



**100% FLORIDA  
ORANGE JUICE:  
A HEALTHYFIT  
FOR CHILDREN'S  
DIETS**



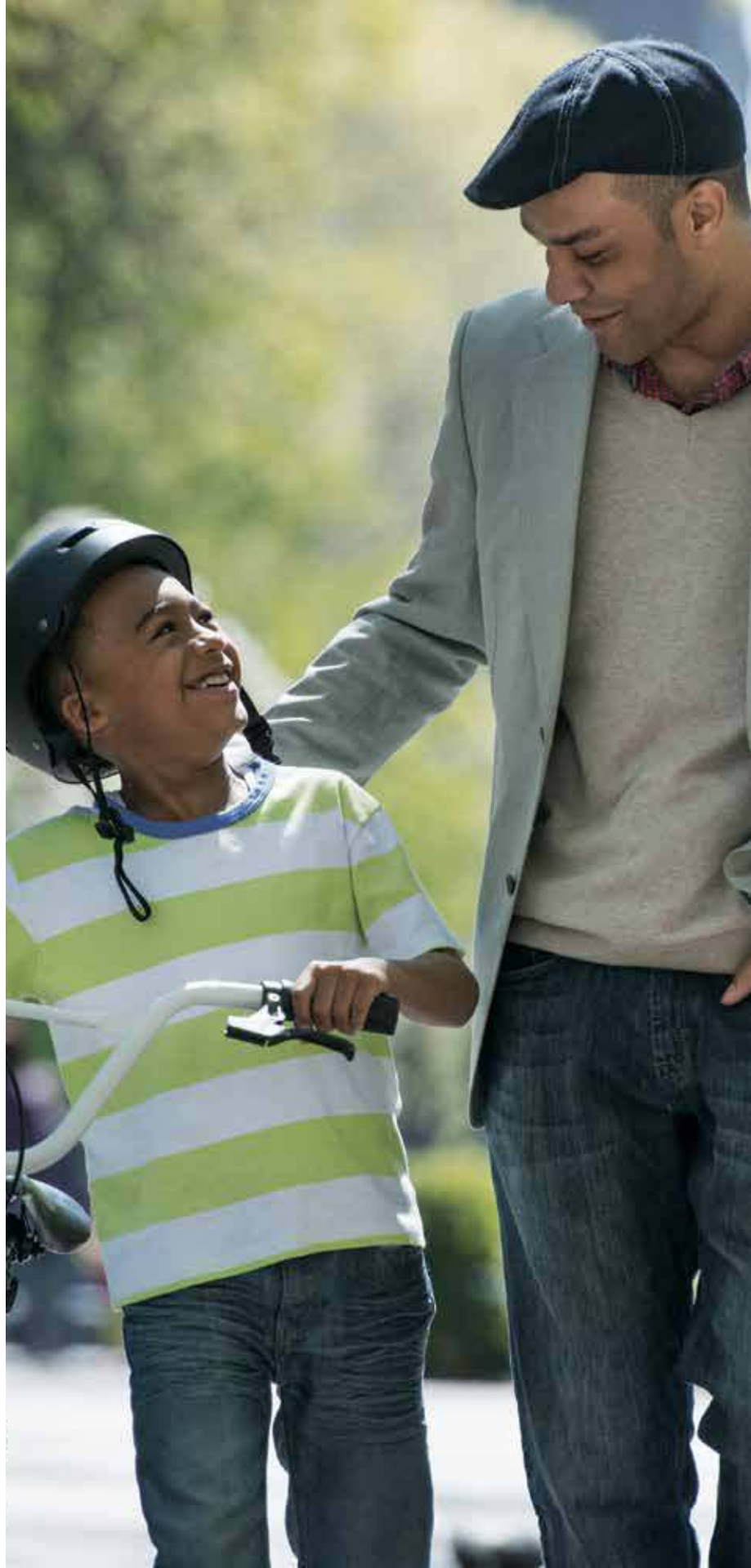
# MAKE IT COUNT

## THE FACTS ABOUT 100% FLORIDA ORANGE JUICE AND FRUIT INTAKE

With the ongoing discussion about the role of beverages in health, consumers continue to be challenged to make informed beverage choices. With so many options available, it's important to know that naturally nutrient-dense beverages, such as 100% Florida Orange Juice, can and should be part of a healthful diet for children and adolescents.

