

# Sickly sweet

It's time for a sugary drinks tax

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## Overview

Australia's obesity rate has tripled since 1980, while the number of Australians with type 2 diabetes has nearly tripled since 2000. Obesity is the second-leading risk factor contributing to death, and diabetes contributes to one in 10 deaths. The result is thousands of people living with sickness and disability, and billions of dollars a year in government spending. These problems are expected to keep getting worse, unless Australian governments take action.

Many policies are needed to reverse these trends. But one is cheaper and easier to implement than all the others: a tax on sugar-sweetened drinks.

Australians consume far too much sugar, which is one of the main reasons our rates of obesity and type 2 diabetes are so high. Sugary drinks are the single biggest source of sugar in our diets, and they increase the risk of developing type 2 diabetes. Many drinks have almost the entire maximum recommended daily intake of sugar for an adult in just one can – as much as 10 teaspoons of sugar. And they have little or no nutritional value.

That's why countries around the world are targeting these drinks with taxes. There are now sugary drink taxes in 117 countries, including the UK, France, Portugal, South Africa and Mexico. And the taxes are working.

There is strong evidence that they slash sales, and get manufacturers to put less sugar in their drinks. In the UK, one in three products had more than 8 grams of sugar per 100ml before a sugary drinks tax was announced. Four years later, only one in 12 had that much sugar.

Almost all of these taxes have been introduced in the past 10 years, and the full health benefits will take time to appear. But there are early signs that sugary drink taxes are already making people healthier. For

example, studies have found reduced obesity among girls, lower dental decay, and fewer children having to go to hospital to get teeth removed.

With surging adoption and growing evidence, it's past time for Australia to catch up with the rest of the world and introduce a sugary drinks tax.

To encourage manufacturers to put less sugar in our drinks, the tax should target the drinks with the most sugar, with a top rate of 60c per litre, and no tax on low-sugar drinks.

Grattan Institute modelling shows that our proposed tax would reduce consumption of the drinks with the most sugar by about 275 million litres a year, or the volume of 110 Olympic swimming pools. The average Australian would drink nearly 700 grams less sugar each year.

The tax is all about health, not revenue, but it would still give the federal government an extra half a billion dollars in the first year.

None of the objections to a sugary drinks tax stack up.

Disadvantaged people drink more sugary drinks, but they would have lots of options to avoid the tax. Because there would be no tax on low-sugar drinks, half of all products would be tax-free. More would be tax-free over time, as manufacturers reduced the amount of sugar in their recipes. And disadvantaged people would get bigger health gains, making them better off over time.

The financial impact on households, industry, and sugar farmers would be small, as experience around the world demonstrates. Despite shrill warnings from vested interests, the introduction of these taxes has gone smoothly overseas.

A sugary drinks tax is one of many policies Australia needs to improve our diet and our health. There is no excuse for further delay.

## Recommendations

### 1. Introduce a sugary drinks tax

The federal government should introduce a sugary drinks tax.

To target drinks with the most sugar, the tax should have three tiers:

less than 5 grams of sugar per 100ml: **no tax**

between 5 and 8 grams of sugar per 100ml: **40 cents per litre**

8 or more grams of sugar per 100ml: **60 cents per litre.**

The tax should be indexed to inflation, and there should be at least one year's notice before it is introduced.

### 2. Monitor the impact and make adjustments if needed

The Australian Centre for Disease Control (CDC) should regularly assess whether the tax is working to reduce sugar consumption, and whether it should be improved, or other complementary policies should be introduced.

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## 1 Australians are getting sicker

Diabetes and obesity are on the rise in Australia. The health consequences are illness, disability, and death. The financial costs are high too, for individuals, the budget, and the community more broadly.

### 1.1 Diabetes and obesity are major healthcare challenges

About 1.3 million Australians, or 5.3 per cent of the population, have diabetes (Figure 1.1).<sup>1</sup> Diabetes is the fastest-growing chronic condition both in Australia and around the world. Type 2 diabetes makes up more than 85 per cent of all diabetes cases in Australia. It happens when the body becomes resistant to insulin and loses its capacity to produce enough insulin.<sup>2</sup>

Rates of obesity in Australia have tripled, from less than 10 per cent of adults in 1980 to more than 30 per cent today. An additional one in three Australian adults are overweight.<sup>3</sup>

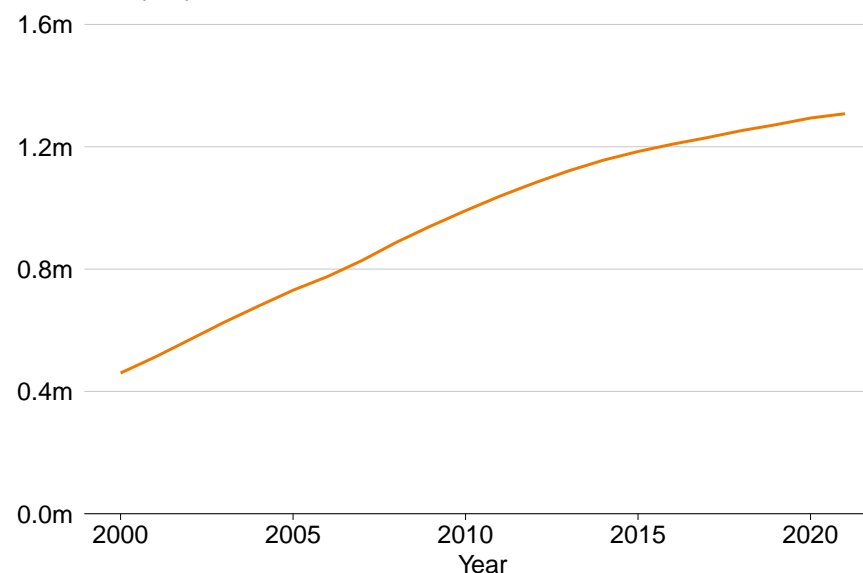
By 2035, nearly half of Australian adults could be obese.<sup>4</sup> By then, more than 1 in 5 Australian children could have obesity. As more of the population becomes overweight or obese, the number of people with chronic conditions such as type 2 diabetes is likely to grow.

Disadvantaged Australians are hardest hit by diabetes and obesity. Australians are more likely to have diabetes if they are Indigenous, live in disadvantaged neighbourhoods, live with a disability, are unemployed, or have a lower level of education.<sup>5</sup> Similarly, Australians

living regionally and with disability are more likely to be overweight or obese.<sup>6</sup>

**Figure 1.1: Diabetes has nearly tripled since 2000**

Number of people in Australia with diabetes



Source: Australian Institute of Health and Welfare (2023a).

### 1.2 The health consequences are severe

Global and Australian studies have found a strong link between obesity and premature death. Obesity is the second-leading risk factor contributing to ill-health and mortality.<sup>7</sup> It is a risk factor for many

1. Australian Bureau of Statistics (2023a).

2. Diabetes Australia (2019a).

3. Australian Bureau of Statistics (2023b).

4. 47 per cent: Obesity Evidence Hub (2023).

5. Diabetes Australia (2022); and Australian Bureau of Statistics (2023a).

6. Australian Bureau of Statistics (2023b).

7. Australian Institute of Health and Welfare (2021).

non-communicable diseases, including type 2 diabetes, cardiovascular diseases (heart attack, stroke, and hypertension), cancers, dementia, and chronic kidney disease.<sup>8</sup>

Like obesity, diabetes kills and reduces quality of life. In 2023, type 2 diabetes was responsible for about 2.2 per cent of the total burden of disease in Australia, and contributed to at least 6 per cent of deaths.<sup>9</sup> Diabetes can also cause blindness, amputation, heart disease, and kidney disease.<sup>10</sup>

### 1.3 Obesity and diabetes have significant economic costs

The costs of diabetes and obesity are significant, and include direct costs to the healthcare system, indirect costs for the economy, and costs to individuals.

