

Eating dairy cheese may protect against sodium-related health risks

1 November 2016, by Marjorie S. Miller

Consuming dairy cheese instead of other sodium-laden foods may actually protect against some of sodium's effects on the cardiovascular system, such as high blood pressure, according to researchers at Penn State.

The researchers say the protection comes from antioxidant properties of dairy proteins in cheese. Dairy Management Inc. is funding the research.

"This is a novel finding that may have implications for dietary recommendations. Newer [dietary recommendations](#) suggest limiting sodium, but our data suggest that eating sodium in the form of a dairy product, such as cheese, may be protective," said Lacy Alexander, associate professor of kinesiology and co-lead researcher on the project.

"We are already aware that at the population level, people who eat more dairy typically have [lower blood pressure](#)," Alexander added.

The data suggest that when sodium is consumed in cheese it does not have the negative vascular effects that researchers observed with sodium from non-dairy sources. The researchers interpret this to mean that the proteins and nutrients in cheese may be protecting the blood vessels from the short-term negative effects of sodium. However, it is not known if this protection extends over the long term.

For the study, Alexander and colleagues fed participants dairy cheese, pretzels or soy cheese on five separate occasions, three days apart. They then compared the effects of each food on the cardiovascular system using a laser-Doppler, which shines a weak laser light onto the skin.

The laser light reflects off red blood cells that flow through the vessels just under the skin, allowing researchers to measure how much the blood vessels dilate in response to skin warming and how much of that dilation is due to the production of nitric oxide, a gas that's naturally produced in

the body to deliver messages between cells.

The goal was to compare the effect of short-term dairy cheese consumption to sodium consumption from non-dairy sources.

Soy served as an additional control to match the fat, salt and protein content from a dietary source that is not dairy-based.

"We found that when our subjects ate a lot of sodium in cheese, they had better blood vessel function—more blood flow—compared to when they ate an equal amount of [sodium](#) from non-dairy sources—in this case, pretzels and soy cheese," said Anna Stanhewicz, co-investigator and postdoctoral fellow in the Center for Healthy Aging.

"We know that more [red blood cells](#) means more blood flow and more dilation. We observed that subjects had more nitric oxide-moderated dilation after eating dairy cheese, compared to after eating pretzels or soy cheese."

The researchers reported their findings in the *British Journal of Nutrition*. Other researchers involved included Billie Alba, a pre-doctoral student in the Department of Kinesiology, and W. Larry Kenney, professor of kinesiology and Marie Underhill Noll Chair in Human Performance.

An ongoing follow-up study tests the same effects over a longer period of time.

Provided by Pennsylvania State University

APA citation: Eating dairy cheese may protect against sodium-related health risks (2016, November 1) retrieved 26 October 2022 from <https://medicalxpress.com/news/2016-11-dairy-cheese-sodium-related-health.html>

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