Health Concerns About Dairy

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Many Americans, including some vegetarians, still consume substantial amounts of dairy products. And government policies still promote these products, despite scientific evidence that questions their health benefits and indicates their potential health risks. Though dairy is marketed as an essential food for strong bones, there is more to the story. Some important things to consider include potential health problems like heart disease, certain cancers, digestive problems, and type 1 diabetes.

Bone Health

Calcium is an important mineral that helps to keep bones strong. Our bones are constantly remodeling, meaning the body takes small amounts of calcium from the bones and replaces it with new calcium. Therefore, it is essential to have enough of this mineral so the body doesn't decrease bone density in this remodeling process. Though calcium is necessary for ensuring bone health, the actual benefits of consuming calcium diminish after a certain point. Research suggests that getting more than about 700 milligrams per day—easily achieved without dairy products or calcium supplements—does not make bones stronger.[1]

In fact, research is mixed on the benefits of dairy products for bone health. While some studies show a benefit, others show that high milk intake can increase hip fracture risk. The overall balance of research suggests that there is no benefit to drinking milk for strong bones.[2,3] When researchers tracked the diets, exercise, and stress fracture rates of girls for seven years, they concluded that dairy products and calcium do not prevent stress fractures in adolescent girls.[4]

How can this be? First, healthy bones need more than just calcium. For example, vitamin K is important for bone health, but most dairy products contain very little. Luckily, certain green vegetables such as kale and broccoli are especially beneficial for bones because they contain both calcium and vitamin K.

Vitamin D is also necessary for bone health. Without enough vitamin D, only 10-15% of the calcium you consume is absorbed.[5] Milk does not naturally contain vitamin D. Rather, it's added to milk in a process called fortification. The natural source of vitamin D is sunlight: Our skin makes vitamin D when exposed to sun. Few foods naturally contain vitamin D—and no dairy products naturally contain this vitamin. Therefore, fortified cereals, bread, orange juice, and soy or other plant-based milks exist as options for providing vitamin D through the diet.[6] Supplements are also available.

Five to 15 minutes of midday sun exposure to the arms and legs, or the hands, face, and arms, can be enough to meet many people's vitamin D needs.[7] However, having darker skin, being older, living in the north, living in an urban area, and even going through a dark winter season can all make it hard to get enough vitamin D from the sun alone. Luckily, supplements are an easy way to get vitamin D. The U.S. government recommends that adults 19-50 years old get 600 international units (IU) per day and that adults 51 years and older get 800 IU per day.

Other ways to protect bones include eating less salt, eating more fruits and vegetables, and ensuring adequate calcium intake from plant foods such as kale, broccoli, other leafy green vegetables, and beans.[8-11] You can also use calcium-fortified products such as breakfast cereals and juices. Soy milk and fortified orange juice provide about the same amount of calcium per serving as milk or other dairy products.[11]

Lastly, exercise is one of the most effective ways to increase bone density and decrease the risk of osteoporosis.[12,13] Its benefits have been observed in studies of both children and adults.[12,14,15]

Fat Content and Heart Disease

Dairy products—including cheese, ice cream, milk, butter, and yogurt—contribute significant amounts of cholesterol and saturated fat to the diet. The saturated fat from dairy can increase the risk of heart disease and stroke and even increase risk of death from cardiovascular disease.[16,17]

On the other hand, a low-fat, plant-based diet (which eliminates dairy products), in combination with exercise, smoking cessation, and stress management, can not only prevent heart disease, but may even reverse it.[19,20]

Cancer

Consumption of dairy products has also been linked to higher risk for various cancers, especially to cancers of the reproductive system. Most significantly, consuming dairy has been linked to increased risk for prostate cancer.[20-23]

The danger of dairy product consumption as it relates to prostate

cancer is most likely linked to increases in insulin-like growth factor (IGF-1).[24] Consuming milk and dairy products on a regular basis has been shown to increase blood levels of IGF-1 in humans.[25] Studies in diverse populations have shown a strong and consistent link between IGF-1 in the blood and prostate cancer risk.[26,27] One study showed that men with the highest levels of IGF-1 had more than four times the risk of prostate cancer, compared with those who had the lowest levels.[28] In the Physicians Health Study, which tracked 21,660 participants for 28 years, researchers found an increased risk of prostate cancer for those who consumed more than 2.5 servings of dairy products per day as compared with those who had fewer than 0.5 serving a day.[21] This study, which is supported by other findings, also shows that prostate cancer risk is higher with increased consumption of low-fat milk.[22,30,31] That means that too much dairy calcium, and not just the fat in dairy products, could harm prostate health. Further research continues to support the link between dairy and prostate cancer.[23,29]

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A study of 1,893 women diagnosed with early-stage invasive breast cancer revealed that eating more high-fat dairy products was linked to higher mortality (death) rates. As little as half a serving per day increased risk significantly. Since hormones are stored in fat, consuming high-fat, rather than low-fat, dairy products likely means women are consuming more estrogen.[32] In a study published in *BMC Medicine*, researchers compared dairy consumption and cancer risk for more than half a million participants in China over 11 years. For every 50 grams (less than 1/4 cup) of milk and other dairy products consumed per day, overall, liver, and female breast cancer risk increased by 7%, 12%, and 17%, respectively.[33]

