The Whole Truth About 100% Fruit Juice

A Health Professional Educational Tool

Authored by Welch’s Health & Nutrition Advisory Panel

grapescience.com
Fruit provides important nutrients for overall health, yet most people fall short of meeting their daily recommended goals of 1-2 cups.\(^1\)\(^2\) As a complement to whole fruit, 100% fruit juice can be a convenient, delicious and nutritious way to squeeze more fruit into the day. And, 100% fruit juice makes it easier to try a variety of colorful fruit as part of a balanced diet throughout the year. So, your favorite fruit is always “in season” when enjoyed as 100% juice!

Yet, myths persist that 100% fruit juice is a source of “empty calories.” This tool shares the latest science to provide the whole truth behind the role of 100% fruit juice in a healthy diet.

### Key Message:
Help people squeeze more fruit into their day: just 4 ounces of 100% juice counts as one serving, or ½ cup, of fruit.

### Daily Fruit Recommendations
MyPlate fruit recommendations vary by age, gender and physical activity level. Any fruit or 100% fruit juice counts as part of the Fruit Group.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Boys</th>
<th>Girls</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-3 years</td>
<td>1 cup</td>
<td>1 cup</td>
<td>2 cups</td>
<td>2 cups</td>
</tr>
<tr>
<td>4-8 years</td>
<td>1 ½ cups</td>
<td>1 ½ cups</td>
<td>2 cups</td>
<td>2 cups</td>
</tr>
<tr>
<td>9-13 years</td>
<td>1 ½ cups</td>
<td>1 cup</td>
<td>1 ½ cups</td>
<td>1 ½ cups</td>
</tr>
<tr>
<td>14-18 years</td>
<td>2 cups</td>
<td>1 ½ cups</td>
<td>2 cups</td>
<td>2 cups</td>
</tr>
<tr>
<td>31-50 years</td>
<td>2 cups</td>
<td>1 ½ cups</td>
<td>2 cups</td>
<td>2 cups</td>
</tr>
<tr>
<td>51+ years</td>
<td>2 cups</td>
<td>1 ½ cups</td>
<td>2 cups</td>
<td>2 cups</td>
</tr>
</tbody>
</table>
The 2010 DGA encourage people to limit consumption of foods that contain added sugars, as well as foods containing solid fats and sodium.¹

Unlike sugar-sweetened beverages, 100% juice has no added sugar. The grams of sugar listed on the Nutrition Facts panels of 100% fruit juice products refer to the naturally occurring sugars found in the fruit from which the juice was squeezed.

100% fruit juice contains those natural fruit sugars along with vitamins, minerals and plant nutrients. As the DGA state: “sugars found naturally in foods are part of the food’s total package of nutrients and other healthful components.”¹

It’s important to remind clients to check the label and look for 100% fruit juice to ensure no sugar has been added and to get the most nutrients in every calorie. Other information to look for on the package is illustrated below.

### Key Message:

100% fruit juice provides nutrition squeezed from whole fruit without added sugars.

### CONTAINS 100% JUICE

#### Nutrition Facts

<table>
<thead>
<tr>
<th>Serving Size: 8 FL. OZ. (240mL)</th>
<th>Servings Per Container: 8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Amount Per Serving</strong></td>
<td><strong>% Daily Value</strong></td>
</tr>
<tr>
<td>Calories</td>
<td>140</td>
</tr>
<tr>
<td>Total Fat</td>
<td>0g 0%</td>
</tr>
<tr>
<td>Sodium</td>
<td>15mg 1%</td>
</tr>
<tr>
<td>Potassium</td>
<td>140mg 4%</td>
</tr>
<tr>
<td>Total Carb</td>
<td>38g 13%</td>
</tr>
<tr>
<td>Sugars</td>
<td>36g**</td>
</tr>
<tr>
<td>Protein</td>
<td>1g</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>120%</td>
</tr>
<tr>
<td>Calcium</td>
<td>2%</td>
</tr>
<tr>
<td>Magnesium</td>
<td>6%</td>
</tr>
<tr>
<td>Manganese</td>
<td>20%</td>
</tr>
</tbody>
</table>

*Not a significant source of fat, cal, sat fat, trans fat, cholest, fiber, vitamin A, and iron.

