Will raw or organic milk reduce “inflammation”?

Going dairy-free is hot right now. Lactose intolerance, along with the rumors that dairy causes inflammation set the trend. Add to this illogical arguments against milk consumption—like milk being a food “meant” for calves, not humans, and you have people passionately avoiding it like the plague.

Being in the health and fitness industry there’s just no way to avoid hearing about any one of those claims.

But is there really such a thing as inflammation from dairy?

The answer is yes, of course there is such a thing. But if your symptoms come from dairy inflammation then you most likely already know it—you have a milk allergy.

But milk allergy is not what’s trending or debated right now, it’s low-grade or systemic inflammation that’s hot. And people are determined to find the cause of chronic diseases.

Reading this article on “the dangers of dairy,” written by an medical doctor could easily persuade people against dairy consumption. Here’s a snippet:

> Is consuming dairy necessary or even healthy for most people? The truth is, dairy can lead to countless health issues and, for many, can cause more harm than good, here’s why.

> It’s highly inflammatory. Dairy is one of the most inflammatory foods in our modern diet, second only to gluten.

If an doctor says dairy causes inflammation, then it must be true?

Only this doctor also promotes raw milk and speaks against pasteurization—a process wildly successful in protecting us from dying. There’s a reason selling raw milk is illegal in some states and that’s because raw milk is dangerous. The “health benefits” are insignificant when taken into context.

And then she goes on to promote organic milk, as if that would actually be different than regular milk. She actually says conventional milk is “full of antibiotics,” which could not be further from the truth. All milk is checked for antibiotic residues, and if residues are found the milk is thrown out. Cows treated with antibiotics are taken away from milk production for some time, following government guidelines about this. This false rhetoric about milk is highly infuriating but sadly very widespread.

Something’s fishy here. So I looked into the science for answers.

**Inflammation and Dairy: Here’s What Science Says**
What is low-grade inflammation and why should you care?

Low-grade inflammation is different than acute inflammation—your body’s defense response when something needs immediate, urgent attention, like when you cut yourself and then notice redness and swelling in the area. Let’s take it from Brent Bauer, M.D., from the editorial board of Mayo Clinic:

Chronic inflammation, also known as low-grade or systemic inflammation — can play a more puzzling and long-lasting role in the body. Consider the vast array of autoimmune disorders — such as rheumatoid arthritis, lupus and polymyalgia rheumatica — where the body’s immune system mistakenly initiates an inflammatory response even though there’s no apparent inflammation to fight off. Chronic inflammation plays a more obvious role in diseases such as asthma and the inflammatory bowel diseases ulcerative colitis and Crohn’s disease.

Low-grade systemic inflammation is now considered a factor of several disorders including atherosclerosis, metabolic syndrome, type 2 diabetes, and cardiovascular diseases. Biomarkers like elevated plasma concentrations of C-reactive protein and the proinflammatory cytokines have been associated with an increased risk of cardiovascular disease.

Granted that cardiovascular diseases are the number one killers in the U.S.—that’s a good enough reason to care. In fact, heart disease killed 614,348 in 2014 while all forms of cancer combined killed 591,699.

Ok, so low-grade inflammation is a big deal. How can we reduce or prevent it then?

Your age, sex, and obesity level, along with smoking, alcohol and exercise habits—all these affect inflammation. Research also suggests that diet can play a major role in the inflammatory profile. Fruits, vegetables, whole grains, fish, fiber omega-3 fatty acids and some vitamins may actually act as anti-inflammatory foods.

Does dairy cause inflammation? Or, does it act as an anti-inflammatory food?

Alessandra Bordoni et al. did a systematic review of 52 clinical trials investigating inflammatory markers in relation to dairy product consumption. The authors found that the relationship between the two is neutral or positive — meaning that dairy may have no impact at all or a positive impact to low-grade inflammation.

Systematic reviews are very significant in science because they are the ones that take the evidence from the body of science in a subject matter and make sense of it. For example, several randomized control trials (i.e., intervention studies where a group of people is instructed to take a specific action, e.g., “increase dairy intake”) may have been done to examine a specific scientific question (e.g., what is the relationship between dairy and inflammation)? Review studies investigate those clinical trials, which may or may not agree with each other, and provide us with conclusions about where we’re at at the subject matter examined. Read this article from Maeve, an RD from Ireland, for a plain-terms explanation on how to recognize the good studies from the bad studies.
So back to the Bordoni systematic review. The authors did find that dairy causes inflammation to people with bovine milk allergy (as expected, of course.) By definition, an allergy, any allergy, creates an inflammatory response.

However, for people who are not allergic to dairy products, dairy was found to be either neutral or anti-inflammatory. The most significant effects were found in people with metabolic disorders (e.g., obesity, cardiovascular disorders) and also healthy individuals.

**The beneficial effect of dairy on cardiovascular health is not something new; it has been documented again and again in the last two decades.**

Meta-analyses and systemic reviews consistently show an inverse association between the consumption of dairy products and the risk of metabolic syndrome and type 2 diabetes. Hypertension is also inversely associated with dairy consumption.

Take the Attica study for example. This study examined 1,514 healthy men (18-87 years old) and 1,528 healthy women (18-89 years old) from the Attica region in Greece. The researchers found that inflammatory markers like C-reactive protein (CRP), interleukin-6 (IL-6), and tumor necrosis factor-alpha (TNF-a) levels of individuals consuming between 11 and 14 servings of dairy products per week were “almost 16 percent, 5 percent, and 12 percent lower, respectively, than in those consuming fewer than eight servings, while those consuming more than 14 servings per week had 29 percent, 9 percent, and 20 percent lower levels of CRP, IL-6, and TNF-a, respectively,” even after adjustments were made for age, gender, smoking, physical activity, body mass, dietary habits, and other potential confounders.

In another review study, the authors examined eight randomized control trials that were conducted in overweight or obese adults. They found that dairy consumption had either a neutral or a positive effect on reducing low-grade inflammation.

In fact, the authors of a metabolic health study from Canada published in Maturitas suggest we make sure we get dairy every day:

> A limited number of studies have shown beneficial effects of dairy consumption on plasma lipids, blood pressure, glucose homeostasis or inflammatory and oxidative stress profiles. Overall, this review article suggests that adults should consume at least 2–3 servings of dairy products per day within a well-balanced diet and a healthy lifestyle for metabolic health.

This suggestion of two to three daily servings is line with the suggestion from the American Heart Association and the myPlate dairy government guidelines. Serving examples:

- 1 cup of milk
- 1 cup of yogurt (= 1 regular container)
- 1 and 1/2 oz of hard cheese or 2 cups cottage cheese
Note that fat percentage did not affect dairy’s neutral or anti-inflammatory role.

**Inflammation from dairy: Unless you’re allergic to it, dairy can be really good for you**

There are many reasons not to drink milk or not to consume dairy. You may not like it, you may have ethical issues, or you may have an allergy. However, if you were about to cut out dairy because somewhere on the internet you heard that clean eating meant no dairy, or that Gwyneth Paltrow said no dairy or that dairy causes inflammation, then you just read the good news.

Dairy products do not cause inflammation. They may actually act as anti-inflammatory foods. Now take a deep breath. All is good.

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