

Dairy Fat: From Fear to Facts

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Fat is a concentrated source of energy, and there are many types of fat, from saturated to polyunsaturated fats. Fat helps your body maintain its temperature, cushion, and protect body organs, and are an essential part of our diets.

The fat in milk, or milk fat, is getting a lot of attention in research circles. From polar lipids (the fat contained in the membranes of the fat globule) to the effect of milk fat on health and disease, the attitude about dairy fat is being reexamined. It's no wonder there's a change happening. Nutrition research has shifted from looking at a single nutrient, like vitamin D, to identifying the impact of the whole food and how an eating pattern affects health.

In this article, we'll explore the differences in the fat content of dairy foods, the influence of dairy fat on health, and the latest findings so you can make decisions about which type of dairy foods are right for you.

Breaking Down the Fat in Dairy

Ever wonder about the different types of milk? Skim milk? Reduced fat

milk? Whole milk? Each different type of milk contains a different amount of fat. Fat is the only nutrient that varies in milk – all the other nutrients, like protein, calcium, vitamin D and the other essential nutrients remain the same.

The fat in milk is measured by weight. Because the fat content varies, it will alter the calories from milk. Here's a breakdown of the fat and calorie content of each milk type:

Whole milk contains 3.5% fat by weight and is the closest to the natural fat content of milk when it comes out of the cow. Whole milk contains about 150 calories per cup.

Reduced fat milk contains 2% fat, and about 120 calories per cup.

Low fat milk has 1% fat and has about 110 calories per cup.

Fat-free milk (also known as skim milk) contains 0% fat – or, no to negligible

fat. Fat-free and skim milk have about 90 calories per cup.

To make skim milk, whole milk is placed in a centrifuge and the fat droplets are spun out of solution and removed. To make low fat and reduced fat milk, skim and whole milk are combined in a pre-set ratio.

As an interesting point, more than 87% of fluid milk is water and contains between 3.4% and 5% milk fat. The remaining 8% is made up of protein, carbohydrate, and minerals. Other dairy foods have varying amounts of fat. For example, butter is about 69% fat; heavy whipping cream is approximately 39% fat; and light cream is around 18-30% fat.

Milk Fats and Their Effect on Health

The fat found in dairy foods is a blend of saturated, monounsaturated, polyunsaturated, and other types of fat. Saturated fat, the type of fat in milk formerly believed to be a threat to cardiovascular health, has no clear association with cardiovascular disease, according to current research. (Lordan et al., 2018)

Studies that compare low fat milk to whole milk show that LDL cholesterol ("bad" cholesterol) increases when higher fat milk is consumed, however, HDL cholesterol ("good" cholesterol) also increases. (*The Fat in Different Dairy Products*, n.d.)

Trans fat is also found in milk fat, but the type of trans fat in milk is different from that found in vegetables or plants. There appears to be a positive association on heart health associated with trans fatty acids from cows. (Lordan et al., 2018)

Conjugated linoleic acid (CLA) is a type of fatty acid found in milk. It is thought to have many benefits on health, including protection against heart disease, cancer, and the disease of obesity. But much of the research has been done on animals or in the laboratory setting, making it an indirect prediction on human health.

Current Research on Whole Milk

Research suggests the fat in dairy foods may be more healthful than we thought. From preventing cardiovascular disease to protecting against the disease of obesity, dairy foods and dairy fat have some emerging research worth noting.

Whole Milk and Cardiovascular Disease

Traditionally, people at risk of heart disease were advised to avoid whole milk. This was due to the fat content. However, recent studies show no negative effect on cardiovascular risk, type 2 diabetes, or health. Dairy foods, including full fat dairy, when included as part of a nutritious eating pattern, do not appear to cause chronic inflammation, a higher risk for cardiovascular disease, or problems with blood flow. In fact, the latest research concludes there is a neutral to protective connection between dairy and heart health. (Hirahatake et al., 2020)

Some researchers believe this is due to the whole package of nutrients like protein, fat soluble vitamins, and other nutrients that are present in milk. Furthermore, a recent meta-analysis concluded that drinking milk may lower cholesterol and the risk of cardiovascular disease compared to people who don't drink milk at all. They



concluded there was no need to limit milk intakes with respect to cardiovascular disease risk. (Vimaleswaran et al., 2021)

In children aged 2 to 8 years, the fat content of milk appears to have an influence on cholesterol. For instance, for every percentage increase of milk fat, for instance, from 1% to 2%, there was an increase in cholesterol. However, this increase did not contribute to a higher risk of high blood cholesterol overall. (Wong et al., 2019)

Whole Milk and the Disease of Obesity in Children

A 2021 study in *The International Journal of Obesity* looked at the effect of the fat percentage in milk on the risk of developing excess body fat in childhood. Skim milk to whole milk was studied in children ranging from 9 months to 8 years. Surprisingly, they found that for every 1% increase in milk fat (e.g. skim to 1% to 2% to whole milk), the risk for excess body fat, measured by body mass index, went down. (Vanderhout et al., 2021)

Furthermore, children who consumed whole milk had 16% lower odds of becoming overweight and 18% lower risk of becoming obese compared to kids who drank skim or reduced fat milk. Youth may be better satiated after consuming full fat dairy foods.