Type 2 diabetes was responsible for \$2.3 billion of healthcare expenditure in 2020-21, 2 per cent of total healthcare expenditure, mostly due to the cost of pharmaceuticals, hospital care, and dental care.<sup>11</sup> This is projected to rise by 17 per cent by 2045.<sup>12</sup> The direct health costs and indirect community costs of obesity were estimated at \$11.8 billion in 2018.<sup>13</sup>

Diabetes and obesity also drain government budgets through reduced productivity and foregone tax.

But the biggest costs are for individual and their families. Diabetes and obesity can keep people out of work, and come with high costs, such as paying for medications and travelling to appointments. The

direct and indirect costs of diabetes, including government subsidies, was estimated to be \$20.4 billion in 2010.<sup>14</sup> For obesity, the direct and indirect costs may reach \$87.7 billion in 10 years if no action is taken.<sup>15</sup>

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8. Australian Institute of Health and Welfare (2023b).

9. Australian Institute of Health and Welfare (2023a). Type 1 and type 2 diabetes contribute to one in 10 deaths.

10. Diabetes Australia (2019b).

11. Australian Institute of Health and Welfare (2023a).

12. International Diabetes Federation (2021).

13. Commonwealth of Australia (2022).

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14. Lee et al (2013). Figure inflated to 2023 dollars using the Consumer Price Index.

15. Commonwealth of Australia (2022).

## 2 Sugary drinks do damage

Drinking sugary drinks significantly raises the risk of diabetes, obesity, and poor oral health. The number of sugary drinks the average Australian consumes has declined slightly in the past couple of decades. But these drinks still account for one quarter of our sugar intake, which remains far too high. And the groups at the highest risk of developing diabetes and obesity, including poorer people and Indigenous Australians, drink the most sugary drinks.

### 2.1 Consumption of sugary drinks is closely linked to type 2 diabetes and other conditions

Drinking more sugary drinks<sup>16</sup> increases a person's risk of developing type 2 diabetes.<sup>17</sup> Excess sugary drink consumption is responsible for an estimated 15 per cent of the diet-attributable diabetes burden in high-income countries.<sup>18</sup> Sugary drink consumption is also strongly linked to weight gain,<sup>19</sup> and contributes to other risk factors for type 2 diabetes.<sup>20</sup> Some recent studies have found evidence that sugary drink consumption increases diabetes risk factors in children.<sup>21</sup>

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16. We define sugary drinks as non-alcoholic, water-based beverages with added sugar (section 4.1 on page 15).

17. For example, see Malik and Hu (2022), Malik et al (2010), World Health Organisation (2023a), and Imamura et al (2015).

18. O'Hearn et al (2023) analyse the impact of suboptimal diet on type 2 diabetes in 184 countries around the world.

19. Malik and Hu (2022), Malik et al (2010), and World Health Organisation (2023a).

20. For example, sugary drinks have been linked to higher fasting glucose (Yoshida and Simoes (2018) and McKeown et al (2018)), and dyslipidaemia and hyperinsulinemia (Malik and Hu (2022)). Recent analyses of randomised control trials have found diets that limit sugary drinks reduce diabetes risk factors and body weight for obese adults: Perin et al (2022) and Zafar et al (2019).

21. Malik and Hu (2022) note evidence of weight gain and dyslipidaemia in children alongside higher sugary drink consumption, while Nikniaz et al (2021) find higher sugary drink consumption is linked to dyslipidaemia among children.

There is also strong evidence that sugary drink consumption leads to poor oral health and greater need for dental care.<sup>22</sup> This impact is even worse for diabetes sufferers, who are already at greater risk of tooth and gum problems.<sup>23</sup>

Sugary drinks are not alone in being linked to type 2 diabetes – ultra-processed foods more generally are also associated with higher risk of obesity and diabetes.<sup>24</sup> But sugary drinks offer little or no nutritional value.<sup>25</sup> In addition, sugary drinks don't tend to make you feel full, so you are more likely to consume more calories if sugary drinks are part of your diet.<sup>26</sup>

### 2.2 Australians drink a lot of sugary drinks

Australians consume far too much sugar. In 2022-23, the average Australian consumed 67 grams of sugar per day, or more than 1.3 times the recommended amount.<sup>27</sup> Children and adolescents in particular have too much sugar. Data from 2011-12 showed that nearly three-quarters consumed more than the daily recommended amount.<sup>28</sup>

Sugary drinks are a big part of the problem. Many 375ml cans of soft drink contain 8 to 12 teaspoons of sugar, nearly the entire daily recommended limit (Figure 2.1 on the following page).

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22. Valenzuela et al (2021).

23. Queensland Government (2022).

24. Lane et al (2024).

25. National Health and Medical Research Council (2013).

26. See Stribițcaia et al (2020) for a discussion on food texture and satiety, and Costa et al (2022) for a discussion on the impact of sugary drinks on appetite.

27. Australian Bureau of Statistics (2024a) and World Health Organisation (2015).

28. Australian Bureau of Statistics (2017).



In 2011-12, about 30 per cent of adults and nearly half of children reported drinking sugary drinks in the past day.<sup>29</sup> Young males were the largest consumers, with over 60 per cent of 14-18 year-old boys reporting that they had drunk a sugary drink in the past day.<sup>30</sup>

More recent data from 2022-23 estimated that sugary drinks make up nearly one quarter of our daily added sugar intake, more than any other major type of food.<sup>31</sup> The share may be higher because the data don't cover sugary drinks purchased at restaurants and cafes, including fast food outlets.

Although average sugary drink consumption has declined in Australia over the past couple of decades, sugar consumption remains too high.<sup>32</sup>

In addition, studies in NSW and South Australia found that sugary drink consumption has declined the least among disadvantaged groups.<sup>33</sup> A study of Indigenous children found that sugary drink consumption was the highest among the most disadvantaged.<sup>34</sup> This is of particular concern because these groups are at higher risk of obesity and diabetes.

29. Australian Bureau of Statistics (2014).

30. Data from 2017-18 suggest this share has declined, though that data excludes fruit and vegetable drinks with added sugar. In 2017-18, over 40 per cent of children and over 35 per cent of adults consumed sugary drinks at least once a week: Australian Bureau of Statistics (2018).

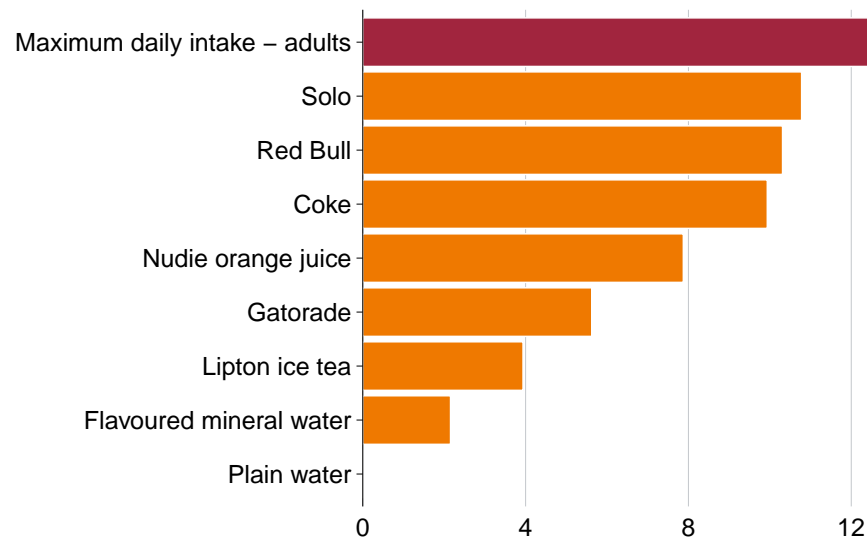
31. Australian Bureau of Statistics (2024a).