100% Florida Orange Juice can help children get the nutrients they need and meet fruit intake recommendations.

Consuming 100% orange juice or 100% fruit juice has been associated with improved diet quality and nutrient adequacy in children.<sup>1-4</sup>





**MANY CHILDREN MISS OUT ON THE NUTRIENTS THAT WHOLE FRUIT AND 100% FRUIT JUICE PROVIDE.**

## FRUIT CONSUMPTION BY CHILDREN IN AMERICA

Few children consume the recommended amounts of fruit each day. Based on 2007-2010 National Health and Nutrition Examination Survey (NHANES) data, 60 percent of children ages 1 to 18 do not meet daily fruit intake recommendations.<sup>5</sup> Children tend to consume less fruit as they get older.<sup>6</sup>

On average, only younger children meet fruit intake recommendations while adolescents have low intakes with at least 75 percent not meeting daily recommendations.<sup>5</sup>

### Fruit Consumption Gaps in Children and Adolescents<sup>5</sup>

AGE (YEARS)	MEAN TOTAL FRUIT INTAKE (CUP EQUIVALENTS)	FRUIT INTAKE GOALS/ GOAL RANGES (CUP EQUIVALENTS*)
1-3	1.5	1 (for ages 2-3)
4-8	1.2	1-1.5
9-13	1.1	1.5
14-18	0.8 (Females) 1.0 (Males)	1.5 (Females) 2 (Males)

\*According to USDA MyPlate ([www.ChooseMyPlate.gov](http://www.ChooseMyPlate.gov))

One glass of 100% Florida Orange Juice is a convenient and easy way to complement whole fruit intake to help children meet daily recommendations and help fill nutrient gaps. One 8-oz. glass is a good source of potassium and folate and an excellent source of vitamin C—three important nutrients underconsumed in the United States.<sup>7</sup>

## 100% FLORIDA ORANGE JUICE AND DIETARY GUIDELINES FOR AMERICANS

Parents look for guidance when making healthful beverage choices for their children. 100% Florida Orange Juice is **naturally nutrient-dense and a healthy beverage option with no added sugars.**

The 2010 Dietary Guidelines for Americans recognize that **100% fruit juice supplies a substantial amount of nutrients per serving**, and identifies it as a way to help meet daily fruit intake recommendations.<sup>7</sup> According to the Guidelines, the majority of fruit recommended should come from whole fruits, but when juices are consumed, 100% juice should be encouraged.

**CHOOSE WATER, FAT-FREE MILK, 100% FRUIT JUICE, OR UNSWEETENED TEA OR COFFEE OVER SUGAR-SWEETENED DRINKS.**  
*- 2010 DIETARY GUIDELINES FOR AMERICANS<sup>7</sup>*





## 100% FLORIDA ORANGE JUICE AND USDA MYPLATE

### USDA MyPlate Fruit Group includes:

- Fresh Fruit
- 100% Fruit Juice
- Canned Fruit
- Frozen Fruit
- Dried Fruit
- Whole Fruit
- Cut-up Fruit
- Pureed Fruit

One 8-oz. serving of 100% Florida Orange Juice = one cup of fruit

One 4-oz. serving of 100% Florida Orange Juice = one-half cup of fruit

### Daily Fruit Intake Recommendations for Children and Adolescents<sup>8</sup>

CHILDREN	2-3 years old	1 cup
	4-8 years old	1-1.5 cups
GIRLS	9-13 years old	1.5 cups
	14-18 years old	1.5 cups
BOYS	9-13 years old	1.5 cups
	14-18 years old	2 cups

Note: These amounts are appropriate for individuals who get less than 30 minutes per day of moderate physical activity, beyond normal daily activities. Very active children may be able to consume more while staying within calorie needs.

