

Sugar-sweetened beverages and fruit juice consumption in obesity

Opinion

Sugar-sweetened beverages (SSBs) include soft drinks, fruit drinks and energy drinks, which are sweetened by high fructose corn syrup or sucrose that are added to the beverages by manufacturers, individuals or establishments.¹

Fructose has a unique metabolism, and is absorbed from the gut into the portal vein and is metabolized in the liver where it is converted into fructose-1-phosphate by the enzyme fructokinase. Unlike glucose, fructose is metabolized without requiring insulin secretion and without increasing plasma glucose. Intake of fructose in high amounts can promote triglyceride synthesis.²

I have previously published a research in which a beverage 100% orange juice, with no sugar added, prolonged postprandial lipemia in overweight women apparently healthy.³ SSBs are linked with the development of obesity and associated comorbidities.⁴ The effect of SSBs seems to be a consequence of the excess calories provided by their consumption. It is not known if excess energy intake from SSBs is more harmful than is excess energy intake from other sources. However, liquids have a smaller satiating effect compared with solid foods, with incomplete compensatory reduction in energy intake at subsequent meals following ingestion of liquid calories.^{5,6}

SSBs consumption was associated with an additional weight gain of 0.12kg over 1year.¹ At first, this estimate seems modest. However, adult weight gain is a gradual process which occurs over decades. Thus, decreasing consumption of SSBs may reduce weight gain and obesity in a long term.⁷

In turn, many patients with obesity and health professionals think of fruit juice as healthy beverage, which can be consumed without restriction. It is really common that patients with obesity substitute cola for pure fruit juice, especially orange juice and grape juice. Fruit juice is seemed as a healthy choice because of vitamins, minerals and bioactive compounds. In this context, fruit juice consumption can be useful to improve micronutrient content of the diet.⁷ However, in the context of management of obesity and its comorbidities, fruit juice has a similar energy density and sugar content to SSBs.⁵ Despite fruit juice containing of vitamins, antioxidants and other bioactive compounds, drinking fruit juice might not be substantially different from consumption of SSBs in health consequences.⁵

To support this, evidence shows that solid fruit intake high consumption is generally associated with reduced or neutral risk of diabetes. In contrast, high fruit juice intake is associated with increased risk of diabetes.^{8,9}

Conclusion

SSBs are linked to excess weight gain and with increased risk of type 2 diabetes and cardiovascular disease. Due to energy density and sugar content, fruit juice may behavior like SSBs, despite of its content of bioactive compounds. Health care professionals should

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encourage individuals to cut unnecessary calories from their diet and avoid high energy density foods, by consuming whole solid fruit rather than fruit juice.

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Conflict of interest

The author declares no conflict of interest.

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