

Cutting down on sugar has a small but significant effect on body weight

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Reducing sugar intake has a small but significant effect on body weight in adults, finds a paper published on *BMJ* website today.

Although the effect is relatively small (an average reduction of 0.8 kg), the findings provide some support for international guidelines to cut [sugar intake](#) to less than 10% of total energy to help reduce the global [obesity epidemic](#).

Excessive sugar in the diet has been linked to obesity, and a higher risk of [chronic diseases](#). The most consistent association has been between a high intake of sugar sweetened beverages and the development of obesity, but not all studies have reported a statistically significant link.

The [World Health Organization](#) has suggested that intake of "free sugars" should be less than 10% of total energy intake, but no upper safe limit has been agreed. So a team of researchers at the University of Otago and the Riddet Institute in New Zealand analysed the results of 71 studies (30 [randomised controlled trials](#) and 41 cohort studies) of sugar intake and [body fatness](#) to summarise evidence on the association between intake of dietary sugars and body weight in both adults and children.

Free sugars were defined as sugars that are added to foods by the manufacturer, cook, or consumer; plus those naturally present in honey, syrups, and [fruit juices](#). Differences in study design and quality were taken into account to minimise bias.

They found that advice to reduce free sugars was associated with an average 0.8 kg reduction in weight (in studies that ran for up to 8 months), while advice to increase intake was associated with a corresponding 0.75 kg increase.

This parallel effect, they suggest, seems to be due to an altered [energy intake](#), since replacing sugars with other carbohydrates did not result in any change in body weight.

The evidence was also less consistent in children, mainly due to poor compliance to [dietary advice](#). However, for sugar sweetened [beverages](#), the risk of [being overweight](#) or obese increased among children with the highest intake compared with those with the lowest intake.

The authors say that, given the many causes of obesity, it is unsurprising that the effect of reducing intake is relatively small, and they point out that some other unmeasured (confounding) factors may explain some or all of this effect. But they add "the overall consistency of the findings, regardless of study type, is reassuring."

They also acknowledge that the extent to which population based advice to reduce sugars might reduce risk of obesity "cannot be extrapolated from the present findings, because few data from the studies lasted longer than ten weeks." But conclude that "when considering the rapid weight gain that occurs after an increased intake of sugars, it seems reasonable to conclude that advice relating to sugars intake is a relevant component of a strategy to reduce the high risk of overweight and obesity in most countries."

In an accompanying editorial, US experts say the association between sugar and poor health has remained contentious over the past few decades, but that accumulating evidence "points towards a role for sugar and other refined carbohydrates in the development of overweight."

They say reducing the intake of sugar sweetened drinks "is a high priority" and point to policies such as taxes on sugar laden drinks, restrictions on advertising to children, and limits on serving sizes. They also call for action at many levels, including educational programs, improvements in foods and drinks in schools and worksites, and nutrition programs for people with low incomes.

Finally, a feature comments on the 40th anniversary of the publication of the popular book – *Pure, White and Deadly* – written by the British physiologist John Yudkin, which claimed that high sugar consumption was associated with heart disease.

It considers new evidence linking fructose (found in nearly all added sugars) with insulin resistance - a pre-cursor of heart disease – and suggests that Yudkin's warnings are finally being recognised, despite ongoing opposition from the sugar industry.

More information: Research paper: Dietary sugars and body weight: a systematic review and meta-analyses of randomised controlled trials and cohort studies, *BMJ*, 2013.

Editorial: Science souring on sugar, *BMJ*, 2013.

Feature: Sugar and the heart: old ideas revisited, *BMJ*, 2013.

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