**“Most people benefit from eating more fruits and vegetables every day. All forms count: fresh, frozen, canned, dried, and 100% juice.”<sup>9</sup>**

- Produce for Better Health Foundation

**“Inclusion of fruit juice, in amounts consistent with dietary recommendations, as part of a healthy diet can provide important nutrients without increasing weight in children.”<sup>10</sup>**

- O’Neil et al. American Journal of Health Promotion, 2010

**“100% fruit juice or reconstituted juice can be a healthy part of the diet when consumed as part of a well-balanced diet.”<sup>11</sup>**

- American Academy of Pediatrics Committee on Nutrition, 2001



**100% FLORIDA  
ORANGE JUICE CAN  
HELP CHILDREN GET  
THE NUTRIENTS THEY  
NEED AND HELP MEET  
DAILY FRUIT INTAKE  
RECOMMENDATIONS.**

## 100% FLORIDA ORANGE JUICE IS APPROPRIATE IN CHILDREN'S DIETS

100% orange juice is a smart beverage choice for children because it is more nutrient dense than other commonly consumed 100% fruit juices.<sup>12</sup> Researchers who analyzed data from 2003-2006 NHANES reported that children who consume 100% orange juice tend to have significantly higher intakes of the following nutrients compared to non-consumers:

**VITAMIN C**                      **FOLATE**  
**POTASSIUM**                    **DIETARY FIBER**  
**VITAMIN B<sub>6</sub>**                    **MAGNESIUM**

In addition, diet quality (measured by the Healthy Eating Index (HEI-2005)) of children consuming 100% orange juice was significantly higher compared to non-consumers, as was intake of total fruit, fruit juice and whole fruit.<sup>13</sup>

Milk and 100% fruit juice complement each other in children's diets.<sup>14</sup> Data suggest that drinking 100% orange juice is not linked to decreased milk consumption in children.<sup>13</sup>

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# SQUEEZE THE MOST OUT OF BEVERAGES

## WITH NUTRIENT-DENSE 100% FLORIDA ORANGE JUICE

100% Florida Orange Juice is a natural source of essential vitamins and minerals needed for good health, as well as phytochemicals that may be beneficial to improving health.

Research suggests adults and children who consume 100% orange juice tend to have better overall diet quality and nutrient adequacy compared to those who don't consume 100% orange juice.<sup>1-4</sup>

Specifically, data from the 2003-2006 National Health and Nutrition Examination Survey (NHANES) suggests that both adults and children ages two and older who consume 100% orange juice tend to have significantly greater intake of several key nutrients typically under-consumed by Americans than those who don't consume orange juice, including vitamin C, folate, magnesium, and potassium.<sup>1,4</sup>

100% fruit juice makes key contributions to children's and adolescents' diets.<sup>5</sup>

**#1 SOURCE OF VITAMIN C**

**#2 SOURCE OF POTASSIUM**



One 8-oz. glass of 100% Florida Orange Juice can be an essential part of a healthy, well-balanced diet and help fill nutrient gaps with help from its **Amazing 5**, including:

## VITAMIN C

- Supports collagen production for healthy skin, bones, cartilage, muscle and blood vessels
- Plays a key role in helping support the body's immune function
- May help the body better absorb some forms of iron from other foods consumed

## POTASSIUM

- Essential mineral important for muscle function, nerve transmission, pH maintenance (acid/base balance), and maintaining fluid and electrolyte balance
- Helps to power muscle contractions
- May help promote healthy blood pressure

**Diets containing foods that are a good source of potassium and low in sodium may reduce the risk of high blood pressure and stroke.<sup>6</sup>**

## FOLATE

- An important water-soluble B vitamin that's key for producing healthy red blood cells as well as the production and growth of new cells
- Essential for growth and development—especially important before and during pregnancy to help reduce the risk of birth defects of the brain and spine

**Women capable of becoming pregnant should take 400 micrograms of synthetic folic acid daily, from fortified foods or supplements or a combination of the two, in addition to consuming food with folate from a varied diet.<sup>7</sup> 100% Florida Orange Juice is a good source of natural folate.**

## NO ADDED SUGAR

- Contains no added sugars and delivers an impressive array of nutrients
- Natural sweetness comes from the natural sugars found in whole fruit
- USDA says sodas, sports drinks, fruit drinks and energy drinks provide over 45 percent of added sugars in the U.S. diet<sup>8</sup>
- 100% Florida Orange Juice is an important part of a healthy, well-balanced diet and a healthy replacement for sugar-sweetened beverages

