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Consequences of Removing Dairy Foods from the Diet of Children Ages 2 to 8 Years

The dairy group (milk, cheese and yogurt) contributes substantial amounts of nutrients in the diet of 2-8 year old children.[1]

Calcium

- Calcium is a nutrient of public health concern according to the 2010 Dietary Guidelines for Americans.[2]
- Children 2-8 years old consume 980 mg of calcium daily on average. If dairy was removed from the diet, average intake would decrease by 69% to only 306 mg calcium per day.
- Consequently, the number of 2-8 year olds who would not meet the recommended intakes for calcium would increase substantially.

Potassium

- Many children 2-8 years old are consuming below 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 36% from 2148 mg to 1368 mg daily.
- This would result in an even greater number of children not meeting potassium recommendations.

Phosphorus

- Most children ages 1-3 years old and 4-8 years old are meeting the daily recommended intakes of phosphorus (380 mg and 405 mg, respectively).[4]
- A 48% decrease in phosphorus intake would result from removing dairy from the diet.
- Intakes would fall to 606 mg from current average intake of 1155 mg per day with dairy.

Protein

- Most children ages 1-3 years old and 4-8 years old are meeting the daily recommended 0.87g per kg body weight and 0.76 g per kg body weight, respectively, for protein.[3]
- Eliminating dairy would negatively impact young children's protein intake. They would consume one-third less than they would with dairy (60.5 g per day with dairy, 40.7 g without).

Vitamin A

- Most children ages 2-8 years old are consuming the recommended amount of vitamin A (210 retinol activity equivalents per day for 1-3 year olds and 275 retinol activity equivalents per day for 4-8 year olds).[3]
- Young children currently consume 567 retinol activity equivalents per day on average. Removing dairy would cause a 44% drop leaving only 316 retinol activity equivalents in their diet.

Vitamin D

- Vitamin D is a nutrient of public health concern according to the 2010 Dietary Guidelines for Americans.[2]
- The average daily intake of vitamin D for 2-8 year olds is 6.4 µg.
- Dairy is the major contributor of vitamin D in their diet and removing dairy foods would cause a significant decrease (81%) in total intake to only 1.2 µg per day, making meeting recommended intakes even more challenging.

Vitamin B_{12}

- Most children ages 1-3 years old and 4-8 years old are meeting their daily recommended intakes of vitamin B_{12}, 0.7 µg and 1.0 µg, respectively.[3]
- Vitamin B_{12} intake would decrease by 46% if the dairy group was not included in their diet.
- On average, children 2-8 years old get 5 µg daily and that would drop to only 2.7 µg without compensation from other foods.

Riboflavin

- Most of the population ages 1-3 years old and 4-8 years old are meeting the daily recommended intakes (0.4 mg and 0.5 mg, respectively) for riboflavin.[3]
- Children get 2.1 mg of riboflavin from their diets; almost 1 mg is supplied by dairy. Removing dairy foods would decrease their riboflavin intake by 45%.

Magnesium

- Most children 2-8 years old are meeting their estimated needs for magnesium, 65 mg per day for 1-3 year olds and 110 mg per day for 4-8 year olds.[4]
- A 29% drop in magnesium would occur if dairy were removed from their diet.
- With dairy, kids get 209 mg of magnesium per day but if dairy were removed from their diet they would only get 148 mg per day.

Zinc

- The majority of children ages 1-3 and 4-8 years old are meeting the recommend intakes for zinc, 2.5 mg and 4.0 mg per day, respectively. [3]
- Eliminating dairy products would decrease zinc intake significantly by 27%.
- Younger children would get only 7 mg in their diet as opposed to 10 mg with dairy.

Fat

- It is recommended that children ages 2 to 3 years old get 30-40% of their total calories from fat and children ages 4 to 8 years old get 25-35% of their total calories from fat.[2]
- The average fat intake for children ages 2 to 8 years old is 65 g which means 33% of their daily calories (1782 total calories) are coming from fat on average.
- Without dairy products in the diet, only 31% of younger children's calories would come from fat (453 calories from fat out of 1439 calories total).

Values include dairy in food mixtures (e.g. pizza, smoothies).

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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.

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