

Is Dairy Anti-Inflammatory?

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This past summer I settled my glass of water on a table that contained a hidden paper wasp nest below the tabletop. I was stung multiple times. Immediately, I was in pain and my extremities swelled and became red. Inflammation was my body's response to the toxins and potential bacteria introduced by the wasps.

Inflammation is a buzz word in health and wellness. From a cut or infection that causes swelling to a food allergy, or a low-grade, ongoing process in our bodies, inflammation has been tied to several health conditions, and the foods we eat.

In this article, we'll explore acute and chronic inflammation, the role of the diet in inflammation, and what the research says about dairy foods and the inflammatory process.

What is Inflammation?

Acute inflammation is the body's protective response to what it perceives as an invasive element that could do harm. Our immune system mounts an aggressive response, including an army of white blood cells that restabilize the

body and repair the damage from the foreign invaders. Acute inflammation happens when we are injured, and while not quite as obvious, when we catch a cold or contract an infection. Acute inflammation is swift and typically resolves quickly (in hours to days).

Chronic inflammation, on the other hand, may start out the same way, but the body never stops responding to what it perceives as an invader. This response can happen mistakenly, when the body perceives its own tissues as foreign, such as in the case of autoimmune disorders like lupus or multiple sclerosis. Chronic inflammation can appear on and off, or be persistent.

Symptoms of chronic inflammation include fatigue, muscle and joint pain, headaches, skin rashes and digestive

issues. It has been associated with lifestyle patterns including smoking, alcohol abuse, poor diet, stress and weight gain. Health conditions such as cancer, diabetes, heart disease and arthritis are tied to chronic inflammation, as well.

How Does the Diet Contribute to Inflammation?

A food allergen like milk or peanut produces an acute inflammatory response when consumed by allergic individuals. From itchy hives to full-blown anaphylaxis, the inflammatory response is obvious. Avoidance of food allergens in those who are allergic is the advised treatment.

When it comes to chronic inflammation, however, several components of the diet have been implicated. Dietary patterns including high amounts of saturated fat, such as red and processed meats, have been linked to chronic inflammation. Trans-saturated fats, including margarine, lard and shortening are considered pro-inflammatory. Refined carbohydrates, including white bread, sugary desserts and soda, as well as fried foods like donuts and French fries, may produce an inflammatory response when they're a prevalent component of the diet.

Some individuals with chronic inflammation may be more sensitive to dairy and other food components like gluten. Their food sensitivity seems to be associated with chronic, underlying inflammation, rather than the food component itself causing the inflammation. Nevertheless, halting inflammation can be helpful.

Food sensitivity is hard to parse out without eliminating the offending food

item for a period of time. An elimination diet typically lasts for a short period of time. After symptoms of food sensitivity have calmed down, the offending food is re-introduced. Often, individuals do well with temporary elimination of the offending food and may be able to tolerate it in the future.

Does Dairy Cause Inflammation?

There have been several research studies looking at dairy and inflammation.

To date, the conclusions indicate dairy is not pro-inflammatory, and may be helpful in stemming the inflammatory process.

Let's summarize the research.

A 2019 review article from *Advances in Nutrition* looked at 16 randomized control trials on the consumption of milk and dairy products and inflammation. Healthy adults and those with overweight or obesity and who had metabolic syndrome or type 2 diabetes were included in the findings.

The authors found that milk and dairy products did not cause inflammation in healthy subjects, or in those with metabolic conditions. In fact, they found that milk and dairy products had an opposite effect: they were significantly anti-inflammatory in healthy adults and those with overweight, obesity and metabolic abnormalities.

A 2020 cross-sectional study of children in the journal *Nutrients* looked at over 1300 Greek school age children (10-12 year-olds) who participated in the Healthy Growth Study. Using dietary recall, they determined total intake of milk, yogurt and cheese. They looked at biomarkers of inflammation and found no association between dairy foods and

inflammation. Their findings suggest dairy may be protective against cardiac disease in children.

A 2021 literature review in the Journal of the American College of Nutrition conducted a systematic review of 27 studies, 19 of which looked at the effect of dairy products on low-grade chronic inflammation in adults. Their findings: dairy foods have either no ill effect or a positive benefit on inflammation.

Last, in a 2020 systematic review appearing in Gut Microbes, the question of whether dairy influences a healthy gut was explored. Researchers looked at 8 randomized, controlled studies and found in three studies that milk, yogurt and kefir (a fermented dairy drink) increased the beneficial gut

bacteria Lactobacillus and Bifidobacterium.

One study found a reduction in the harmful gut microbe strain Bacteroides fragilis. Furthermore, the dairy proteins whey and casein did not change the gut microbe composition nor did the amount of dairy foods that participants consumed. Only one study reported a reduction in gut microbiota diversity as a result of milk consumption. The authors overall conclusion: dairy products such as milk, yogurt, and kefir may affect the gut microbiota composition favorably.

Based on several systematic review studies to date, it does not appear that dairy and dairy foods are inflammatory in healthy individuals, and may be helpful in warding off inflammation.

KEY TAKEAWAYS

- Inflammation, characterized as a swelling or a low-grade ongoing bodily process, can be the result of a health condition, physical injury, or even the foods we eat.
- Acute inflammation occurs swiftly and is resolved in hours or days. Chronic inflammation is reoccurring and appears intermittently, or it can be persistent.
- Chronic inflammation includes fatigue, muscle and joint pain, headaches, skin rashes and digestive issues.
- Food allergies produce an acute inflammatory response on allergic individuals.
- Chronic inflammation can be caused various dietary components such as saturated fats, trans-saturated fats, and refined carbohydrates.
- Individuals with chronic inflammation caused by different food components may be more sensitive to dairy.
- Several studies from 2019- 2021 of healthy adults and children found that dairy and dairy foods do not appear to cause inflammation and may even be classified as anti-inflammatory in healthy individuals.

References

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