**Percent Daily Values are based on a 2,000 calorie diet.

**CONTAINS NATURAL FRUIT SUGARS ONLY

**INGREDIENTS:** GRAPE JUICE FROM CONCENTRATE (PURIFIED WATER, GRAPE JUICE CONCENTRATE), GRAPE JUICE, CITRIC ACID (FOR TARTNESS), ASCORBIC ACID (VITAMIN C) NO ARTIFICIAL FLAVORS, NO PRESERVATIVES, AND NO COLORS ADDED.

Look for no sweeteners or words such as sugar, high fructose corn syrup, honey or other synonyms for sugar.
100% Fruit Juice: Delivering Benefits of Whole Fruit

Like whole fruit, 100% fruit juice contains important vitamins, minerals and plant nutrients, such as polyphenols. And, in some cases, drinking 100% fruit juice may actually provide more of these beneficial polyphenols than eating the fruit. For example, the same polyphenols in Concord grapes are found in 100% grape juice – but the polyphenols in whole Concord grapes are found in the grape’s thick skin as well as its seeds, both of which are generally discarded and left uneaten.

To make 100% grape juice, Concord grapes are crushed – skin, seeds and all – and heated to release plant nutrients straight from the grape into the juice. So, drinking 100% grape juice made with Concord grapes makes it easier to enjoy the benefits of these plant nutrients.

The implication is not that 100% fruit juice should be consumed exclusively, but rather that both whole fruit and 100% juice contribute to a healthy lifestyle. While eating whole fruit provides fiber – a nutrient lacking in many Americans’ diets – there are benefits to enjoying both whole fruit and 100% juice in a balanced diet to get the most nutrient benefits from fruit.

Key Message:
To enjoy all the benefits fruit offers, consume whole fruit and moderate amounts of 100% fruit juice as part of a healthy diet. 100% juice delivers convenient, concentrated nutrients including polyphenols, while whole fruit can be a better source of fiber.

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Polyphenols and Health: Juicy New Research
Emerging research is now underway to understand the effect of polyphenols on glucose absorption and carbohydrate metabolism. A review by Haniheva et al explored the effect of certain polyphenols (flavonoids) on carbohydrate metabolism and glucose absorption and found that polyphenols may limit the rate of sugar absorption in the gut. This could mean experiencing less of a “sugar spike” and more sustained energy after consuming certain 100% fruit juices rich in flavonoids versus other sugar-containing beverages. However, science in this area is very preliminary, and more research is needed to understand the impact of 100% fruit juice consumption on carbohydrate digestion, absorption and metabolism in humans.
100% Fruit Juice: A Nutrient-Dense Beverage

Consuming a variety of fruits and vegetables is a recognized way to maximize the intake of vitamins, minerals and beneficial plant nutrients. 100% fruit juices are key sources of these essential nutrients, and a growing body of evidence suggests certain juices may be linked to specific health benefits. In fact, more than a decade’s worth of research suggests that, thanks to the Concord grape, 100% grape juice can help support a healthy heart.5-16

Studies also show the consumption of 100% fruit juice is closely linked to better nutrient intake among children, particularly certain “nutrients of concern” as identified in the 2010 DGA.17-20 In one study of intake among children 2-18 years of age, 100% fruit juice consumption is associated with higher intakes of vitamins A and C, magnesium, folate, phosphorus, and potassium.17

While 100% fruit juice typically does not contain as much fiber as whole fruit, research suggests drinking 100% fruit juice does not negatively impact dietary fiber intake. An analysis of the 2003-2006 National Health and Nutrition Examination Survey (NHANES) showed that fiber intake among 100% fruit juice drinkers was not lower than non-juice drinkers.17
100% Fruit Juice and Healthy Weight

The Weight of the Research
You might be aware of increased attention on possible negative aspects of 100% juice. The evidence behind such concerns is scant; in fact, the majority of the scientific evidence suggests that moderate 100% fruit juice consumption is not associated with overweight or obesity in healthy adults and children.19-41

