

NERD Mini: Summarizing the evidence on milk consumption and your health

🔖 Tags: [Allergies](#), [Blood Lipids](#), [Blood Pressure](#), [Bone Health](#), [Cancer](#), [Cardiovascular Disease](#), [Dairy](#), [Diabetes](#), [Milk](#), [Obesity](#)

📄 Study under review: [Milk and Health](#)

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Background

[Dairy](#), and milk in particular, is one of those foods that seems to be good for you one day and actively destroying your health the next, depending on which new headline or documentary happens to be making the rounds. This seemingly endless back-and-forth messaging highlights consumers' desires to have actionable yes or no answers about food.

>> Yes, milk is healthy.

>> No, milk is not healthy.

If only it were that simple! Hell, if it *were* that simple Examine.com might just close up shop! Food can interact with your health in complex ways. Sometimes, a food that can improve one health endpoint may be harmful to another. A recent review article on the health effects of milk and milk products has attempted to untangle some of that complexity by examining recent evidence on how they can affect a variety of health parameters.^[1]

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Allergies

- Up to 4% of infants may be allergic to [milk protein](#).
- In an RCT, infants with a family history of [atopy](#)—a genetic predisposition for developing allergic diseases—had a lower risk of developing any allergic disease or [eczema](#) when they received a hydrolyzed protein formula, compared to infants who got cow’s milk.
- Children with reported intolerance to cow’s milk experienced greater reductions in symptoms when switched to [soy milk](#).

Blood lipids and heart disease

- Low- or no-fat dairy products are seen as a way to help decrease low-density lipoprotein cholesterol ([LDL-C](#)), a factor for [coronary heart disease risk](#).
- In prospective cohort studies, whole milk and low-fat milk have not been consistently associated with the incidence of heart disease or [stroke](#), or mortality from these events.
- Like the blood pressure example above, the study outcomes are influenced by what milk replaced in the diet.

Blood pressure

- The high [potassium](#) content of milk has led to the idea that it may aid in [blood pressure](#) regulation.
- For blood pressure reduction, trials of low-fat milk consumption shown given mixed results.
- These mixed results are partially due to the fact that these trials often compare milk to other foods and beverages. When milk replaces full-sugar sodas, there will likely be a positive observed benefit. If milk replaces other whole foods, a positive effect might not necessarily be observed.

Bodyweight

- On average, milk and dairy products appear to have a neutral effect on [body weight](#).
- The exception is yogurt, which has been associated with less weight gain.
- This may be confounded by the fact that people who consume yogurt also tend to have healthier lifestyles. This is also called the [healthy user bias](#) effect.

Bone health

- A driving reason behind the promotion of milk consumption by public health agencies is to help the general public meet their [calcium](#) requirements.
- Counterintuitively, countries with high milk and calcium intake also have high [hip fracture](#) rates. However, the association is weak and may be confounded by [vitamin D](#) status and ethnicity.
- Long term studies are needed in order to get high quality data on the effects of milk consumption on bone health, which is why getting a straight answer to this question has been so difficult. The authors of the study under review recommended study durations of more than one year to help achieve this goal.
- It's possible that there is a low threshold for calcium intake to provide a positive effect on [bone mineral density](#), which would explain why higher milk intakes don't appear to provide additional benefit.

Cancer

- Of all the cancer types investigated, higher milk consumption has most consistently been associated with an increased risk of [prostate cancer](#).
- Total dairy product intake has been associated with an increased risk of [endometrial \(uterine cancer\)](#), but more so in post-menopausal females not undergoing hormone therapy.
- Total dairy intake has not been associated with an increased risk of [ovarian cancer](#).
- Milk consumption has been associated with a decreased risk of [colorectal cancer](#).

- A limitation of these findings is that the data mainly comes from prospective studies, not clinical trials.

For more on this topic, check out our [NERD Safety Spotlight on dairy and breast cancer](#).

Diabetes

- One hypothesis suggests that cow's milk may contribute to the development of [type 1 diabetes](#). There is one randomized trial that indicates this may not be the case, but the issue is currently unsettled.
- Meta-analyses have only weakly associated dairy product consumption with a lower risk of developing [type 2 diabetes](#).

For more on this topic, check out the NERD article, [Investigating dairy to improve insulin resistance](#).

