

The role of fruit juice in the diet

Key points

- A modest serving of 100% fruit juice (FJ) contributes minimally to energy and free sugar intakes at current European intakes.
- Current estimates are that adults in Europe consume around 130mL per day, well within typical recommendations of 100-200mL/day.
- Many FJs provide a source of vitamins or minerals. For example, 100% orange juice is a rich source of vitamin C and a source of folate and potassium.
- FJ is also a major contributor to dietary polyphenols. According to studies, these are plant bioactives with a role in vascular function and other markers of health.
- Freshly squeezed and packaged FJ have a similar polyphenol content.

How much fruit juice do we drink?

Contrary to the perception that FJ is overconsumed, dietary estimates indicate very modest intakes amongst consumers. A recent survey which analysed national dietary studies across Europe found that the average adult consumer drinks just over 130g FJ per day, which is less than the 150mL recommended in the UK and within the 100-200mL range from other European countries¹. In addition, 10 to 70% of people don't drink FJ regularly, depending on the country. So, when we take the whole population into account - both consumers and non-consumers - average intakes of FJ in Europe are less than 70mL per day in adults and less than 100mL per day in children and teenagers. According to UK surveys, four in ten adults and over half of children and teenagers drink FJ regularly². The average intake is just 2-3 glasses a week, or around 4-6 tablespoons a day, which is not excessive.

Nutrition contribution

An average 150mL glass of orange juice provides just 62kcal, which is 3% of an average person's daily energy intake. A new study confirmed this, showing that FJs in Europe contribute 1 to 3% of daily energy intakes in infants, and just 1 to 2% in other age categories¹.

Studies have estimated that, on average, FJ contributes 10 to 12% of free sugar intakes in children and teenagers, and 10% in adults, with an overall contribution to all age groups of 2 to 14%. In contrast, most free sugars in our diet come from foods with added sugars, such as sugar-sweetened drinks, biscuits, cakes, confectionery and desserts. A 150mL glass of orange juice typically provides 12-14g of sugar, none of which is added as per EU/UK regulations.

A 150mL serving of packaged orange juice provides more than 90% of the recommended daily amount of vitamin C³ which is an important nutrient for normal immune function. Scientists have estimated that up to 26% of vitamin C intakes are provided by regular FJ consumption¹ (see Figure 1). FJ also provides around 2 to 4% of our daily potassium, a mineral which supports normal blood pressure. The European Food Safety Authority highlighted in 2022 that potassium intakes are far too low, in part due to low fruit intakes⁴. Hence, FJ may complement policies to boost fruit consumption.

Fruit juice provides 1 to 7% to daily folate intakes, a B vitamin which supports maternal tissue growth during pregnancy. Intakes of folate are too low in women of childbearing age according to expert health bodies⁵. Folate has also been proven to reduce tiredness and fatigue and contributes to normal psychological function.

FIGURE 1

NEW STUDY REVEALS POSITIVE NUTRITIONAL CONTRIBUTION OF FRUIT JUICE TO EUROPEAN DIETS

Up to
26% of Vitamin C for normal immune function

Up to
4% of Potassium for normal blood pressure

Up to
7% of Folate for contributing to a reduction to tiredness and fatigue



Walton J & Kehoe L (2024) Nutrition Research Reviews. <https://pubmed.ncbi.nlm.nih.gov/38356367/>

Because of its nutrient density, many countries recognise that FJ can contribute to fruit and vegetable recommendations when one small glass is consumed daily.

Fruit juice, like whole fruit, is an important contributor to dietary polyphenols, such as flavanones. These bioactive plant compounds are reported to have beneficial effects on vascular health⁶ and cognitive function⁷. One study estimated that citrus fruit and juices combined were the largest contributors to flavanone intake in all regions of Europe studied⁸.

Studies have also shown that the main bioactive compounds in packaged juices are present at nutritionally significant levels compared with freshly squeezed juices³. In addition, the pressing methods used to make packaged juices may make some bioactive compounds more available to the body. In one study, people absorbed nearly three times more hesperidin, a citrus polyphenol, when they drank a packaged orange juice compared with freshly squeezed juice⁹.

Hydration

Fruit juice is made up of mostly water with some electrolytes in the form of potassium and has been shown to be a good choice for hydration. One study reported that orange juice had one of the highest scores on a beverage hydration index, making it a suitable drink following exercise¹⁰. Studies suggest that regular FJ consumption is a marker for good hydration in children and young people¹¹.

Conclusion

Fruit juice has a similar nutritional profile to the whole fruit it is made from. The commonly consumed juices of orange, apple and berry are a source of selected nutrients, particularly vitamin C, while contributing minimally to energy intakes. Both whole fruits and juices make important contributions to dietary polyphenol intakes. Similar levels of polyphenols are seen in freshly squeezed and packaged juices. Evidence from observational studies consistently shows associations between FJ intake and better diet quality^{12,13}.

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