In one analysis of NHANES (1999-2002), children and adults who consumed 100% grape juice versus those who did not:21

• Showed no differences in total energy (calorie) intake, weight, body mass index (BMI) or waist circumference

• Consumed more servings of fruit, and children had lower intakes of added sugar

• Had higher intakes of vitamin C and potassium

While a handful of studies has noted possible associations between juice consumption and overweight and obesity,42-49 there are challenges with interpreting the data and applying the results for public health. For example, some of the studies did not distinguish between 100% juice and other fruit drinks, or were done with a smaller, more regional scope.

Filling Facts on 100% Juice
The role of foods and beverages on satiety and their impact on weight management is an area of evolving research. While some research indicates beverages have less of an impact on satiety than eating solid foods,50-53 other data suggest that, as with solid foods, the satiety response is dependent on a number of factors such as the volume consumed, the proximity to other foods consumed and the composition of the beverage.54-62

One study by Hollis, Mattes and colleagues found that consuming a polyphenol-free, grape-flavored, sugar-sweetened beverage resulted in a reported reduction in fullness, as well as moderate but significant weight gain, whereas drinking Concord grape juice was not associated with significant changes in appetite, weight or increased energy intake. In fact, in this research, drinking Concord grape juice was associated with reduced waist circumference.62

While intake of nutrient-dense foods is an important part of a healthy diet, one mustn’t forget the critical need to balance calories. No matter how healthy the food, when energy (calorie) intake exceeds energy expenditure, the result is weight gain.

“[The overwhelming volume of scientific evidence suggests that there is no systematic association between consumption of 100% fruit juice and obesity using a variety of study populations and a variety of measures of adiposity.”

Carol E. O’Neil, PhD, MPH, RD, LDN
Registered dietitians and other health professionals recognize the value of 100% fruit juice as part of an overall healthy diet. As the 2010 Dietary Guidelines Advisory Committee stated: “When consumed in moderation as part of a nutrient-rich, energy-balanced diet, 100% juice can be a healthy part of a child’s diet.”

According to a national survey of registered dietitians, 100% fruit juice is among the top beverages they would recommend to their clients (adults and children), in addition to water, milk and vegetable juice, yet only 60% of Americans consume 100% fruit juice at least once in an average two-week period.

“Drinking 100% fruit juice is an effective, convenient and delicious way to increase fruit intake. It also gives a nutrition and flavor boost to recipes, such as spritzers, salad dressings and even entrees.”

Wendy Jo Peterson, MS, RD, CSSD

“Enjoying a healthy lifestyle means balancing a variety of options. When whole fruit isn’t readily available or desired, 100% fruit juice is a convenient, delicious and nutritious way to get more fruit. And, whether you’re choosing whole fruit or fruit juice, serving size matters.”

Robyn Flipse, MS, MA, RDN

### American Academy of Pediatrics Daily Recommendations for 100% Juice

AAP states that moderate consumption of 100% fruit juice can be part of a healthy diet and can help people meet their daily goals for fruit intake.

<table>
<thead>
<tr>
<th>Ages</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6 months</td>
<td>avoid 100% juice</td>
</tr>
<tr>
<td>1-6 years</td>
<td>limit to 4-6 ounces</td>
</tr>
<tr>
<td>7-12 years</td>
<td>up to 12 ounces</td>
</tr>
</tbody>
</table>
References:


6. Anselm E, Chaiteaugue M, Ndiaye M, Chaiteaugue T and Schin-Merkel VB. Grape juice causes endotheliun-dependent relaxation via a rho-activated SLC and Akt-dependent activation of eNOS. Cardiovasc Res. 2007. 73(2):404-413.


29. Almiron-Roig E, Flores SY and Drewnowski A. No difference in satiety in or subsequent energy intakes between a beverage and a solid food. Physiol Behav. 2004. 82:671-677.


42. Almiron-Roig E and Drewnowski A. Hunger, thirst, and energy intakes following consumption of caloric beverages. Physiol Behav. 2001. 73:891-893.