NUTRITION

Drinking cow's milk alters vitamin D and iron stores in young children

New findings suggest that in most young children, two cups of cow's milk per day is sufficient to maintain healthy levels of vitamin D without having a negative effect on iron stores.

Many international organizations recommend that children drink milk to promote bone health. However, cow's milk is thought to have a

negative effect on iron stores in young children. The effect of different levels of milk consumption on stores of vitamin D and iron have now been examined.

A parent-completed data-collection form was used to gather demographic and nutritional information for 1,311 children aged 2–5 years from Toronto, Canada. Blood samples were also taken to measure serum levels of 25-hydroxyvitamin D and ferritin. Weight, height and skin pigmentation were also measured.

The researchers found that as consumption of cow's milk increased, levels of 25-hydroxyvitamin D also increased, but levels of ferritin decreased. Each additional 250 ml cup of cow's milk increased 25-hydroxyvitamin D levels by 6.5% and reduced ferritin levels by 3.6%. Vitamin D supplementation, light skin pigmentation, summer season and lower BMI increased levels of 25-hydroxyvitamin D, and winter season increased levels of ferritin.

The authors of the paper suggest that these findings indicate that a trade-off exists between increasing 25-hydroxyvitamin D levels and decreasing ferritin levels with increasing consumption of cow's milk. "On average, ~2 cups (500 ml) of cow's milk per day was sufficient to maintain median 25-hydroxyvitamin D >75 nmol/l with minimal impact on median serum ferritin," write the authors. However, the authors point out that children with darker skin pigmentation not receiving vitamin D supplements during the winter require 3–4 cups of milk a day to achieve optimal levels of 25-hydroxyvitamin D, which could decrease levels of ferritin.

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