32. Australian Bureau of Statistics (ibid) found free sugar consumption over the past five years has declined a little, but remains around 1.3-1.4 times higher than the maximum recommended by the WHO. See Shrapnel and Butcher (2020) and Brand-Miller and Barclay (2017) for discussions of recent trends in sugary drink consumption, and Coyle et al (2022) for information on added sugars in the Australian food supply.

33. Dawes et al (2020) review consumption in South Australia and B. Nguyen et al (2023) analyse consumption in NSW.

34. Thurber et al (2020).

Figure 2.1: One can of soft drink can have nearly a day's worth of sugar  
Teaspoons of sugar in a 375ml serving



Sources: World Health Organisation (2015), Grattan analysis of Coles (2024).

The damage from sugary drinks is reflected in evidence, accepted by experts, and recognised by governments. In 2021, all Australian governments agreed to the goal of reducing sugar in packaged and processed food by 2030, including considering tax reform.<sup>35</sup>

35. Department of Health (2021).

### 3 Sugary drink taxes work

Grattan Institute proposed a sugary drinks tax in 2016.<sup>36</sup> Since then, many more countries have implemented such a tax. Today, more than 100 countries have a sugary drinks tax, covering most of the world's population.

There is good evidence that sugary drink taxes change people's behaviour and lead to healthier diets. Research shows that they increase sugary drink prices and reduce purchases. Tiered taxes, where the tax rate depends on how sugary a drink is, get manufacturers to reduce the sugar in their drinks.

And while the full effects will take time to emerge, there are already promising signs that sugary drink taxes are improving dental health and reducing obesity.

#### 3.1 Sugary drink taxes have spread around the world

There are taxes on sugary drinks in at least 117 countries around the world,<sup>37</sup> covering 57 per cent of the world's population.<sup>38</sup> They are part of a growing global push to prevent disease and premature death from chronic conditions that are linked to unhealthy diets.<sup>39</sup> While some of these taxes aim to raise revenue, most aim to improve health.<sup>40</sup>

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36. See Duckett et al (2016).

37. There are 117 national taxes and 13 city or state-level taxes: World Bank Group (2023).

38. Ibid.

39. World Health Organisation (2023a).

40. World Bank Group (2023) reports that just over half of the sugary drink taxes around the world aim to improve health.

#### 3.2 Sugary drink taxes raise prices and lower purchases

Studies of sugary drink taxes around the world show that they lead to higher prices. One study found that a 10 per cent tax leads to 8.2 per cent higher prices on average.<sup>41</sup> The pass-through to prices varies across countries, but on average sugary drink taxes lead to higher drink prices.

Higher prices mean fewer purchases.<sup>42</sup> As sugary drink prices go up, people respond by purchasing less. The evidence suggests that a 10 per cent tax leads to a 10-to-15 per cent drop in sugary drink sales, though the size of the change varies around the world.<sup>43</sup> One study in a convenience store in a Melbourne hospital found that a 20 per cent increase in the price of sugary drinks was followed by a 28 per cent decline in purchases.<sup>44</sup>

#### 3.3 Tiered taxes get manufacturers to cut sugar

To avoid the tax and its impact on sales, manufacturers cut the sugar in their recipes.<sup>45</sup> This is the ideal outcome from a sugary drinks tax. It

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41. Manufacturers don't always pass on the tax in full. A systematic review of studies on sugary drink taxes around the world found that there has been incomplete pass-through in a number of countries, as well as some instances of increasing prices by more than the tax: Andreyeva et al (2022).

42. Some studies find that sugary drink taxes have no impact on sugary drink consumption (see Itria et al (2021)), but this seems implausible. Data on purchases tend to be higher quality (Andreyeva et al (2022)) and less prone to measurement error or bias (Cawley and Frisvold (2023)).

43. For example, Andreyeva et al (2022) find that almost all studies reported a reduction in purchases. The meta-analysed estimate was a 15 per cent sales reduction. Teng et al (2019) find a 10 per cent sales reduction.

44. Blake et al (2018).

45. This is known as 'reformulation' and includes adding new low- and no-sugar products.

maximises the gain and minimises the pain: as drinks get healthier, the tax is reduced or eliminated.

The evidence is strongest for 'tiered' taxes. These taxes are higher for the drinks with the most sugar (Table 3.1 on page 14). They create a strong incentive for manufacturers to remove added sugar from the sugariest drinks, which are the most harmful.<sup>46</sup> The incentive created by the tax is far stronger than those from voluntary schemes, which have failed to achieve real progress (Box 1).

The UK introduced a sugary drinks tax in 2018. It has three tiers, which are based on how many grams of sugar a drink has per 100ml. There is no tax on drinks with less than 5 grams. There is a tax of 18 pence a litre for drinks with between 5 and 8 grams. The tax rises to 24 pence for drinks with even more sugar.

The tax has transformed the drinks sold in the UK. Between 2015 and 2019, the share of products above the tax threshold, with more than 5 grams of sugar per 100ml, fell from more than half (52 per cent) to just 15 per cent.<sup>47</sup> The share with very high sugar crashed from 38 per cent to just 7 per cent.<sup>48</sup> Between 2015 and 2020, sugar consumption from sugary drinks dropped 46 per cent.<sup>49</sup>

Today, Australia is almost exactly where the UK was before it introduced the tax (Figure 3.1 on the following page).<sup>50</sup>

46. Manufacturers have an incentive to reformulate their products if the costs of reformulation are lower than the costs from the tax, including any tax not passed through to consumers, and consumers choosing other products that are taxed less: Allais et al (2023). Under tiered taxes, this incentive is particularly strong near the boundaries between the tiers.

47. Scarborough et al (2020).

48. Ibid.

49. Public Health England (2022).

50. In Australia, 46 per cent of products have more than 5 grams of sugar per 100ml, including 33 per cent with more than 8 grams per 100ml, based on Grattan Institute analysis of The George Institute for Global Health's FoodSwitch data on

### Box 1: Self-regulation has failed

If voluntary agreements work, they can avoid the cost, hassle, and complexity of legislation and enforcement. But voluntary, industry-designed policies are often weak, contain loopholes, and aren't adhered to. This only delays genuine action, as we have seen again and again, including in food labelling, salt reduction, junk-food advertising, and sugary drinks.<sup>a</sup>

In 2018, the Australian Beverages Council released a voluntary 'Sugar Reduction Pledge',<sup>b</sup> announced while a Senate committee developed recommendations to combat obesity. The pledge included a voluntary goal to reduce the sugar in soft drinks by 20 per cent between 2015 and 2025, updated to 25 per cent in 2022.

The pledge is on track to be met, but only because it is weak, and includes progress made before it started. Between 2015 and 2022, the sugar in Australian soft drinks decreased by 18 per cent.<sup>c</sup> That is less than half of the UK's 46 per cent reduction in just five years with a sugary drinks tax.<sup>d</sup>

Only four manufacturers signed up to the pledge.<sup>e</sup> Ironically, they achieved an even smaller decrease in sugar content in their drinks than manufacturers who didn't sign up.<sup>f</sup> And now evidence has emerged that the sugar in popular soft drinks Fanta and Sprite has increased by 40-to-60 per cent since 2021,<sup>g</sup> when the industry loudly proclaimed it had reduced sugar in these drinks.<sup>h</sup>

a. Breadon et al (2023).

b. KPMG (2023).

c. Ibid.

d. Public Health England (2022).

e. KPMG (2023).

f. Pinho-Gomes et al (2023).

g. Booth (2024); and Davey (2024).

h. The Coca-Cola Company (n.d.).

