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Cut dairy from your diet? You may be deficient in vitamin D, calcium

Alternative milks not required to have same nutrient value as dairy in Canada

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Gina and Jimmy Kim, shown here with two-year-old Aria and five-year-old Eden, have differing takes on whether they should be giving their children glasses of milk. (Katie Pedersen/CBC)

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Canadians are shying away from milk for ethical, environmental and health reasons, and the lack of a dairy as its own "food group" in the new Canada's Food Guide might have you thinking you had nothing to lose.

But experts say the reality is that giving up milk altogether could lead to deficiencies in essential nutrients like calcium, vitamin D and protein, if you're not making very conscious efforts to fill the void.

To determine what happens when you pass on a glass of milk, *Marketplace* spent months analyzing nutrition studies, interviewed doctors and dietitians, and reviewed one family's weeklong food diaries.

For decades, it was recommended that Canadians consume two to four servings of dairy a day. But when the revised food guide was introduced at the start of 2019, dairy was no longer listed an essential food group and was lumped into the protein category instead.

But experts say that unless your plate really looks like the one pictured in the new guide — with lots of dark greens, seeds and nuts — you're probably not meeting Health Canada's daily calcium recommendations. Most non-dairy food items have calcium concentrations that are relatively low, so you have to eat them in large quantities to meet the requirements.



Andrea Miller is a registered dietitian from Whitby, Ont. (David MacIntosh/CBC)

"It is possible to do this without including dairy," said Andrea Miller, a registered dietitian from Whitby, Ont. "It just means some really deliberate choices about what foods you choose and potentially how you cook."

Marketplace asked Miller to review the food diaries of an average Canadian family with young children. The Kims are like many Canadians these days: Conflicted over how much milk to drink — or whether they should drink it at all.

"I hear so many things about what's added in milk," said Gina Kim. "That's not good for the kids."

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Gina likes to get nutrients through whole foods like broccoli and green smoothies. She makes almond milk from scratch.

Her husband, Jimmy, on the other hand, grew up feeling that milk is an important part of a healthy diet. He doesn't hesitate to give it to his children, Eden, 5, and Aria, 2, when they ask.

"I feel like they should have milk any time — if they want it, they can have it," he said. "I've been drinking it my whole life; I think it's good for you."

Jimmy Kim thought he was getting plenty of nutrients by drinking at least one glass of milk a day and eating what many would consider a fairly balanced diet.

But according to Miller, both Gina and Jimmy were only getting 30 per cent of their daily calcium requirements. Although the Kim children were a bit closer to meeting their calcium requirements, Miller said they were still only getting 50 per cent of the recommended intake.

"This concerns me because I have a history of osteoporosis in my family," said Gina Kim.

'An awful lot of broccoli'

The calcium recommendation for Canadian adults and children is 1,000 milligrams a day, which you can get from approximately three glasses of milk. For young children, it's 700 mg.

But if you thought you could easily substitute a few dark green veggies to keep your calcium up, you are mistaken.

"If you're looking for broccoli to meet your calcium requirements, you're going to need to eat an awful lot of broccoli," said Miller.

To get 1,000 mg of calcium from broccoli you would have to eat three full bunches (approximately 1,800 grams); from kale, you would need about 20 cups chopped; and from sardines, you'd need about 20 fish with bones in a day.

A look at some of the calcium-rich foods that can help Canadians reach the recommended 1,000 mg daily intake. (Katie Pedersen/CBC)

Marketplace prepared plates for each member of the Kim family with a variety of calcium-rich foods that they would each have to add to their current diet in order to reach the 1,000 mg recommendation.

"I don't know that I could eat all this," Jimmy said when he saw his plate. "It almost looks like another daily meal."

Mixing and matching these foods to get to the requirement is a feat for any adult. But a Toronto pediatrician says it can be even harder for kids.

"A lot of children are sort of picky in what they eat," said Dr. Jonathon Maguire, a pediatrician at St. Michael's Hospital. "The new Canada Food Guide removed dairy as a food group and so that's sending messages, but at the same time, the nutrition recommendations for children have not changed."

Canada does have higher calcium requirements than other parts of the world. In the U.K., for example, the recommended daily intake is only 700 mg for adults and between 350 and 550 for children.

Health Canada points out that its new guidelines still include dairy as a source of protein, including lower-fat milk, lower-fat yogurt, and cheeses lower in fat and sodium.

