

## ONLINE EXCLUSIVE

# When is it OK for children to start drinking fruit juice?

## Evidence-based answer

Children should be at least 6 months of age (strength of recommendation [SOR]: **C**, expert opinion) and parents should provide only 100% fruit juice in a cup (not a bottle). Intake should be limited to 4 to 6 oz a day until 12 months of age (SOR: **C**, expert opinion). It's important to reiterate to parents that breastfeeding is the preferred source of infant nutrition for the first 6 (preferably 12) months of life (SOR: **A**,

systematic reviews).

Sugar-sweetened fruit drinks have been linked to excess weight gain and obesity (SOR: **B**, cohort studies with mixed results). Sugar-sweetened beverages provide little nutritional benefit to children and should be restricted (SOR: **C**, expert opinion). See the **TABLE** for definitions of fruit juice, fruit drinks, and sugar-sweetened beverages.

## Evidence summary

One of every 6 American children is overweight or at risk of becoming overweight.<sup>1</sup> Overweight children are more likely than normal-weight children to be overweight as adults; they're at significant risk for morbidity and mortality from hypertension, cardiovascular disease, and diabetes in adulthood. Establishing sound nutritional habits—including appropriate consumption of fruit juices, fruit drinks, and other sugar-sweetened beverages—early in life plays an important role in preventing overweight in later childhood and adulthood.<sup>2</sup>

### Fruit juice/obesity link is controversial

During the transition to table foods between 4 and 11 months of age, the top 3 nonmilk sources of carbohydrate in an infant's diet are infant cereal, 100% juice, and bananas.<sup>2</sup> One in 5 infants

routinely drinks juice before 6 months of age.<sup>3</sup> Consuming 100% juice and fruit-flavored drinks can contribute to excess energy intake and displace other nutrient-dense foods in the child's diet.

The role of fruit juice consumption in childhood obesity is controversial. In 1 group of 168 children 2 to 5 years of age, 9% of children who drank >12 oz of fruit juice per day were overweight, compared with 3% of those who drank <12 oz daily.<sup>4</sup>

A recent review of 21 studies found 6 (3 longitudinal and 3 cross-sectional) that supported a relationship between juice intake and weight and 15 (9 longitudinal and 6 cross-sectional) that suggested no link between 100% fruit juice consumption and overweight in children or adolescents.<sup>5</sup>

Regardless of the relationship between fruit juice and obesity, it is important to emphasize that breast

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## FAST TRACK

**Parents giving their infants juice should give them only 100% fruit juice in a cup—not a bottle.**

TABLE

### What's fruit juice and what's not

TERM	DEFINITION
<b>Fruit juice</b>	Beverage containing 100% fruit juice from the liquid naturally occurring in the fruit tissue; contains no artificial sweetener
<b>Fruit drink</b>	Beverage containing <100% natural fruit juice. Includes sweetened fruit juice reconstituted from concentrate and fruit-flavored drinks
<b>Sugar-sweetened beverage</b>	Fruit drinks, fruit "ades," and carbonated beverages (including sodas and cola beverages) to which sweeteners have been added

milk provides essential nutrients and immune protection for the growing infant. Breast milk should remain the recommended source of nutrition through the first year of life.<sup>6,7</sup>

#### **Sugar-sweetened drinks: Short on nutrition, long on risk**

Sugar-sweetened beverages (labeled as fruit drinks) often replace whole fruits in childhood diets.<sup>8</sup> As a result, children may fail to meet recommendations for intake of whole fruits and vegetables, which contain fiber and nutrients essential to growth.

Consumption of fruit drinks and other sugar-sweetened beverages by American children has increased 135% since 1977; such drinks account for roughly 9% of daily energy intake.<sup>9</sup> Data from the Feeding Infants and Toddlers Survey (FITS) indicate that 100% fruit juice and sugar-sweetened beverages are now the second and third leading sources, respectively, of energy (and carbohydrates) for American children between 1 and 2 years of age.<sup>3</sup>

Data from the National Health and Nutrition Examination Survey (NHANES) suggest that overweight children and adolescents consume more sugar-sweetened beverages than those who are not overweight.<sup>10</sup> Other cohort data show that children who regularly consume sugar-sweetened beverages are twice as likely to be overweight by 5 years of age as children who don't.<sup>11</sup>

However, 1 cohort of 521 children followed longitudinally from 5 to 9 years showed no association between sugar-sweetened beverage intake and body fat.<sup>12</sup>

A recent systematic review of 30 studies (15 cross-sectional, 10 prospective cohort, and 5 experimental trials) supports a link between consumption of sugar-sweetened beverages and childhood obesity.<sup>13</sup>

#### **What about tooth decay?**

Excess intake of both sugar-sweetened beverages<sup>14</sup> and fruit juice<sup>15</sup> has been associated with increased risk of dental caries. Excess intake is defined as more than 6 oz per day in children 1 to 6 years of age and more than 12 oz per day in children 7 to 18 years. To help reduce the risk for dental caries, children should drink juice from a cup.

#### **Recommendations**

The American Academy of Family Physicians,<sup>16</sup> American Academy of Pediatrics,<sup>6</sup> American Heart Association,<sup>17</sup> and World Health Organization<sup>18</sup> all recommend breast milk as the preferred source of infant nutrition for the first 6 (preferably 12) months of life. The US Preventive Services Task Force recently emphasized the need for primary care physicians to further promote breastfeeding efforts.<sup>19</sup>

Infants shouldn't be given fruit juice before 6 months of age.<sup>17</sup> If juice is offered, it should be 100% fruit juice in a cup, not a bottle. Children 1 to 6 years of age should drink no more than 4 to 6 oz of 100% fruit juice per day. Children 7 to 18 years of age should limit intake to 12 oz of 100% fruit juice per day.<sup>17</sup> Infants, children, and adolescents shouldn't drink unpasteurized juice.<sup>20</sup>

The American Heart Association recommends that children 1 to 3 years of age consume the equivalent of 1 cup of whole fruit per day. Children from 4 to 13 years should consume 1.5 cups per day.<sup>17</sup> ■

#### **FAST TRACK**

**Remind parents that breastfeeding is the recommended source of infant nutrition for the first 6—preferably 12—months of life.**

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**FAST TRACK**

**Sugar-sweetened beverages (labeled as fruit drinks) do not replace whole fruits, which contain fiber and nutrients essential to growth.**