Other countries have also had good results from tiered taxes.<sup>51</sup> Within a year of a sugary drinks tax being introduced in Portugal in 2017, there was an 11 per cent decline in total energy intake through sugary drink consumption. In South Africa, manufacturers adding less sugar to their drinks resulted in a decline of more than 10 per cent in the sugar in household beverage purchases.<sup>52</sup>

### 3.4 There is promising evidence on health improvements

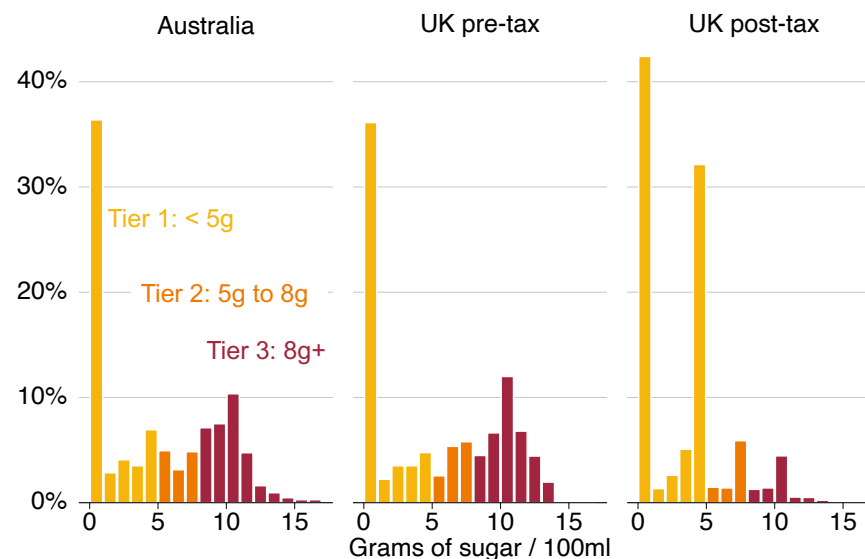
Health benefits take longer to appear than changes in prices and purchases, because the onset of conditions such as diabetes takes time.<sup>53</sup> Half of the nation-wide sugary drink taxes were introduced in the past 10 years, meaning the long-term effects of these taxes are not yet clear.

But there are early signs that sugary drink taxes are beginning to improve health. The taxes appear to have already reduced obesity in some groups. Studies in Mexico and the UK found that obesity among primary school girls declined after the introduction of a sugary drinks tax.

One study found that within two years of the tax being introduced in the UK, there was an 8 per cent reduction in obesity levels in 10- and 11-year-old girls.<sup>54</sup> The reduction was biggest in the most disadvantaged areas.

**Figure 3.1: A tiered tax encourages manufacturers to reduce the sugar in their drinks**

Share of products by sugar content



Sources: Australian data drawn from *The George Institute for Global Health's FoodSwitch Monitoring Dataset 2023*, UK data from *Scarborough et al (2020)*.

sugar content in drinks available in Australian supermarkets in 2023. We gratefully acknowledge The George Institute For Global Health for providing these data.

51. In a systematic review, all of the included studies on tiered tax models found that manufacturers reduced sugar: Andreyeva et al (2022).  
 52. See Goiana-da-Silva et al (2018) for analysis in Portugal and Bercholz et al (2022) for analysis in South Africa. In South Africa, reformulation was responsible for about 30 per cent of the total post-tax fall in consumption of sugar from drinks: Essman et al (2021).  
 53. World Health Organisation (2022).  
 54. Rogers et al (2023a).

Similarly in Mexico, a 10 per cent increase in sugary drink prices was associated with a 3 per cent decline in obesity and overweight among adolescent girls within two years.<sup>55</sup> This effect was mostly among heavier girls, and was stronger in cities with bigger price increases.

There is also evidence that sugary drink taxes improve the oral health of children. Rates of dental decay and hospital visits for oral health problems have declined in several countries after sugary drink taxes were introduced (see Box 2).

And now, there is promising real-world evidence that sugary drink taxes may reduce gestational diabetes. Gestational diabetes increases risks for mothers and babies, including the risk of serious birth complications. Later in life, it increases the risk of developing type 2 diabetes and cardiovascular disease. A US study of more than five million pregnant women found that sugary drink taxes reduced gestational diabetes by about 40 per cent.<sup>56</sup>

Modelling studies tend to find that a sugary drinks tax will make us healthier by reducing obesity and diabetes,<sup>57</sup> improving oral health,<sup>58</sup> and leading to significant reductions in years lost to disability and ill-health.<sup>59</sup>

These studies predict the biggest long-term health gains will be among low-income households, since they often consume more sugary drinks and are at higher risk of diseases such as obesity and diabetes.<sup>60</sup>

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55. Gračner et al (2022).

56. Jackson et al (2023).

57. Veerman et al (2016), Basto-Abreu et al (2019) and Reyes-García et al (2023).

58. Sowa et al (2019) and Shakiba et al (2022).

59. World Bank Group (2020).

60. Jain et al (2020) found that three of the six studies they looked at that considered distributional equity found lower-income groups gained the largest health benefits. Settings where high-income groups record the largest health benefits are typically those where they have higher sugary drink consumption, which is not the case in Australia (Section 5.1).

### Box 2: Sugary drink taxes have improved oral health

Oral health has been a winner from sugary drink taxes in several countries.

In the UK, there was a 12 per cent reduction in hospital admissions for decayed tooth removals in children, with the largest reductions among younger children.<sup>a</sup>

Unlike for obesity, there were no differences between advantaged and disadvantaged children. One explanation for the stronger effect in younger children is that the enamel on baby teeth is thinner than on adult teeth, meaning that younger children are particularly vulnerable to the effects of sugary drinks.

In Mexico, the sugary drinks tax was associated with a decline in tooth decay and cavities for adults and older children, but not for young children.<sup>b</sup> This study focused on more general tooth decay rather than hospital admissions, which may explain why the results differ from the UK study.

In Philadelphia, there was a 22-to-30 per cent decline in new cases of tooth decay for disadvantaged adults and children.<sup>c</sup> No change was detected for the wider population. This may reflect the greater decline in sugary drink consumption among disadvantaged groups, and their much higher rates of tooth decay.

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a. Rogers et al (2023c).

b. Hernández-F. et al (2021).

c. Petimar et al (2023).

Table 3.1: Tiered taxes target drinks with more sugar

Country	Sugar content (g per 100ml)	Tax rate
<b>UK</b>	Less than 5g	0
	5g to 8g	£0.18 per litre
	8g or more	£0.24 per litre
<b>Portugal</b>	Less than 2.5g	€0.01 per litre
	2.5g to 5g	€0.06 per litre
	5g to 8g	€0.08 per litre
	8g or more	€0.20 per litre
<b>South Africa</b>	Less than 4g	0
	4g or more	0.021 ZAR per gram of sugar

Source: World Bank Group (2023).

## 4 Australia should introduce a sugary drinks tax

Australia should introduce a tax on sugary drinks. The tax rate should be highest for drinks with the most sugar, to encourage manufacturers to cut the sugar in their drinks. A tax with a top rate of 60 cents per litre would raise nearly \$500 million in the first year and reduce average sugar consumption by nearly 700 grams per person each year.