## AN 8-OUNCE GLASS OF 100% FLORIDA ORANGE JUICE ALSO DELIVERS:

- Magnesium (7% daily value)
- Vitamin B<sub>6</sub> (7% daily value)
- Vitamin A (4% daily value)
- Niacin (3% daily value)
- Calcium (3% daily value for non-fortified, 35%-50% daily value for fortified)
- Iron (2% daily value)
- Phytochemicals—plant compounds like flavonoids and carotenoids that may provide health-promoting benefits
- Hesperidin—may help maintain healthy blood pressure and blood vessel function, two of the key elements in the development of cardiovascular disease.<sup>9</sup> 100% orange juice is the only fruit juice or commonly consumed food that contains significant amounts
- Beta-cryptoxanthin, a type of carotenoid. 100% orange juice is one of the main contributors of beta-cryptoxanthin in the U.S. diet<sup>10</sup>

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# KEY RESEARCH FINDINGS

## 100% ORANGE JUICE / 100% FRUIT JUICE CONSUMPTION BY CHILDREN

The prevalence of childhood obesity has focused increased attention on food and beverage consumption among children, particularly of sugar-sweetened beverages. Nutrient-dense beverages, such as 100% Florida Orange Juice, can be part of a healthful diet to promote nutrient adequacy and improved diet quality. In fact, the majority of research supports the following:

- *No association between the consumption of 100% orange juice or 100% fruit juice and overweight or obesity status, body mass index (BMI), body fat percentage, or waist circumference in children or adolescents*
- *Consumption of 100% orange juice or 100% fruit juice can contribute significantly to nutrient intake and diet quality*
- *As a complement to whole fruit, 100% orange juice or 100% fruit juice can help children meet their fruit intake recommendations*





# OVERWEIGHT & OBESITY

## Systematic Reviews

- A systematic review of the association between 100% fruit juice intake and weight in children and adolescents reported that after assessing 21 cross-sectional and longitudinal studies, a majority reported no association between 100% juice intake and adiposity—even when juice was consumed in amounts exceeding current recommendations.<sup>1</sup>
- A comprehensive review conducted for the Academy of Nutrition and Dietetics' Evidence Analysis Library evaluating research published through August 2013 concluded that the evidence does not support an association between 100% fruit juice consumption and weight status or adiposity in children 2 to 18 years of age.<sup>2</sup>

## Cross-Sectional Studies

- A study of children 2 to 5 years of age residing in upstate New York reported that orange juice consumption was not significantly associated with BMI.<sup>3</sup>
- In a study of children aged 6 through 19 from the Continuing Survey of Food Intake by Individuals (CSFII) 1994/1996 and 1998, the consumption of citrus juice was not significantly associated with BMI.<sup>4</sup>

- Researchers examined data from NHANES 2003-2006 of children 2 to 18 years and reported that those who consumed 100% orange juice had higher energy intakes and a lower waist circumference compared to orange juice non-consumers; however, there were no differences in body weight or BMI between these two groups. There was no significant difference in the risk of being overweight or obese for children who consumed 100% orange juice compared to nonconsumers.<sup>5</sup>
- In a cross-sectional study using 24-hour diet recalls from NHANES 2003-2006, researchers reported no significant difference in BMI, waist circumference or percentage body fat in children and adolescents who consumed 100% orange juice compared to nonconsumers.<sup>6</sup>
- Researchers evaluated beverage intake among preschool children 2 to 5 years of age from NHANES 1999-2002 and reported no association between higher 100% fruit juice consumption and BMI.<sup>7</sup>
- In two cross-sectional studies using data from NHANES 1999-2002, there was no association between 100% juice consumption and weight status or the likelihood of being overweight

in children age 2 to 11 years or adolescents age 12 to 18 years.<sup>8,9</sup>

- Researchers evaluated beverage intake in over 10,000 Canadian children age 2 to 18 years of age and reported no association between fruit juice intake and risk of overweight/obesity.<sup>10</sup>
- A study evaluating beverage intake in Greek school children and adolescents aged 7 to 15 reported that the intake of 100% fruit juice was not associated with overweight or obesity.<sup>11</sup>
- A study of 319 Mexican-American children aged 8 to 10 living in northern California reported no association between 100% fruit juice intake and obesity.<sup>12</sup>
- A study examining 100% fruit juice consumption in children 2 to 4 years of age participating in the California WIC program reported that 100% fruit juice intake was not associated with the prevalence of obesity.<sup>13</sup>

**"OJ consumption was associated with healthier body composition (lower BMI, WC (waist circumference) and body fat %) in adults, and there were no significant associations between OJ consumption and body composition in children and adolescents."**<sup>6</sup>

