

# Can Dairy Prevent Diabetes?

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About 1 out of every 10 Americans have diabetes. Ninety percent of those with diabetes have what is called type 2 diabetes (T2D), or an inability to process and regulate glucose in the bloodstream (also known as blood sugar), according to the Centers for Disease Control (CDC). Type 2 diabetes typically develops around age forty-five, but today, more kids, teens and young adults have T2D than ever before.

When individuals have type 2 diabetes, they aren't able to use the insulin made by their pancreas properly. The job of insulin is to help bring blood sugar into the cells so it can be used as a source of energy for the body. With type 2 diabetes, the cells do not respond normally to insulin. They may become resistant to insulin, also referred to as insulin resistance. Even though the pancreas tries to make more insulin, with insulin resistance, the pancreas cannot keep up. Blood sugar rises, causing the development of prediabetes and type 2 diabetes.

## The Role of Dairy in Preventing Diabetes

There has been quite a bit of research in the area of diet and the prevention of diabetes. The good news is diet may slow or prevent the development of type 2 diabetes. Dairy foods have several features that may have a positive influence on diabetes prevention.

For one, milk and dairy products generally have a low glycemic index. The Glycemic Index is a measurement of how fast your blood sugar rises after eating. Some foods make your blood sugar rise quickly, while others

make it rise moderately or slowly. This has to do with how quickly carbohydrates are absorbed into your body after eating. Because of nutrients like protein and fat, blood sugar increases are tempered.

## The Fat Content in Milk

Low-fat dairy foods seem to have a clear benefit on preventing type 2 diabetes. However, higher fat dairy, such as whole milk and full fat cheese, is also beneficial, mostly due to the type of fatty acids found within these foods.

In a review study, *trans*-palmitoleic acid, which naturally occurs in dairy, has been shown to reduce the risk of type 2 diabetes by 62 percent. Another study showed a 48% lower risk of type 2 diabetes due to this fatty acid. Overall, when these results were pooled, they showed an overall risk reduction of 29% with incrementally higher concentrations of *trans*-palmitoleic acid. (Kalergis et al., 2013)

## Amount of Dairy Consumption

One meta-analysis found a 14% reduced risk of developing T2D in those individuals who consumed the most dairy compared to those who consumed the lowest amount of dairy. In fact, with each additional serving of dairy, the risk for developing diabetes dropped by 10 percent. (Yuzbashian et al., 2021) Furthermore, a 9-year study involving adults with prediabetes found that those who ate more dairy (just a ½ cup more of low-fat dairy, low-fat milk, or low-fat yogurt) reduced their risk of type 2 diabetes compared to those who were steady in their dairy consumption.

During the study, those individuals who ate less dairy were at higher risk of T2D. (Yuzbashian et al., 2021)

## The Effect of Micronutrients

Dairy has been shown to lower the amount of body fat while simultaneously preserving muscle mass. It's also been shown to prevent weight gain. (Stonehouse et al., 2016) Experts suspect the components found in dairy foods, specifically calcium, vitamin D, dairy fat and *trans*-palmitoleic acid may be playing a helpful role.

Calcium, for instance, helps the pancreas release insulin. When calcium fluctuates in the body, it may change the pancreas' ability to respond with insulin. Additionally, insulin helps with fat cell breakdown. It is thought that calcium may spur insulin release and in turn, reduce body fat accumulation.

Vitamin D and magnesium also play a role in supporting insulin function. All three of these nutrients can be found in dairy foods.

## Protein in Dairy Foods

Protein from milk, especially when consumed in the morning, may lower blood sugar levels and reduce appetite at lunchtime, says one study, which studied young children who were at risk of obesity and type 2 diabetes. (Wong et al., 2019) High protein content from dairy foods encouraged fullness after the morning meal and less eating later.

Protein also stimulates the release of appetite hormones in the stomach. These hormones, like peptide YY, makes the fullness sensation more pronounced, reducing appetite.

Last, whey protein, found in dairy foods, may promote insulin sensitivity, which can help with glucose control, blood fats, and body fat.

## Dairy is a Powerhouse for Diabetes Prevention

In summary, dairy is a powerhouse with many features that aid in the prevention of Type 2 diabetes, including the following:

- The presence of dairy fat, in general, and high fat dairy has a moderately beneficial or neutral effect on T2D prevention. (Hirahatake et al., 2020)
- Total dairy intake has been associated with an 11% reduced risk of T2D. (Yuzbashian et al., 2021)
- The fatty acids found in dairy foods, especially trans-palmitoleic acid, are

associated with a lower risk for T2D. (Kalergis et al., 2013)

- Yogurt and whole milk are tied to a lower risk of T2D, with a 17% and 13% reduction in risk, respectively. (Tian et al., 2017)

Milk and dairy products are not something to fear or eliminate, even if you have type 2 diabetes. The science to date indicates that dairy foods can be a satisfying, tasty addition to the eating patterns of individuals with prediabetes and type 2 diabetes.

If you have diabetes, focus on consuming a variety of dairy products such as low-fat milk, Greek yogurt, string cheese, and cottage cheese. Sweetened dairy foods like ice cream or chocolate milk can be had occasionally, as long as they are carefully planned into your diet.



## KEY TAKEAWAYS

- Ninety percent of those with diabetes have type 2 diabetes (an inability to process and regulate glucose in the bloodstream).
- Today, more kids, teens, and young adults have type 2 diabetes than ever before.
- Diet may slow or prevent the development of type 2 diabetes.
- Dairy foods may have a positive influence on diabetes prevention because of their low glycemic index, a measure of how fast blood sugar rises after eating.
- People who eat dairy show a lower risk of developing type 2 diabetes than those who don't eat dairy.
- Components found in dairy like protein, calcium, vitamin D, and magnesium play a role in preventing weight gain and spurring and supporting insulin function.

## 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>

Kalergis, M., Leung Yinko, S. S. L., & Nedelcu, R. (2013). Dairy Products and Prevention of Type 2 Diabetes: Implications for Research and Practice. *Frontiers in Endocrinology*, 4, 90. <https://doi.org/10.3389/fendo.2013.00090>

Stonehouse, W., Wycherley, T., Luscombe-Marsh, N., Taylor, P., Brinkworth, G., & Riley, M. (2016). Dairy Intake Enhances Body Weight and Composition Changes during Energy Restriction in 18–50-Year-Old Adults—A Meta-Analysis of Randomized Controlled Trials. *Nutrients*, 8(7), 394. <https://doi.org/10.3390/nu8070394>

Tian, S., Xu, Q., Jiang, R., Han, T., Sun, C., & Na, L. (2017). Dietary Protein Consumption and the Risk of Type 2 Diabetes: A Systematic Review and Meta-Analysis of Cohort Studies. *Nutrients*, 9(9), E982. <https://doi.org/10.3390/nu9090982>



## References (Continued)

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>

Yuzbashian, E., Asghari, G., Mirmiran, P., Chan, C. B., & Azizi, F. (2021). Changes in dairy product consumption and subsequent type 2 diabetes among individuals with prediabetes: Tehran Lipid and Glucose Study. *Nutrition Journal*, 20(1), 88. <https://doi.org/10.1186/s12937-021-00745-x>



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