### 4.1 The tax should apply to sugar-sweetened beverages

The tax should apply to non-alcoholic, water-based beverages with added sugar.<sup>61</sup>

Initially, 100 per cent fruit juices with no added sugar should not be taxed because, unlike the drinks that would be taxed, they contain nutrients. But these drinks can still have as much sugar as drinks with added sugar, so taxing them should be considered if sugar consumption from drinks stays too high after the tax is implemented.<sup>62</sup>

### 4.2 A tiered tax would get manufacturers to add less sugar

Based on success overseas (section 3.3 on page 10), we recommend a tiered tax,<sup>63</sup> similar to the UK's tax, with higher rates for drinks with the most sugar:

less than 5 grams of sugar per 100ml: **no tax**

between 5 and 8 grams of sugar per 100ml: **40 cents per litre**

8 or more grams of sugar per 100ml: **60 cents per litre.**

This would create sharp incentives for manufacturers to reduce the sugar in high-sugar drinks, shifting them into the categories with a lower tax, or no tax. For example, reducing the sugar content from 6 grams to just under 5 grams would reduce the tax by 40 cents per litre. Moving from 9 grams to just below 8 grams would reduce it by 20 cents per litre.

Under our proposed tax, the price of drinks with the most sugar would increase by about 12 per cent on average.<sup>64</sup> This equates to a 15c increase for a 250ml can of Coke, or a \$1.20 increase for a 2-litre bottle of Coke.<sup>65</sup>

International experience suggests this would be enough to make a real difference to what Australians drink, and to our health.<sup>66</sup>

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61. Added sugar includes caloric sweeteners such as high-fructose corn syrup, honey or fruit juice concentrate, and fructose and glucose.

62. The case for expanding the tax to cover juices would depend on trends in overall sugar intake, the sugar content of juices, and assessment of any nutritional impact from reduced juice consumption. The World Health Organization recommendations on limiting sugar intake apply to the sugar in fruit juices.

63. In 2016, in Duckett et al (2016), Grattan Institute recommended a uniform sugar content tax. As this chapter explains, data have emerged since then showing that tiered taxes drive product reformulation, so we now recommend this tax structure.

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64. This assumes 82 per cent pass-through of the tax. If instead there was full pass-through, the average price increase would be about 14 per cent. There is substantial variation between products, with electrolyte drink prices increasing by 14 per cent and energy drink prices increasing by 6 per cent.

65. Assuming Coca-Cola attracts the higher tax rate.

66. The World Health Organisation recommends a higher tax rate with a 20 per cent increase in prices: World Health Organisation (2022). Our proposed tax is set at a similar level to those implemented in many countries that have achieved good results. This will limit regressive impacts and other risks (see Chapter 5), and the tax could be raised in the future if warranted (see section 4.5 on page 17).

### 4.3 The tax would reduce consumption of high-sugar drinks

Grattan Institute modelling shows that under our proposed tax, consumption of drinks with 5 or more grams of sugar could be expected to decline by over 10 litres per person per year, which equates to nearly 700 grams less sugar per person each year (see Appendix).

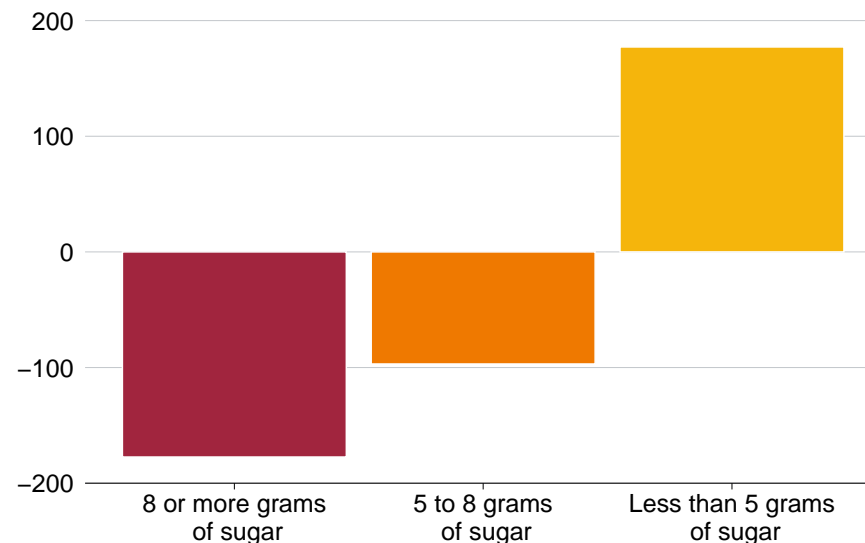
Our modelling suggests there would be a 6.5 per cent decline in the overall volume of sugary drinks sold in Australia (Figure 4.1).<sup>67</sup> The fall for drinks with more than 5 grams of sugar is much larger at about 24 per cent, or 275 million litres, but is somewhat offset by higher consumption of drinks with less than 5 grams of sugar.<sup>68</sup> As a result, sugar consumption from sugary drinks would fall by nearly 700 grams per person, or almost 15 per cent. Our results are similar to those from similar taxes in other countries.

The decline in sugary drink consumption, and resulting sugar intake, would be more significant than the gradual reduction that has occurred over the past couple of years.<sup>69</sup>

These changes should flow through to real improvements in health. Studies have suggested that sugary drink taxes in Australia could lead to tens of thousands of extra years of life, hundreds fewer people developing diabetes each year, and tens of thousands of avoided cases of dental decay.<sup>70</sup>

67. This is similar to what has occurred in other countries. Gonçalves et al (2023) reported a 6.8 per cent decline in sales for Portuguese companies. Law et al (2020a) found that there was a small drop in domestic turnover for manufacturers in the UK after the announcement of the tax, but this did not last.  
 68. About 60 per cent of this decline is due to reformulation, with the remainder due to changing consumption patterns.  
 69. Sugary drink consumption per person fell 7.8 per cent in the past two years, and free sugar consumption from sugary drinks declined by 6.5 per cent over the same period (Australian Bureau of Statistics (2024a).)  
 70. Lal et al (2017) estimated that a 12 per cent reduction in consumption (following a 20 per cent tax) would save 111,700 years of life, while Veerman et al (2016)

Figure 4.1: Under our proposed tax, people would switch from high-sugar drinks to low- or no-sugar drinks  
 Million litres consumed per year, by tax tier



Note: Changes are in the first year that the tax is introduced, compared to previous consumption.

Source: Grattan Institute modelling.

### 4.4 The tax would help government budgets

Although the main goal of a sugary drinks tax should be to improve Australians' health, the federal budget would also benefit.

estimated that there would be 800 fewer type 2 diabetes cases each year. T. M. Nguyen et al (2023) predict that a 12 per cent reduction would result in 511,000 fewer decayed teeth over the course of a decade.



Sugary drink taxes raised about \$680 million in the UK in 2022-23, about \$130 million in Portugal in the first year, and \$16 million in South Africa in the first two years.<sup>71</sup>

Grattan Institute modelling shows that a sugary drinks tax in Australia would raise nearly \$500 million in the first year, if it were introduced today.<sup>72</sup> In addition, there would be significant savings from less need for healthcare,<sup>73</sup> and more tax revenue from more people being well enough to work.

#### 4.5 Implementation and monitoring

The federal government should take three steps to ensure that the implementation of the tax goes smoothly, and that it has the intended impact on Australians' health.