- Wang et al. Public Health Nutr, 2012

**"Inclusion of fruit juice, in amounts consistent with dietary recommendations, as part of a healthy diet can provide important nutrients without increasing weight in children."**<sup>8</sup>

- O'Neil et al. Am J Health Promot, 2010

## OVERWEIGHT & OBESITY CONT.

### Longitudinal Studies

- Based on food frequency questionnaires for almost 15,000 children and adolescents in the United States from 1996 to 1999, researchers reported no association between the intake of 100 percent juices and changes in BMI z-score over 3 years.<sup>14</sup>
- In children ages 2 to 5 years participating in the North Dakota WIC program, researchers reported no association between fruit juice intake and changes in weight or BMI over a one year period.<sup>15</sup>
- A prospective cohort study that included over 10,000 boys and girls age 9 to 14 from the U.S. Growing Up Today Study reported that 100% fruit juice consumption was not associated with an annual change in BMI over a 2-year period.<sup>16</sup>
- In a study using data from the National Heart, Lung and Blood Institute Growth and Health Study researchers reported no association between 100% fruit juice consumption and BMI in girls aged 9 to 19.<sup>17</sup>
- A study in non-Hispanic girls age 5 years at baseline reported no association between 100% fruit juice intake and changes in adiposity over a 10-year period.<sup>18</sup>
- There was no association between orange juice consumption and change in BMI over five years among adolescents in the Project EAT (Eating Among Teens) cohort.<sup>19</sup>
- A study of non-Hispanic boys and girls 3 to 9 years of age participating in the Framingham Children's Study reported that children with the highest intake of fruit/vegetable juice had a significantly smaller waist circumference and skinfold measurements later in adolescence compared to children with the lowest intake. There was no association between juice intake and BMI or body fat percentage.<sup>20</sup>

## NUTRIENT INTAKE AND DIET QUALITY

- Researchers evaluated data from NHANES 2003-2006, including children and adolescents ages 4 to 18 years, and reported that fruit servings consumed were positively associated with 100% orange juice consumption, and contributed to helping children and adolescents meet calorie-specific USDA MyPyramid recommendations for fruit. Increased 100% orange juice consumption was also correlated with increased daily intakes of certain micronutrients, antioxidants and phytochemicals.<sup>21</sup>
- Researchers examined data from NHANES 2003-2006 of children ages 2 to 18 years and reported that consumers of 100% orange juice had a higher percentage of the population meeting the EAR for certain nutrients (vitamins A and C, folate and magnesium) and higher intakes of total fruit, fruit juice and whole fruit compared with non-consumers. 100% orange juice consumers had significantly higher HEI-2005 scores compared to non-consumers. Researchers concluded that moderate consumption of 100% orange juice should be encouraged in children as a component of a healthy diet.<sup>5</sup>
- In a cross-sectional study using data from NHANES 1999-2002, children and adolescents who consumed 100% fruit juice had significantly higher intakes of carbohydrates, vitamins C and B6, folate, potassium, magnesium, and iron and significantly lower intakes of total fat and saturated fatty acids compared to non-consumers. Children ages 2 to 11 years who consumed 100% fruit juice also had lower intakes of added sugars and discretionary fat, while adolescents ages 12 to 18 years had higher intakes of fiber compared to non-consumers. 100% fruit juice consumers in all age groups had higher intakes of whole fruit compared to non-consumers.<sup>8,9</sup>
- Data reporting 100% fruit juice consumption for children and adolescents ages 2 to 18 years from NHANES 2003-2006 revealed a significantly higher percentage of non-consumers of 100% fruit juice had intakes below the EAR for vitamins A and C, folate, phosphorus and magnesium, while a greater percentages of children and adolescents who consumed 100% fruit juice exceeded the Adequate Intake (AI) for potassium compared with orange juice non-consumers. 100% fruit juice consumers also had higher intakes of total and whole fruit, lower intakes of added sugars, and higher total HEI-2005 scores in all age groups.<sup>22</sup>
- The CDC analyzed adolescent beverage habits using data from the 2010 National Youth Physical Activity and Nutrition Study (NYPANS) and noted that along with water, milk and 100% fruit juices are healthful beverage selections and sources of key nutrients.<sup>23</sup>





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