other symptoms came on and subsided sooner in dairy intolerant women, suggesting the underlying issues occurred in the stomach; while lactose intolerant women experienced their symptoms over a longer period, suggesting the trouble arose when lactose arrived in their small intestines.

The lactose intolerant women experienced flatulence, stomach rumbling

and cramping – all symptoms used in a standard checklist for diagnosing the condition. Many of these symptoms were experienced around two hours after drinking the lactose or milk. The hydrogen levels in their [breath samples](#) also peaked at two hours, up to 10 times above their baseline. Breath hydrogen is a by-product of the gut bacteria digesting any lactose that isn't absorbed by the body, and is partly responsible for symptoms like bloating and flatulence.

The dairy intolerant women, like the lactose intolerant women, experienced acute stomach pain, including bloating and distension. The difference was that they experienced this discomfort and flatulence within 30-60 minutes, and without any cramping. These symptoms occurred without any signs of malabsorption, such as raised breath hydrogen.

"With these women, it was as if their stomachs weren't digesting the milk as quickly. We need more research to identify exactly what's going on, but we know that some nutrients affect the speed of digestion, like fibre or the type of protein; as can the release of hormones, such as insulin and appetite hormones," says Dr Milan.

Early analysis of the biological measures offers some exciting leads. The dairy intolerant group, but not the lactose intolerant or control group, had a drop in blood sugar around the time that they felt most discomfort (60 minutes).

"This is partly because the lactose intolerant group isn't able to digest the sugar in milk and so their blood sugar changes less, but we need to do further analysis to understand the difference between the dairy intolerant and tolerant groups," says Dr Milan.

Researchers have also identified some trends in several different chemicals in the breath between the lactose and dairy intolerant groups.

"If further work confirms these differences, it may allow us to create a breath test to determine if people are intolerant to other aspects of dairy, like we currently do for lactose using breath hydrogen," she says.

Another finding was that some of the women who reported having no issues with milk were discovered to be lactose intolerant. "It may be that lactose intolerance lies on a spectrum, and not everyone experiences extreme discomfort," says Dr Milan.

Lactose is digested by an enzyme produced in the small intestine. Usually your body stops making this enzyme after weaning off breast milk, but some people have the genetic ability to continue producing enough enzymes to digest lactose as long as they keep consuming dairy. Genetic analysis is planned in this study to see if there is a genetic basis for dairy intolerance like there is for lactose intolerance.

Interestingly, some women had a 10-15 percent increase in waist circumference (up to 10 cm), but overall there was no difference in waist size changes between the study groups. The average increase across all women was 2-4 cm.

"You can have a healthy diet without dairy, but many people enjoy dairy products - some of the dairy and lactose intolerant women in our study still ate foods like yoghurt and cheese, despite the discomfort it caused them," says Dr Milan.

"Dairy is ubiquitous in the Western diet. It's also a great source of calcium, protein and other nutrients. If we can better understand why some people have trouble with dairy, we can help make recommendations for them that are suited for their particular problem."

Provided by University of Auckland

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