UNIVERSITY OF WASHINGTON
Center for Public Health Nutrition

Replacing Juice with Fruit: Nutrition and Economic Effects

Results from a study of a nationally representative sample of 7,000 children and adolescents

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Juice is an important source of fruit and nutrients

Fruit juice makes up a substantial part of the total fruit intakes of children in the United States and is a major contributor to their total nutrient intake. The 2010 Dietary Guidelines for Americans recommends that no more than half of fruit servings be from juice, while others recommend limiting fruit juice to one or two servings per day.[1-3]

Researchers at the University of Washington Center for Public Health Nutrition used data from the National Health and Nutrition Examination Survey to examine the nutritional and economic consequences of replacing fruit juice with whole, frozen and canned fruit.[4]

- Juice is a key source of fruit and nutrients, but whole fruits are recommended over juice.
- Replacing juice with equivalent fresh, whole fruit can reduce calories and increase fiber but raises food costs.
- Replacing juice with canned and frozen fruits has little impact on food costs but increases fiber intake.

Benefits of replacing juice with whole fruit

1. **Fewer calories consumed**. Replacing juice with fresh fruit (e.g., replacing apple juice with fresh apple) resulted in a 56 calorie drop.
2. **Fiber intake increases**. Substituting juice with the top three most commonly consumed fruits (banana, apple and orange) resulted in a 25% to 32% increase in fiber. While substituting juice with lower-cost fruit substantially raised fiber intake, it resulted in minimal reductions in energy (19 calorie reduction).
3. **Vitamin C stays at recommended levels**. Potassium and calcium were slightly reduced and vitamin C was significantly reduced. Despite this, the percentage of children consuming recommended amounts of vitamin C remained very high.

Replacing juice with fruit may increase costs by between 5-13%

Many consumers and institutions choose fruit juice because it is convenient and inexpensive compared to whole fruit. Our study found that replacing juice with comparable fresh fruit increased cost by 13%. Replacing juice with lower-cost fruit (e.g., frozen and canned) increased costs by only 1.5%. Substituting juice with the three most commonly consumed fruits resulted in an increase in cost of 4%.

Replacing juice with fruit in children's diets may reduce calories and increase fiber

Complete replacement of 100% fruit juice with equivalent whole, fresh fruit may come at the cost of lower intakes of some vitamins and minerals and slightly higher food costs. However, replacing juice with fruit has the potential to reduce calories and increase dietary fiber. Replacing juice with lower cost canned and frozen fruits can help families, child care centers and schools improve children's intakes of fiber while keeping costs under control.

References

[1] Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 2010.
[2] Committee on Nutrition. The Use and Misuse of Fruit Juice in Pediatrics. *Pediatrics. 2001 May;107(5):1210-3.*
[3] Institute of Medicine. Committee on Nutrition Standards for National School Lunch and Breakfast Programs, 2009.
[4] Monsivais P, Rehm CD. Potential nutritional and economic effects of replacing juice with fruit in the diets of children in the United States. *Arch Pediatr Adolesc Med. 2012; 166:459-464.*

For more information see www.cphn.org

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