

## Lead Article

## Effect offlavored milk vs plain milk on total milk intake and nutrient provision in children

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Concerns surrounding added sugars and their effects on health have created a need to review the literature to assess consumption offlavored milk, consumer preferences for flavored milk, behavior related to the intake offlavored milk, and the effect offlavored milk on the diet and health of children. A review of the literature was performed using the following keywords: milk, flavored, flavoured, sweetened, and chocolate. The search was limited to articles published in English, studies conducted in children, and studies reporting on prevalence of consumption, trends in consumption, preferences for flavored milk, intakes of milk and nutrients, and health outcomes. Fifty-three studies were included. Flavored milk receives the highest palatability rating among children. Children drink more flavored milk than plain milk and, when flavored milk is not available, children drink less plain milk and, consequently, less milk overall. Consumers offlavored milk have a higher total milk intake. Micronutrient intake among consumers offlavored milk is similar to that among consumers of plain milk, while intakes of energy and sugars vary, owing to differences in reporting across studies. There is no association between flavored milk intake and weight status among normal-weight children, and some contradictory effects offlavored milk intake have been observed in subgroups of overweight children. Flavored milk is a palatable beverage choice that helps children to meet calcium targets. Further research to test the effect offlavored milk consumption among overweight children is warranted.

## INTRODUCTION

Worldwide, calcium and potassium have been identified as nutrients of concern, with many children not meeting the recommended intakes,<sup>1-4</sup> especially teenage girls.<sup>2,4,5</sup> Recommendations for intake of dairy foods (preferably low-fat) in developed countries range from 2 to 3 servings (500 mL total) for children under 9 years of age and from 3 to 5 servings (600 mL) for adolescents.<sup>1</sup> A driving force in children not meeting calcium targets may be the worldwide decline in milk consumption among children and adolescents and the substitution of milk with less healthy beverages as children get older.<sup>1</sup> It is important to identify behavior related to

milk consumption so that evidence-based strategies can be implemented to help children meet their nutrient targets.

As milk is the most popular type of dairy food among children and the single largest source of dietary calcium among children in developed countries such as the United States, Finland, and Australia,<sup>1,6-8</sup> one of the recommended strategies to increase consumption of milk includes flavoring milk.<sup>5,7,9-13</sup> Flavored milk or other sweetened milk is a nutrient-rich beverage that has the same nutrient profile of plain milk, but with added sugars in varying amounts and with or without other additives (such as processing aids), depending on whether it is homemade or ready to drink.

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