In a statement to *Marketplace*, the ministry said that "the intent behind recommending lower-fat dairy is not to reduce total fat content; rather, it is to help reduce intakes of saturated fat, while encouraging foods that contain mostly unsaturated fat."

Added nutrients

"Do children need milk to grow and develop? No they don't," said Maguire. "But it does help for kids that maybe aren't getting all of the things in their diet that they need."

As for Gina Kim, she thought she was doing something healthy by making almond milk from scratch, which she gives to her kids. But she didn't realize much of the nutrient value that makes it a milk alternative is actually added afterward.

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Alternative milks are not standardized in nutrients, Maguire said, so even though many nut and coconut milks are fortified with vitamins, they vary in nutrient levels. And apart from soy milk, they often lack protein.

He's also concerned that many alternative milks have high levels of added sugar.

"I just think we need to be really careful right now in making sure that whatever products you pick up contain the nutrients that you think they have," Maguire said.

Dr. Jonathon Maguire is a pediatrician and child nutrition researcher with St. Michael's Hospital in Toronto. (Jonathon Maguire)

The Canadian Paediatric Society published a warning in 2017 about alternative milks.

"Following reports of infants and young children becoming malnourished and one death after being fed plant-based drinks as a main beverage, Dietitians of Canada is joining with the Canadian Paediatric Society to urge parents to select beverages carefully for their children," [the report read](#).

It also advised that the only milk alternative that is nutritionally equivalent to dairy is fortified soy beverage.

'Impossible to get enough vitamin D through food'

Calcium isn't the only reason Canadians might drink milk. It also included vitamin D, important for calcium absorption and vital for maintaining healthy bones.

Food sources don't contain vitamin D in significant quantities, and although it does not exist naturally in milk, dairy products have been Canada's main source of dietary vitamin D for decades.

Often referred to as the "sunshine" vitamin, it is produced when UV rays hit the skin and synthesize into vitamin D. But Canadians experience long winters, when their skin is often covered up, which can result in vitamin D deficiency.

That deficiency can lead to rickets — a disease that can cause softening of the bones and result in physical distortion.

The illness used to be pervasive in Canada. In 1946, nutrition surveys in British Columbia and Saskatchewan estimated that 50 per cent of schoolchildren had evidence of past rickets.

When the revised Canada's Food Guide was introduced at the start of 2019, dairy was no longer listed an essential food group and was instead lumped into the protein category. (Ousama Farag/CBC)

The government launched a public health initiative in 1965 that would put mandatory vitamin D supplements in milk as a way to get it into kids' diets effortlessly.

Almost everyone drank milk at the time, and the initiative was successful in curbing rickets. Rates of rickets in children today are around three in 100,000, although rates are higher in Canada's North where access to milk is low, and many citizens have particularly high rates of lactose intolerance.

"For a lot of people, if they're not consuming milk products regularly, they're not getting enough vitamin D," said Miller. "It's virtually impossible to get enough vitamin D through food in this country."

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If you're choosing to avoid milk, she said a vitamin D supplement instead is "the way to go."

Miller said that although there are valid reasons Canadians are turning away from milk, sometimes the decision is based on concerns about the health of the cow and additives in the milk.

"The things that I hear about the growth hormones and antibiotics, things like that ... makes me a little bit concerned," said Gina Kim.

Canada does have higher calcium requirements than other parts of the world. In the U.K., for example, the recommended daily intake is only 700 mg for adults and between 350 and 550 for children. (John Robertson/CBC)

But Miller said those aren't concerns to worry about in Canada.

"In Canada, we do not allow [growth] hormones in our milk supply at all," she said, noting that Canada has "very rigorous" standards around dairy products.

"And if a cow does become sick on a dairy farm and does need antibiotics ... that cow is pulled from the milk chain supply, goes on their antibiotics, that milk is retested prior to that cow going back into the supply."

If milk is found to be contaminated after testing, the vat is discarded and the farmer is fined.

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Health Canada says it is proposing an increase in the amount of vitamin D added to milk and margarine to help Canadians meet the recommended intake levels that were updated in 2011. Under the new regulations, this will be two µg/100 ml for milk and 26 µg/100 g for margarine, which is approximately twice the current requirement.

There's still no requirement, however, on alternative milks. Currently, the only foods that have mandatory vitamin D fortification are milk, margarine, infant formula, milk products (like evaporated or powdered milk) and liquid egg substitutes.

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