

## The weight of evidence suggests that soft drinks are a major issue in childhood and adolescent obesity

*There is much to be gained by reducing children's intake of soft drinks and little — except excess weight — to be lost*

Childhood obesity is a major health issue in Australia. In recent months, a number of organisations, including the Australian Medical Association,<sup>1</sup> have released statements demanding stronger action on this issue, including a call to restrict access to and marketing of soft drinks to help reduce children's consumption. However, the soft-drink industry rejects these proposals and argues that their product is being unfairly singled out for action. Further, many parents are confused as to why a drink they often consider to be a harmless treat should be labelled so damaging to their children's health. In considering the suggested policy changes, it is therefore important to weigh up the information we currently have about the extent of soft-drink consumption, its impact on childhood obesity, and the potential of a reduction in consumption to contribute to improved weight control.

The term "soft drink" covers a number of different beverages, but in Australia it is generally used to refer to carbonated beverages, and more specifically sugar-sweetened carbonated beverages. It may be assumed that other sugar-sweetened beverages, such as cordials and sweetened fruit drinks, which are consumed more regularly by young children, would have a similar impact on energy and nutrient intake. However, sugar-sweetened carbonated beverages and electrolyte drinks are usually singled out for specific attention because they are well identified products, which are readily available, marketed aggressively to teenagers, and make the largest overall contribution to the beverage intake of children.

While it is widely reported that children consume too much soft drink, lack of continuous nutrition monitoring makes it difficult to provide accurate current data. Information on soft-drink consumption is available from a variety of sources using different dietary assessment methods and thus needs to be interpreted in different ways. However, the various sources of data are reasonably consistent in relation to the quantity of soft drinks consumed. A recent phone survey by Food Standards Australia and New Zealand found that 78% of all 12–17 year olds had consumed soft drink in the previous week,<sup>2</sup> while the 1995 National Nutrition Survey found that around half of all teenagers and a surprising 26% of 2–3 year olds had consumed soft drink during the previous 24 hours. Boys tended to consume more soft drink than girls, with boys aged 16–18 years drinking an average of 480 mL each day (or 836 mL per day among those who consumed soft drink), double

the consumption of girls of that age (unpublished data from the 1995 National Nutrition Survey recalculated by us to include soft drinks only. Complete data in *National Nutrition Survey: foods eaten, Australia, 1995*<sup>3</sup>). This was equivalent to 5.5% of the average total energy consumed by 16–18 year olds or 10.8% of the energy intake of the consumers. Apparent consumption data from the Australian Bureau of Statistics, as well as industry data, suggest that the intake of soft drinks in Australia has grown rapidly in the past 30 years from around 47.3 L per person per year in 1969 to 113 L per person (children and adults) in 1999.<sup>4</sup> While this is some way below the per capita consumption of 200 L per year in the United States, it does put Australia within the top 10 countries for consumption and represents a market of around \$1.6 billion per year.<sup>5</sup>

There is reasonable evidence that a high intake of soft drinks is associated with a greater risk of weight gain and obesity. A number of US studies show a strong cross-sectional association between soft-drink consumption and excess energy intake in adolescence,<sup>6,7</sup> and NZ children who drank soft drinks more than once a day also were found to have a significantly higher mean body mass index (BMI) than children drinking soft drinks less than once a week, even after controlling for other known risk factors for weight gain.<sup>8</sup> Longitudinal studies provide stronger evidence of a role for soft drinks in weight gain in children, with a large observational study of 10 000 children showing a consistent relationship between consumption of sugar-added beverages and weight gain over a 2-year period.<sup>7</sup> A smaller 19-month study of 548 children aged 11 years found that both initial consumption and increases in intake levels of soft drink were associated with increased BMI and risk of obesity.<sup>9</sup> A 10-week feeding trial found that when overweight adults were given a supplement of sucrose, mostly in the form of soft drink, they gained on average 1.6 kg, while a control group fed an artificially sweetened supplement lost 1.0 kg.<sup>10</sup> The low satiating properties of energy-rich fluids compared with solids has been proposed as a possible reason for the close association between energy from soft drinks and weight status.<sup>11</sup>

Only a few studies have examined the effect on weight status of interventions aimed at reducing energy intake from sugar-sweetened soft drinks. These studies support the potential of such action, while leaving many questions unanswered about how best

to achieve the desired outcomes. A school-based intervention that encouraged children (7–11 years old) to reduce their intake of “fizzy” drinks was able to achieve within 1 year a significant reduction in overweight and obesity in the intervention group compared with the control group,<sup>1</sup> although the design and statistical analysis of this study have been criticised.

The evidence linking soft-drink consumption to weight gain and obesity, while not complete, is consistent and strong enough to support action. Soft drinks are consumed in large amounts by young people in Australia and thus the calls for curbing intake appear to be justified. As soft drinks have been linked to other health concerns such as dental disease and, moreover, provide no valuable nutrition (apart from fluids), there is potentially much to be gained by reducing the intake of these (and other) sugar-sweetened beverages by Australian children and little (except excess weight) to be lost.

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