Also, in children who drink whole milk compared to those who drink low fat milk, the whole milk drinkers have higher vitamin D stores. (Lordan et al., 2018)

Given the growing evidence of whole milk benefits on the prevention of obesity in children, the current guidelines recommending children transition to reduced fat milk at the age of two years may not be effective.

Dairy Foods are Whole Foods

When we think about the impact of dairy on health, we must look at the big picture. In other words, the whole food. Dairy foods aren't just made up of protein, fat, carbohydrates and

micronutrients like calcium, vitamin D, A, and iodine, for instance. There are other factors within dairy foods that work together with these nutrients, creating a complex, whole food matrix. Some other elements you'll find in dairy foods include milk oligosaccharides, live and active cultures (probiotics) in yogurt, milk fat globule membranes and polar lipids, and bioactive peptides, all of which act on the gut, immune and cardiovascular systems.

We must take a broader view of how dairy foods influence health while looking at eating patterns, food choices and their interactions, the whole food matrix, and the metabolic system of the individual.

The bottom line is: dairy foods, including full fat milk, yogurt, and cheese, do not appear to cause an increased risk for heart disease or other adverse health outcomes. Rather, the evidence suggests a neutral or protective effect on health.

KEY TAKEAWAYS

- Fat is an essential part of a healthy diet and contributes to overall good bodily well being.
- The fat in milk is measured in weight and varies in amount depending on the type of milk: whole, reduced fat, low fat, or skim.
- More than 87% of fluid milk is water and can contain anywhere from 3.4-5% milk fat. By contrast, butter contains 69% fat.
- Current research shows the kind of fat found in milk has no clear association with cardiovascular disease.
- Dairy foods appear to have no negative effect on type 2 diabetes or chronic inflammation that can affect blood flow to the heart, and may even help lower cholesterol levels.
- Children who consume whole milk in their diets are at lower risk of becoming obese and maintain higher levels of Vitamin D all around.
- Taken as a whole, dairy contains more than just vitamins and minerals that the body needs. It provides a complete package of elements that help maintain a healthy gut, immune and cardiovascular system.

References

Hirahatake, K. M., Bruno, R. S., Bolling, B. W., Blesso, C., Alexander, L. M., & Adams, S. H. (2020). Dairy Foods and Dairy Fats: New Perspectives on Pathways Implicated in Cardiometabolic Health. *Advances in Nutrition*, 11(2), 266–279. <https://doi.org/10.1093/advances/nmz105>

Lordan, R., Tsoupras, A., Mitra, B., & Zabetakis, I. (2018). Dairy Fats and Cardiovascular Disease: Do We Really Need to Be Concerned? *Foods*, 7(3), 29. <https://doi.org/10.3390/foods7030029>

The Fat in Different Dairy Products. (n.d.). Penn State Extension. Retrieved June 23, 2022, from <https://extension.psu.edu/the-fat-in-different-dairy-products>

Vanderhout, S. M., Keown-Stoneman, C. D. G., Birken, C. S., O'Connor, D. L., Thorpe, K. E., & Maguire, J. L. (2021). Cow's milk fat and child adiposity: A prospective cohort study. *International Journal of Obesity* (2005), 45(12), 2623–2628. <https://doi.org/10.1038/s41366-021-00948-6>

Vimaleswaran, K. S., Zhou, A., Cavadino, A., & Hyppönen, E. (2021). Evidence for a causal association between milk intake and cardiometabolic disease outcomes using a two-sample Mendelian Randomization analysis in up to 1,904,220 individuals. *International Journal of Obesity*, 45(8), 1751–1762. <https://doi.org/10.1038/s41366-021-00841-2>

Wong, V. C. H., Maguire, J. L., Omand, J. A., Dai, D. W. H., Lebovic, G., Parkin, P. C., O'Connor, D. L., Birken, C. S., & TARGet Kids! Collaboration. (2019). A Positive Association Between Dietary Intake of Higher Cow's Milk-Fat Percentage and Non-High-Density Lipoprotein Cholesterol in Young Children. *The Journal of Pediatrics*, 211, 105-111.e2. <https://doi.org/10.1016/j.jpeds.2019.03.047>

