

Fruit Juice and Child Health

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In recent years, as the prevalence and severity of obesity in childhood and adolescence have increased, the role of individual items in the diet of children, such as 100% fruit juice, has become controversial. Although fruit is an important part of children's diets, many have come to consider fruit juice in the same category as sugar-sweetened beverages, such as soda, and become concerned about the role of the natural sugars in fruit juice in increasing the risk and severity of obesity.

This concern has led to discussion as to whether 100% fruit juice should be recommended at all for pediatric consumption or included as part of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) package provided for infants and small children. Furthermore, anecdotally, clinicians have described the experience of parents expressing the belief that they have created a healthier diet for their overweight or obese child by substituting fruit juice for sugar-sweetened sodas.

In contrast, there has been substantial concern about whether children and adolescents receive enough fruits and vegetables in their diet. This concern is particularly true of older children (aged >9 years) who do not meet fruit intake requirements. Although whole fruit intake is recommended by many sources, notably the Dietary Guidelines for Americans (DGA), up to one-half of the recommended servings can be provided, per DGA guidelines, as 100% fruit juice.¹ In general, a 6-oz glass of fruit juice equals 1 fruit serving and thus the emphasis in the guidelines on portion size.

There are potential benefits to providing some fruit intake as 100% fruit juice. Fruit juice presents a form of fruit that may be more flexible in its use in that it is easily portable and storable. It also resists spoiling and thus has a longer shelf life. Fruit juice is also palatable and easy to consume. In addition, epidemiologic studies have frequently shown that fruit juice is a component of a high-quality diet pattern and, in adults, can potentially decrease the risk of obesity.²

Decisions about diet for individuals and for policy should be made based on evidence. In this issue of *Pediatrics*, Auerbach et al³ present the results of a meta-analysis of studies focused on the relationship of intake of fruit juice and risk of obesity in children. They found only a small effect of a single serving of fruit juice on BMI change in small children 1 to 6 years of age and no effect in older children. These findings are reassuring that small amounts of fruit juice are not likely to be directly linked to obesity development. They furthermore support American Academy of Pediatrics (AAP) guidance, both previously published and in an upcoming revision, which recommends limits on fruit juice consumption by children, with greater limits for small children.^{4,5}

What does this mean for public policy, including that of government programs such as the WIC program? In general, pediatricians should support policies limiting the consumption of fruit juice and promote consumption of whole fruit by toddlers and young children, including through the WIC program. However, it means that there is no strong evidence suggesting a benefit or rationale for a complete ban on fruit

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juice in these programs. Instead, limits (particularly on portion size) consistent with AAP and DGA policies can be advocated and parents cautioned about risks associated with high intakes. The National Academy of Medicine has recently released guidance for the WIC program; this guidance recommends continuation of provision of 100% fruit juice for children aged >1 year while limiting the amount consistent with AAP guidelines and the role of the WIC program as a supplemental feeding program.⁶ Older children in particular may benefit from fruit juice intake to close the gap with total recommended fruit intake, and this approach is supported by the accompanying study by Auerbach et al.³ In general, there is no rationale for providing fruit juice to children aged <1 year except in the rare circumstances of it being specifically recommended by a pediatric provider for medical indications.

Important gaps remain in our knowledge base. These gaps include uncertainty about the effects of juice in small amounts on dental caries and the effects of different forms of 100% juice products on weight and dental caries. Although these topics deserve further research, the very limited

amount of data should lead to caution about premature conclusions that are not evidence-based.

In summary, recent data and an unbiased review of the literature support a limited role for fruit juice as a part of the diet of children.

Consistent with the recent literature, smaller amounts are recommended by the AAP for children aged <7 years than for older children. Juice should not be given that is unpasteurized, and juice should not be provided in cups that are available for drinking throughout the day. Further evidence-based findings are needed to refine these recommendations. The banning of fruit juice or failure to allow it in government food programs outside the first year of life is not consistent with the available evidence.

ABBREVIATIONS

AAP: American Academics of Pediatrics
DGA: Dietary Guidelines for Americans
WIC: Special Supplemental Nutrition Program for Women, Infants, and Children

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