First, there should be at least one year's notice before the tax is introduced. This would give manufacturers time to change their recipes and introduce lower-sugar products, minimising the impact on their sales. The delay wouldn't hold up health gains. Many of the changes to reduce sugar in the UK happened after the announcement of the tax, but before it was implemented.<sup>74</sup>

Second, the tax should be indexed to inflation. That way, the impact on prices will not decline over time. This already happens for excise taxes on other products such as alcohol and fuel.

Third, the impact of the tax should be regularly reviewed by the Australian Centre for Disease Control (CDC). Such reviews could consider various outcomes including the pass-through of the tax to prices, and changes in the sugar content of drinks, sales volumes, and consumption. Health impacts should also be evaluated, which could include dental treatments, hospital admissions, and obesity rates. If the CDC judged that the tax wasn't having the intended effects, for example on prices or sugar content, it should recommend improvements.<sup>75</sup>

If sugar consumption remained too high several years after the tax was introduced, the CDC could recommend increases to the tax, changing the tax tiers, or applying the tax to a broader range of products.

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71. All amounts have been converted to Australian dollars. See HM Revenue & Customs (2023) for UK estimates, Goiana-da-Silva et al (2018) for Portuguese estimates, and Hofman et al (2021) for South African estimates.

72. \$498 million. Revenue would then be expected to decline over time as sugar consumption from sugary drinks falls. See Appendix for further detail.

73. For example, Lal et al (2017) estimated total healthcare system savings would be \$1.7 billion over the life of the modelled population, and out-of-pocket cost savings would be \$300 million.

74. Two years' notice was provided in the UK: Law et al (2020a) and Scarborough et al (2020). Scarborough et al (ibid) report a significant decline in the proportion of drinks above the tax threshold just prior to implementation. Since sugar taxes are now much more widespread, a one-year delay may be sufficient in Australia.

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75. For example, the CDC could consider measures to boost people's awareness of the tax. Donnelly et al (2021) found that including the phrase 'includes sugary drink tax' alongside the new price led to bigger falls in consumption. Potential measures not related to price include front-of-package labelling, advertising restrictions or limits on added sugar content. OECD research on obesity prevention found that reform packages can be more effective than implementing specific interventions in isolation: OECD (2023).

## 5 None of the objections stack up

Most policies have risks and trade-offs, but for a sugary drinks tax they are unusually small. Some concerns don't stand up to scrutiny, others will have only a small impact, and none should stop the federal government from acting.

A tiered tax, with no tax on low-sugar drinks, as we propose, would help protect disadvantaged people from increased costs, make it easier for manufacturers to adjust, and reduce the incentive to add artificial sweeteners.

For manufacturers and sugar farmers, the financial impact would be negligible. And while new treatments for obesity and diabetes are a breakthrough, prevention remains better than any cure.

### 5.1 Objection 1: The poorest will pay the most

Disadvantaged groups buy the most sugary drinks,<sup>76</sup> raising concerns that the cost of the tax would be greatest for those who can least afford it. But the tax we propose would leave the price of most drink products unchanged, the financial impact on households would be small, and the biggest health gains would go to disadvantaged groups.

There would be plenty of ways people could avoid the tax. Under the tiered tax we recommend, more than half of the drinks on the market today wouldn't be taxed, and the range of tax-free drinks would grow over time as manufacturers changed their recipes to reduce sugar and avoid the tax (section 3.3 on page 10).

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76. As shown in a range of Australian studies, such as Australian Bureau of Statistics (2014), Miller et al (2020), Dawes et al (2020), B. Nguyen et al (2023), and Thurber et al (2020).

The financial impact of our proposed sugary drinks tax would be small, even for disadvantaged groups.<sup>77</sup> and the revenue it raises could be spent on policies to offset the impact on the most disadvantaged Australians. We estimate the tax would cost 29 cents per week, per person, or 73 cents per week for an average household.<sup>78</sup>

Most importantly, the health gains from the tax would benefit disadvantaged groups the most, because they drink more sugary drinks, and are more at risk of diseases such as diabetes.<sup>79</sup> Studies suggest that disadvantaged groups would get the biggest improvements in obesity and years of healthy life,<sup>80</sup> dental health, and money spent on dental care.<sup>81</sup>

For all these reasons, it would be better for disadvantaged Australians if the tax goes ahead.

### 5.2 Objection 2: People will get their sugar elsewhere

There is strong evidence that sugary drink taxes increase prices, reduce purchases, cause manufacturers to add less sugar, and lead to people drinking less sugar.

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77. Modelling a much higher and broader tax (20 per cent on all sugar-sweetened drinks), Lal et al (2017) estimated that disadvantaged people would pay 9c more per week than the most advantaged group (adjusted to 2023 dollars using the Consumer Price Index).

78. It is difficult to estimate the impact on disadvantaged people relative to the average due to data limitations. Using consumption data from Dawes et al (2020), we estimate that the most disadvantaged 20 per cent of the population would pay an additional 33 cents per week per household. However, this does not account for larger reductions in sugary drink consumption that this group may have.

79. Australian Bureau of Statistics (2023a).

80. Lal et al (2017).

81. T. M. Nguyen et al (2023).

But whether sugary drink taxes cause people to reduce their overall sugar consumption has been measured less often, and not as well. Most analysis of consumption relies on survey data, which tend to be lower quality than the data used in studies of prices and purchases,<sup>82</sup> and prone to measurement error or bias.<sup>83</sup> As a result, the evidence is mixed, with some studies finding consumption declines, while others find little change.<sup>84</sup>

But there are still good reasons to conclude that the gains from less consumption of sugary drinks aren't cancelled out by people getting more sugar elsewhere.

There is emerging evidence of health improvements from the introduction of sugary drink taxes, which is summarised in Section 3.4 on page 12.

Even if people did shift from getting calories from sugary drinks to getting them from other sources, sugar appears to be more harmful in the form of sugar-sweetened drinks than it is in foods. Sugary drinks are often drunk quickly, cause rapid spikes in blood glucose and insulin, and make people feel less satisfied, leading them to consume more calories afterwards.<sup>85</sup>

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82. Of 13 studies on sugary drink consumption reviewed in Andreyeva et al (2022), most were assessed as low quality due to the underlying data quality, with the authors noting the current lack of large representative studies on sugary drink consumption. In contrast, most studies on prices and sales were deemed to be high quality.

83. Cawley and Frisvold (2023).

84. Itria et al (2021) discuss consumption of sugary drinks. Oddo et al (2021) found evidence of a small increase in sweets purchased in Seattle after the tax, but Gibson et al (2021) found that in Philadelphia there was no substitution to alternative sugar sources.

85. Malik and Hu (2022); Almiron-Roig et al (2013); Malik and Hu (2019); Stribițcaia et al (2020). This may also explain why drinks with added sugar are associated with development of diabetes even after taking account of people's weight: Imamura et al (2015).

Finally, a sugary drinks tax isn't the only policy Australia should adopt to improve what we eat and drink. Complementary policies should target other unhealthy foods.<sup>86</sup>

### 5.3 Objection 3: Artificial sweeteners are bad for you

Artificial sweeteners are increasingly present in Australian food and drinks,<sup>87</sup> and using them to replace sugar is generally associated with lower energy intake.<sup>88</sup> However, recent World Health Organisation guidelines conditionally recommend that artificial sweeteners are not used for long-term weight loss, citing mixed evidence on their effectiveness and the potential increased risk of diseases such as diabetes.<sup>89</sup>

The evidence of harm from added sugar is far stronger than the evidence of harm from artificial sweeteners. And replacing very sugary drinks with low-sugar, no-sugar, or naturally sweet products remains the best approach for improving health – one which our proposed tax would promote.

