DAIRY RESEARCH INSTITUTE™
NUTRITION • PRODUCTS • SUSTAINABILITY

# Consequences of Removing Dairy Foods from the Diets of Children Ages 9 to 18 Years

The dairy group (milk, cheese and yogurt) contributes substantial amounts of nutrients to the diet of 9-18 year old children.[1]

## Calcium

- Calcium is a nutrient of public health concern according to the 2010 Dietary Guidelines for Americans.[2]
- Children 9-18 years old consume 1031 mg of calcium daily on average. If dairy was removed from the diet, average intake would decrease by 64% to only 376 mg of calcium per day.
- Consequently, the number of 9-18 year olds who would fall well below the recommended intakes for calcium would increase substantially.

## Potassium

- Many children 9-18 years old are consuming less than recommended intakes for potassium,[3] a nutrient of public health concern according to the 2010 Dietary Guidelines for Americans.[2]
- Removing dairy from the diet would decrease potassium intake by 30% from 2344 mg to 1651 mg daily.
- This would result in an even greater number of children falling well below the recommended intake for potassium.

## Phosphorus

- Sixteen percent of boys and 34% of girls ages 9-13 years old are not meeting the recommended intakes for phosphorus.[4]
- Fourteen percent of boys and 51% of girls ages 14-18 years old similarly are not meeting the recommended intakes for phosphorus.[4]
- A 40% decrease in phosphorus intake would result from removing dairy from the diet. Intakes would fall to 804 mg from current average intake of 1338 mg per day with dairy.

## Protein

- Most children ages 9-13 years old are meeting the recommended intakes for protein (0.76 g per kg body weight).[3]
- Most boys ages 14-18 years old are meeting the recommended intakes for protein (0.73 g per kg body weight), however, 14% of girls this age are consuming less than the recommended amount (0.71 g per kg body weight).[3]
- Eliminating dairy would negatively impact children's protein intake. They would consume about one-fourth less than they would with dairy (78.8 g per day with dairy, 59.4 g without).

## Vitamin A

- Thirteen percent of boys and about one-third (34%) of girls 9-13 years old have inadequate intakes of vitamin A in their diet (445 retinol activity equivalents for boys and 420 retinol activity equivalents for girls).[3]
- More than half of children 14-18 years old similarly have inadequate intakes of vitamin A (55% of boys and 54% of girls).[3]

- Children aged 9-18 years old currently consume 574 retinol activity equivalents in their diets. Removing dairy foods would cause a 44% drop leaving only 323 retinol activity equivalents in their diets.

**Vitamin D**

- Vitamin D is a nutrient of public health concern according to the 2010 Dietary Guidelines for Americans.[2]
- The dairy group contributes almost 70% of the vitamin D intake in the diet of 9-18 year olds. The average daily intake for total dietary vitamin D is 5.4 µg.
- Removing dairy from the diet would cause a significant decrease of vitamin D in the diet and make meeting recommended intakes even more challenging.

**Vitamin $B_{12}$**

- Most children ages 9-13 years old (over 97%) are meeting their recommended intakes of vitamin $B_{12}$, 1.5 µg per day.[3]
- Most children ages 14-18 years old are also meeting their recommended intakes of vitamin $B_{12}$, 2.0 µg per day.[3]
- Vitamin $B_{12}$ intake would decrease by 40% if the dairy group was not included in the diet. On average, children 9-18 years old get 5.43 µg daily and that would drop to only 3.28 µg without compensation from other foods.

**Riboflavin**

- Most children are meeting the recommended intakes for riboflavin.[3]
- Children get 2.3 mg of riboflavin from their diets; 0.7 mg is supplied by dairy. Removing dairy foods would decrease their riboflavin intake by 39%.

**Magnesium**

- Twenty-two percent of boys and 30% of girls 9-13 years old are not meeting the recommended intakes for magnesium.[4]
- Many children 14-18 years old similarly are not meeting the recommended intake for magnesium.[4]
- A 23% drop in magnesium would occur if dairy were removed from the diet. With dairy, kids get 245 mg of magnesium per day but if dairy were removed from the diet they would only get 189 mg per day.

**Zinc**

- Most boys 9-18 years old are meeting the recommended intakes for zinc.[3]
- Ten percent of girls 9-13 years and over a quarter of girls 14-18 (26%) have inadequate intakes of zinc in their diets.[3]
- Eliminating dairy foods would decrease zinc intake significantly by 21%. Children aged 9-18 years would only get 9.5 mg in their diet as opposed to 12.1 mg with dairy.

**Fat**

- It is recommended that children ages 9-18 years old get 25-35% of their total daily calories from fat.[2]
- The average fat intake for children ages 9-18 years old is 85 g, which represents 34% of their average daily calorie intake (2263 total calories).
- Without dairy products in the diet, 33% of children's calories would come from fat (635 calories from fat out of 1945 calories total).

Values include dairy (milk, cheese and yogurt) in food mixtures (e.g. pizza, smoothies).

---


1. Dairy Research Institute™. NHANES (2003-2006). Data Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey Data. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, [2003-2004; 2005-2006]. [http://www.cdc.gov/nchs/nhanes.htm]
2. U.S. Department of Health and Human Services and U.S. Department of Agriculture. Dietary Guidelines for Americans, 2010. 7th Edition, Washington, DC: U.S Government Printing Office, December 2010.
3. Moshfegh, Alanna; Goldman, Joseph; and Cleveland, Linda. 2005. *What We Eat in America*, NHANES 2001-2002: Usual Nutrient Intakes from Food and Water Compared to Dietary Reference Intakes. U.S. Department of Agriculture, Agricultural Research Service.
4. Moshfegh, Alanna; Goldman, Joseph; Ahuja, Jaspreet; Rhodes, Donna; and LaComb, Randy. 2009. *What We Eat in America*, NHANES 2005-2006: Usual Nutrient Intakes from Food and Water Compared to 1997 Dietary Reference Intakes for Vitamin D, Calcium, Phosphorus, and Magnesium. U.S. Department of Agriculture, Agricultural Research Service.


Last Updated: March 31, 2011