

Fruit juice and its contribution to hydration

Key points

- 100% fruit juice (FJ) contains mostly water along with natural sugars, essential vitamins, minerals and polyphenols (plant bioactives).
- Many countries advise that a small glass of FJ can contribute to hydration.
- There is some evidence from randomised controlled trials that FJ can act in a similar way to carbohydrate-electrolyte beverages to aid rehydration.

The human body is around two-thirds water, but it is constantly losing water through the skin and lungs as we breathe. That is why we need to consume enough each day to replace losses and ensure our body performs well physically. We get fluid not just from water but from all drinks consumed (except strong alcoholic drinks). Moist foods, like fruit or yoghurt, contribute around 20% of total fluid intakes. In warmer weather or during exercise, additional fluid is needed to stay properly hydrated.

Hydration recommendations

The European Food Safety Authority has set an Adequate Intake for water of 2L for adult women and 2.5L for men, based on a moderate environmental temperature and moderate exercise¹. These recommendations include water from drinking water, beverages of all kinds such as FJ, and from water-rich foods including yoghurt and soup.

According to food composition data tables, FJ contains between 84-94% water². Each nation has its own recommendations for a healthy diet, which includes how to stay properly hydrated. Some examples are below:

- In the UK, FJ counts towards hydration recommendations with advice to limit intake to a maximum of 150mL per day³.
- In France, water is the recommended drink of choice. Nonetheless, in the category of sweet-tasting beverages, FJs should be favoured over sugar-sweetened drinks and limited to one glass a day⁴.
- Denmark advises that fruit and vegetable juices can count towards liquid intake, along with other beverages such as coffee, tea and milk. Health officials recommend a small glass of 100mL per day⁵.
- In Germany, the advice is to choose water and other non-caloric beverages, such as unsweetened tea, or diluted fruit and vegetable juices⁶. Sugar-sweetened beverages are specifically not recommended.

Current research

Observational studies show how FJ can contribute to hydration status in population groups. For example, one study found that regular FJ consumption was linked with appropriate hydration in children and young people⁷.

However, FJs provide more than just water as most varieties are a source of vitamins, minerals and plant bioactives. One study reported that 100% orange juice had a higher beverage hydration index than tap water, suggesting that it was more effective for hydration⁸. The authors suggested that this was due to its significant potassium content which acts as an electrolyte to increase fluid uptake.

This study also reported that both milk and orange juice helped to maintain positive potassium balance in the body. Potassium is a mineral proven to support normal blood pressure. Another study reported that 100% orange juice was just as effective as water or a carbohydrate electrolyte drink in terms of hydration, quenching thirst and aiding electrolyte balance after aerobic exercise⁹. The authors suggested that a glass of 100% orange juice may be a beneficial option for a post-exercise drink to aid rehydration.

Conclusion

Good hydration is essential for survival and optimal functioning, particularly for brain function, temperature regulation, waste excretion and digestion. Many countries around the world, including the UK, Denmark and France, recommend that FJ, when consumed in moderate amounts a daily glass can contribute to hydration. There is some evidence from clinical studies that, due to their potassium content, certain FJs such as orange juice may be a good choice for hydration, including after exercise.

October 2024.

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