By exempting drinks with a low amount of sugar, our proposed tax would not necessarily promote artificial sweeteners. Manufacturers could reformulate products to contain less, but not zero, sugar and still avoid the tax. Nearly 20 per cent of drinks with added sugar already have a small enough amount of sugar to avoid our proposed tax.

In addition, drinks without added sugar, such as bottled water and fruit juice, would not be taxed, meaning people would have options to avoid both sugar and artificial sweeteners.

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86. Many of these policies are discussed in Breadon et al (2023).

87. Dunford et al (2022).

88. World Health Organisation (2023b).

89. Ibid.

#### 5.4 Objection 4: It will reduce manufacturer profits

A tiered tax and delayed implementation, as we propose, would help manufacturers avoid negative financial impacts.

In the UK, the two-year delay between the announcement of the tax and its implementation gave manufacturers enough time to reformulate their products to avoid the tax. As a result, they didn't suffer any lasting financial consequences.<sup>90</sup> In contrast, in Portugal, the tax was implemented just a few months after it was announced. One study found a negative financial impact on manufacturers, but even in this case it was small.<sup>91</sup>

With the delay we propose, there should be no meaningful financial impact on manufacturers. Although they may change their recipes, this is a regular process for food manufacturers, and as experience overseas shows, any added costs would be very minor.<sup>92</sup>

#### 5.5 Objection 5: Sugar farmers will suffer

The Australian sugar industry produces about 4-to-4.5 million tonnes of raw sugar each year.<sup>93</sup> The vast majority, 85 per cent, is exported, mostly to Asian countries.<sup>94</sup> Food and drink manufacturers are responsible for about 30 per cent of sugar industry revenue within Australia.<sup>95</sup> While soft drink manufacturers are the largest customers

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90. There was a small decline in stock returns after the announcement (Law et al (2020b)) and a decline in domestic turnover (Law et al (2020a)), but both effects were temporary.

91. Gonçalves et al (2023) found an insignificant decline in net income and an increase in liabilities.

92. Food manufacturers tend to reformulate products every few years. Any costs from reducing sugar in this process are likely to be small, especially since recipes have already been adjusted in many other countries with sugar taxes, providing models for firms to follow.

93. Department of Agriculture, Fisheries and Forestry (2022).

94. Australian Sugar Milling Council (n.d.).

95. For more information on the sugar industry in Australia, see Clarkson (2020).

within that industry, the decline in sugar consumption from the tax we propose would only amount to half a percent of total Australian production.<sup>96</sup>

That means the tax shouldn't have a significant impact on the Australian sugar industry. The reduction in domestic demand for sugar should be more than offset by increasing exports, given that global demand for sugar is forecast to gradually increase.<sup>97</sup>

#### 5.6 Objection 6: New drugs will fix obesity and diabetes

New drugs such as semaglutide (better known by the brand name 'Ozempic') are helping many people with diabetes and obesity, but better nutrition policies will still be crucial to improving our health.<sup>98</sup>

Not everyone will want to use these medications, they won't work for everyone, and they are expensive. Ozempic costs more than \$1,500 per year for most patients, meaning the cost of medicating all obese Australians would be about \$10 billion a year.<sup>99</sup> These drugs can also cause unpleasant side-effects, the risks of long-term use are unknown, and people's weight tends to return if they stop taking them.

While these drugs represent a genuine breakthrough, prevention remains better than a cure.

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96. A decline of about 15 per cent or 20,000 tonnes.

97. Department of Agriculture, Fisheries and Forestry (2024).

98. Chao et al (2022).

99. Coyle (2022).

## 6 Appendix: Our modelling assumptions

### 6.1 Key modelling inputs

#### 6.1.1 Consumption data

We obtained sugary drink consumption from the 2022-23 ABS Apparent Consumption of Selected Foodstuffs data release, which reported sugary drink consumption of 1.3 billion litres.<sup>100</sup> Categories of sugary drinks include soft drinks, electrolyte drinks, energy drinks, cordials, fruit and vegetable drinks, and fortified waters. We excluded other categories of sugary drinks such as iced teas due to lack of available data. This exclusion makes our assessment more conservative.

The data cover drinks purchased from the food retail sector, including supermarkets and convenience stores. Since 'out-of-home' consumption at venues such as cafes and fast food outlets is not included, we adjusted the volumes using data from Statista on the split of out-of-home to total consumption of soft drinks and juices.<sup>101</sup>

We estimated total sugary drink consumption to be 1.48 billion litres per year, which is broadly consistent with previous Grattan analysis.<sup>102</sup>

#### 6.1.2 Sugary drink prices

We assumed an average price of \$4.20 per litre. We scraped data on prices for soft drinks, electrolyte drinks, energy drinks, cordials, and fruit drinks from Coles' website, and we used the median price. We also calculated median prices at the category level. We excluded

sugar-free drinks from this analysis. This figure is higher than other estimates of average prices, even accounting for inflation.<sup>103</sup>

If prices are lower than we assumed, the price change from the tax will be larger than our model predicts, as will the changes in total consumption. On the other hand, the price may be higher than we assumed, since supermarkets typically have cheaper unit prices than other retailers and out-of-home settings.

#### 6.1.3 Sugar content data

We sourced data on sugar content from The George Institute for Global Health's FoodSwitch database.<sup>104</sup> The database contains nutritional information, including ingredients and grams of sugar per 100ml, for more than 1,700 drinks available from major Australian retailers in 2023. We used sugar content data for sugar-sweetened cordials, soft drinks, electrolyte drinks, energy drinks, juice drinks (excluding 100 per cent fruit juices), and flavoured waters.

In the absence of product-specific sales data, we assumed that the average sugar content per category was the simple average across all products within that category.

#### 6.1.4 Sales volumes by sugar content tiers

In the absence of consumption data by sugar content, which is not publicly available, we made some assumptions about the share of

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100. According to Australian Bureau of Statistics (2024a), sugar-sweetened drink consumption accounts for 65 per cent of sweetened-beverage consumption.

101. Statista (2024).

102. Duckett et al (2016) estimated sugary drink consumption in 2015 to be 1.62 billion litres. Data since then have indicated a gradual decline.

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103. For example, Duckett et al (ibid) used an average price of \$2 per litre in 2015 (or about \$2.50 in 2024 dollars, inflated using waters, soft drinks, and juices inflation (Australian Bureau of Statistics (2024b)), while Australian Medical Association (2021) used \$1.44 per litre for supermarket prices, or \$1.71 in 2024 dollars.

104. Dunford et al (2014).

total consumption that is of products with less than 5 grams of sugar, between 5 and 8 grams of sugar, and 8 or more grams. To do this, we used estimates of the distribution of consumption by sugar content in the US and in the UK before the sugar tax.

In the US in 2016, Powell et al (2020) found that drinks with 8 or more grams of sugar accounted for 78 per cent of consumption. Drinks with between 5 and 8 grams accounted for 19 per cent of consumption, while the remaining 3 per cent was drinks with less than 5 grams of sugar.

Between 2014 and 2016 in the UK, 46 per cent of consumption was of drinks with 8 or more grams of sugar, 9 per cent was drinks with between 5 and 8 grams of sugar, and 45 per cent was drinks with less than 5 grams of sugar.<sup>105</sup>

We took the average of these estimates, and assumed that 63 per cent of consumption was of drinks with 8 or more grams of sugar, 14 per cent was of drinks with between 5 and 8 grams of sugar, and 23 per cent was of drinks with less than 5 grams of sugar. These estimates are broadly consistent with the non-sales-weighted distribution of sugary drinks available in Australia.<sup>106</sup>

## 6.2 Key modelling assumptions

Our modelling relies on several key assumptions:

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105. We calculated these shares using data from Rogers et al (2023b). We assumed that all tax-eligible products with 0 grams of sugar were artificially sweetened drinks and so excluded them from our calculations.