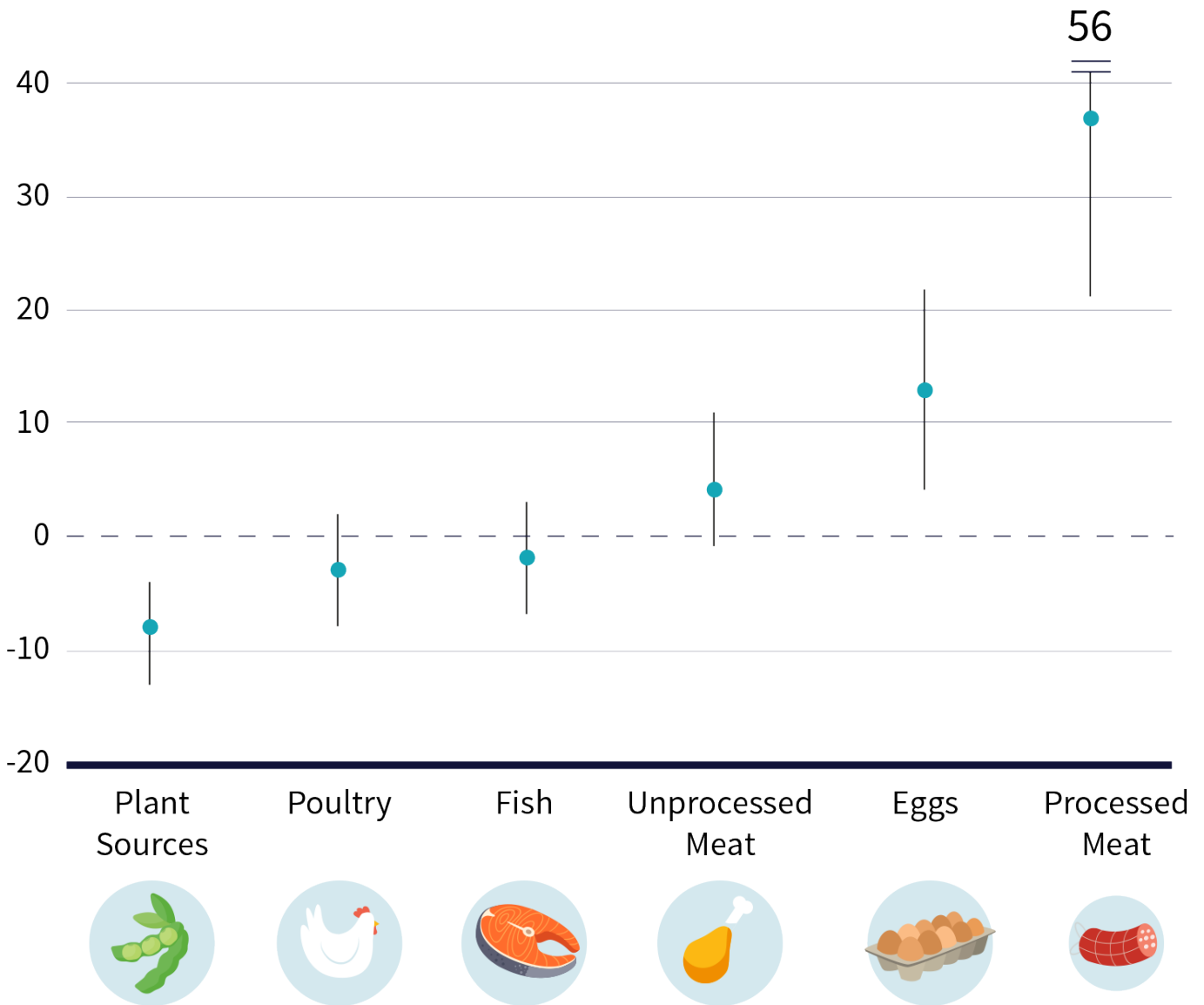
Growth and development

- Normal growth and development can be achieved throughout childhood without the inclusion of dairy products, but more attention to diet quality may be needed to ensure adequate nutrition.
- Milk consumption is associated with attaining growth and height milestones throughout childhood.

Mortality

- A meta-analysis of 29 cohort studies found that intakes of milk (total consumption and high- or low-fat) and total dairy food intake were not significantly associated with overall mortality.
- A meta-analysis of three large cohort studies with more than 30 years of follow-up found whole milk, but not low fat milk or [cheese](#), was associated with increased mortality.
- Compared to [dairy protein](#) (represented by the 0 line in Figure 1 below), [plant protein](#) is associated with a **decreased** risk of mortality while [eggs](#) and [processed meat](#) are associated with an **increased** risk.

Figure 1: All-cause mortality associated with protein sources*



* Associations are adjusted for major lifestyle, dietary, and other risk factors for cardiovascular disease and cancer.

References: Willett & Ludwig. *N Engl J Med.* 2020.^[1] ♦ Song et al. *JAMA Intern Med.* 2016.^[2] ♦

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References

1. ^ [a b](#) Willett WC, Ludwig DS. [Milk and Health](#). *N Engl J Med.* (2020)

2. [^ Song M, et al. Association of Animal and Plant Protein Intake With All-Cause and Cause-Specific Mortality. *JAMA Intern Med.* \(2016\)](#)