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The consumption of dairy products may also contribute to development of ovarian cancer. The relationship between dairy products and ovarian cancer may be due to the breakdown of the milk sugar (lactose) into galactose, a sugar that may be toxic to ovarian cells.[34] Two studies, one conducted in Sweden and one conducted among African American women, showed that consuming lactose and dairy products was positively linked to ovarian cancer.[35,36] The Iowa Women's Health Study found that women who consumed more than one glass of milk per day had a 73% greater chance of developing ovarian cancer than women who drank less than one glass per day.[37]

Lastly, a large study published in the *British Journal of Cancer* identified 22,788 people who were lactose intolerant and found that those who avoided dairy (due to lactose intolerance) had a lower incidence of lung, breast, and ovarian cancers than their family members who did not avoid dairy. The researchers suggest that avoiding the saturated fat and extra hormones found in dairy products is protective against certain types of cancer.[38]

Lactose Intolerance

The National Institutes of Health estimates that 30 million to 50 million American adults are lactose intolerant, including 95% of Asians, 60-80% of African Americans and Ashkenazi Jews, 80-100% of American Indians, and 50-80% of Hispanics.[39] Symptoms, which include upset stomach, diarrhea, and gas, occur because these individuals lack the enzyme lactase, which is needed to digest the milk sugar, lactose. Nursing children make enzymes that break down lactose, but as we grow up, many of us lose this capacity.[40] As a result, lactose is not absorbed, but remains in the intestine where it causes symptoms.

Contaminants

Dairy contains contaminants that range from hormones to pesticides. Milk naturally contains hormones and growth factors produced within a cow's body, too. In addition, artificial hormones such as recombinant bovine growth hormone (rBGH) are commonly given to cows to increase their milk production.[41]

Antibiotics are used to treat udder infections (mastitis) in cows. Traces of these antibiotics have been found in some samples of milk and dairy products.[42] Unfortunately, antibiotics are used frequently, because mastitis is very common in cows due to farming practices that cause cows to produce more milk than nature intended.

Pesticides, polychlorinated biphenyls (PCBs), and dioxins are other examples of contaminants found in milk. Dairy products contribute to one-fourth to one-half of the dietary intake of total dioxins.[43] All these toxins tend to build up in the body over time. Eventually, this can harm the immune, reproductive, and nervous systems. Moreover, PCBs and dioxins have been linked to cancer.[44]

Milk Proteins and Diabetes

Some evidence shows that insulin-dependent (type 1) diabetes is linked to consumption of dairy products in infancy.[45] A 2021 meta-analysis found that higher intake of cow's milk in childhood was associated with an 81% increased risk of type 1 diabetes.[46] In addition, the American Academy of Pediatrics observed up to a 30% reduction in the incidence of type 1 diabetes in infants who avoid exposure to cow's milk protein for at least the first three months of their lives.[47]

Health Concerns for Children and Infants

Milk proteins, milk sugar, fat, and saturated fat in dairy products pose health risks for children and can lead to obesity, diabetes, and heart disease. While low-fat milk is often recommended for decreasing obesity risk, a study published in the *Archives of Disease in Childhood* showed that children who drank 1% or skim milk, compared with those who drank full-fat milk, were not any less likely to be obese.[48] Moreover, a meta-analysis found no support for the argument that increasing dairy product intake decreases body fat and weight over the long term (>1 year).[49]

The consumption of cow's milk is not recommended for infants. The American Academy of Pediatrics recommends that infants below one year of age not be given cow's milk.[50] Not only is the iron in cow's milk hard for babies to absorb, but whole cow's milk can cause microscopic bleeding in infants' intestines.[51]

Colic is an additional concern with milk consumption. Up to 28% of infants suffer from colic during the first month of life.[52] Pediatricians learned long ago that cow's milk was often the reason. We now know that breastfeeding mothers can have colicky babies if the *mothers* consume cow's milk. Cow's milk proteins can pass through the mother's bloodstream, into her breast milk, and to the baby, causing symptoms in some infants.[53,54]

Additionally, children who consume cow's milk are more likely to develop food allergies and are more likely to suffer from chronic constipation.[55-58]

Skin Health

Lastly, dairy is associated with an increased risk of acne.[59] Dairy has also been identified as a common trigger for chronic, inflammatory skin conditions like eczema and psoriasis.[60,61] Drinking milk is associated with shortened telomeres (the caps on your genes), which are associated with premature aging and wrinkles.[62]

Conclusions

Milk and dairy products are not necessary in the diet and can even be harmful to health. It's best to consume a healthful diet of whole grains, fruits, vegetables, beans, peas, and lentils and replace cow's milk with nondairy milks like almond, soy, or cashew milk. These nutrient-dense foods can help you meet your nutrient requirements with ease—and without the health risks associated with dairy products.

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