106. Sugar content data from the FoodSwitch database imply a slightly lower share of products with 8 grams of sugar or more, and more products with between 5 and 8 grams of sugar. Analysis from Chepulis et al (2018) suggests this share is relatively stable.

We assumed pass-through of the tax to prices would be 82 per cent, consistent with evidence from implemented sugar drink taxes around the world.<sup>107</sup>

We derived the price elasticities of demand (PEDs) from Australian-specific estimates in the literature.<sup>108</sup> We assumed the aggregate PED to be -0.63, implying that a 1 per cent increase in prices would lead to a 0.63 per cent decline in consumption. This implies less sensitivity to prices than has been found in international contexts (for example, Teng et al (2019) found an average PED of -1.0 and Andreyeva et al (2022) calculated a PED of -1.59). This may reflect lower responsiveness of Australian consumers to price changes, or sugary drink taxes generating larger consumption changes than models anticipate. However, given the large range of PEDs around the world, we proceeded with the Australian-specific estimates.

We estimated the per capita variables using an estimated resident population of 26.82 million people as at September 2023 (the latest release at the time of writing).

### 6.2.1 Assumptions on reformulation

We assumed that reformulation before the implementation of a sugary drinks tax in Australia would follow a similar pattern to what occurred in the UK. We consider this to be a reasonable assumption, given the

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107. Andreyeva et al (2022) conducted a systematic review and meta-analysis and found average pass-through of 82 per cent.

108. Sharma et al (2014) used household-level scanner data to estimate PEDs across 10 categories of drinks. This discussion refers to own-price elasticities. Cross-price elasticities, where demand for a product reacts to changes in the prices of other products, are excluded. It is highly likely there would be some substitution between products, particularly those taxed at different rates. Substitution is likely to be larger between sugary and artificially-sweetened drinks, which are out-of-scope for this analysis.

similarity between the Australian and UK (pre-tax) distribution of drinks by sugar content, and because our proposed tax is very similar to the UK's model.

To do this, we made assumptions about changes in the average sugar content within tiers, and the distribution of volume across tiers.

Bandy et al (2020) used retail scanner data and estimated that between 2015 and 2018 in the UK, the sales-weighted average sugar content declined 1.8 per cent for drinks with 8 or more grams of sugar, 15.6 per cent for drinks with between 5 and 8 grams of sugar, and 12 per cent for drinks with less than 5 grams of sugar. Analysing different retail scanner data, Public Health England (2018) found that the sales-weighted average sugar content for drinks with 8 grams or more of sugar declined 0.6 per cent, and increased 2.6 per cent and 40.9 per cent for drinks with between 5 and 8 grams of sugar and drinks with less than 5 grams of sugar, respectively.

Using data from Bandy et al (2020), we estimated that the share of total consumption volume between 2015 and 2017 declined by 8 percentage points for drinks with 8 or more grams of sugar, by 10 percentage points for drinks with between 5 and 8 grams of sugar, and increased by 18 percentage points for drinks with less than 5 grams of sugar.<sup>109</sup> Public Health England (2018) estimated that the changes in the relative share of total consumption volume were -6 percentage points each for drinks with 8 or more grams of sugar and drinks with between 5 and 8 grams of sugar, and +15 percentage points for drinks with less than 5 grams of sugar.

For both the average sugar content and the distribution of volume across tiers, we took the average of these two sources. For drinks

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<sup>109</sup> We use estimates for the change in consumption from 2015 to 2017 because our model estimates the change in consumption during the first year of the tax. Because our model does not estimate changes in average sugar content, we use an additional year of data for this parameter (i.e. from 2015 to 2018).

with 8 or more grams of sugar, the average sugar content declines 1.2 per cent and the share of total consumption declines 6 percentage points. For drinks with between 5 and 8 grams of sugar, the average sugar content declines 6.5 per cent and the share of total consumption declines 6 percentage points. For drinks with less than 5 grams of sugar, the average sugar content increases 14.5 per cent and the share of total consumption increases by 12 percentage points.

### 6.3 Results

Prices increase as a result of our proposed tax. For drinks with more than 8 grams of sugar, the average price increase is 12 per cent. For drinks with between 5 and 8 grams of sugar, the average price increase is 8 per cent. Because they are not charged a tax, the price of drinks with less than 5 grams of sugar does not change.

Within these categories, there is a lot of variation in the size of the price increase. Cheaper drinks have a relatively larger price increase than more expensive drinks. For example, the price of an unbranded bottle of soft drink that costs \$1 per litre will increase by 60 per cent (if it contains more than 8 grams of sugar), but the price of a bottle that costs \$3 per litre will increase by 20 per cent.

Our price estimates are unweighted by sales due to data limitations. If sales of cheaper drinks are higher than sales of more expensive drinks, the average price change will be higher than our estimate suggests.

When prices go up, consumption falls. We estimate that overall sugary drink consumption would decline by 6.5 per cent, or about 3.6 litres per person per year.

The declines are more significant for drinks with the most sugar. There would be a fall of 19 per cent in purchases of drinks with 8 or more grams of sugar (6.6 litres per person per year), and a 47 per cent decline for drinks with between 5 and 8 grams of sugar (3.6 litres per

person per year). This would be somewhat offset by a 52 per cent (6.6 litres per person per year) increase in consumption of drinks with less than 5 grams of sugar.

This decline is the result of changing consumer preferences and reformulation. For drinks with more than 8 grams of sugar, about half of the decline is due to reformulation. For drinks with between 5 and 8 grams of sugar, 90 per cent of the drop would be because of reformulation to bring the sugar content below the 5 grams of sugar per 100ml threshold. All of the increase in consumption of drinks with less than 5 grams of sugar is because of reformulation.

Lower consumption of the most sugary drinks flows through to a fall in sugar consumption. We estimate overall sugar consumption would decline by 18,200 tonnes in the first year of the tax, or 15 per cent. This equates to nearly 700 grams per person.

Were it introduced today, we estimate that our proposed sugary drinks tax would raise \$498 million in its first year. We would expect this figure to decline in subsequent years as more drinks are reformulated to reduce or remove taxation.

The additional cost to the average household would be 73c per week, or \$38 per year.

Manufacturers would also incur some costs from the tax, due to lower demand for sugary drinks, reformulation efforts, compliance costs, and if they choose not to pass the full amount of the tax through to consumers. However, evidence from international sugary drink taxes shows that the impact has been limited (see section 5.4). This suggests that overall costs are small, or that manufacturers have been able to offset higher costs in other ways, such as increasing sales of non-taxed drinks.

The federal government would incur some costs in the implementation and ongoing administration of the tax, but these are expected to be small, because existing tax infrastructure could be leveraged.<sup>110</sup>

A tiered tax would raise less revenue than a sugar content tax, because the latter taxes drinks with less than 8 grams of sugar more intensely. But the aim of our proposed tax is to improve health, rather than raise revenue. On this measure, we expect that the tiered tax would be more effective, because it provides people with an untaxed option, which may give them a stronger incentive to switch products.

Where possible, we used estimates for variables that are grounded in the literature. Due to a lack of available data on trends, we used the latest available data for several variables (including consumption volumes, the distribution of volumes across tiers, and population) and did not apply growth rates.

We recommend the federal Treasury or Parliamentary Budget Office conduct more detailed analysis using sales-weighted data that were not available to us.

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110. For example, for the alcohol excise or goods and services tax.



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