MINISTRY OF HEALTH
MANATŪ HAUORA

Health Report number: 20150881
File number: HC30-28-1
Action required by: routine

Childhood Obesity – Preliminary Advice on Sugar Taxes

To: Hon Dr Jonathan Coleman (Minister of Health)

Purpose

This report responds to your request for initial advice on introducing a "sugar tax" applying to sugar and/or products high in sugar.

Key points

- "Sugar taxes", which involve taxing either sugars or specified products containing sugars, potentially have a role in reducing sugar consumption and obesity, and targeted taxes are a key element of strategies to reduce tobacco and alcohol consumption.
- There is not clear international evidence on the effectiveness of sugar taxes. A number of countries have introduced sugar taxes and there have been studies claiming a consequential impact on obesity. However, many of the studies contain serious deficiencies – such as not controlling for factors such as substitution, failure to distinguish between correlation and causation, and not looking at whether any impacts were sustained over time.
- Whether the health impacts of such a tax would be material, or would justify the associated implementation and administration costs, would need to be assessed in relation to a specific tax proposal.
- There are detailed and difficult design issues that would need to be carefully worked through before a decision was made – such as coverage, rate, exemptions, implementation, compliance costs and enforcement. Substantial further work on the options, impacts and costs of any such tax would be required from the Ministry of Health and the Treasury, in conjunction with Customs and/or Inland Revenue, before a proposal could be put before Cabinet.

Contacts:	Paula Martin Group Manager Sector & Services Policy	Information withheld [redacted]
	John Wardrop Principal Policy Analyst	

Childhood Obesity – Preliminary Advice on Sugar Taxes

Recommendations

The Ministry recommends that you:

a) **Note** that "sugar taxes", involving either taxing sugar or specified products containing one or more types of sugar, potentially have a role in reducing sugar consumption and obesity

b) **Note** that the case for a sugar tax to address childhood obesity isn't straightforward, and the international evidence on effectiveness is inconclusive

c) **Note** that a more thorough review of the international literature, and a range of detailed design options, would need to be worked through by agencies before a specific proposal could be put to Cabinet – and that this would require significant resource across several agencies

Teresa Wall
Acting Deputy Director-General
Policy Business Unit

Minister's signature

Date:

Health Report number: 20150881

Childhood Obesity – Preliminary Advice on Sugar Taxes

Summary

1. This Report provides initial advice on the potential for taxes on sugar or specified products containing sugar, to support other measures to reduce childhood obesity. Overall, while such taxes have a potential role to play, significantly more work is required to assess the international literature on the impacts of such taxes and work through the detailed design options before Cabinet could be asked to consider such a tax. Otherwise, there is a sizeable risk that a tax would not achieve its intended objectives, and would also have adverse unintended consequences.

Background

2. Excess energy (calorie/kilojoule) intake is the biggest driver of obesity and added sugar is a material contributor to total energy intake. Imposing a tax on sugar, and in particular sugar-sweetened beverages (a "sugar tax"), has been recommended in several recent reports[1] and is supported by a number of public health commentators, as a way of reducing energy intake. Such a tax has received coverage in domestic and international media.

3. Targeted taxes have been successfully used as part of a range of measures to reduce consumption of substances such as alcohol and tobacco. The rationale advanced for a sugar tax is relatively straightforward:
   - excess consumption of sugar has adverse health consequences, contributing to childhood obesity by raising energy intake (and also contributing to poor oral health)
   - basic economic theory holds that, for most goods, the quantity consumed will fall as price increases – so taxing sugar and/or products containing sugar should drive up their price and reduce consumption
   - by changing relative prices, it should also lead people to substitute away from the taxed products towards the untaxed healthier alternatives.

4. Sugar sweetened beverages are represented as being a particular concern because:
   - the main ingredients are sugar and water and they are cheap, energy-dense, and nutrient poor
   - serving sizes and per capita consumption levels have tended to increase, and they now comprise a significant source of sugar consumption and energy intake
   - they have been associated with a higher risk of weight gain compared to similarly energy-dense solid foods, partly because they do not make a person feel full. Evidence indicates a correlation between habitual excess consumption, type 2 diabetes, and weight gain. A large study of European adults showed that there was a 22 percent increase in diabetes incidence associated with habitual consumption of one daily serving of a sugar-sweetened beverage.
   - The 2002 National Children's Nutrition Survey found that sugar-sweetened beverages contribute 26 percent of total sugar intake to the diets of New Zealand children, and 17 percent of total sugar intake to the diets of adults. Moreover, 29 percent percent of children consumed 4 or more sugar-sweetened beverages per week, and this was markedly higher for boys (33 percent compared to 24 percent for girls), Pacific (49 percent) and Māori (39 percent) children. Additional analysis of the data indicates that children who drank more than one sugar-sweetened beverage per day had a significantly higher Body Mass Index than children who drank less than one per week.

---

[1] For example, the 2014 Auckland University report on Benchmarking Food Environments, and the 2015 Interim Report of the World Health Organization Interim Commission on Ending Childhood Obesity both recommend consideration is given to fiscal measures such as a sugar tax.

Comment

5. On the face of it there appears to be a good case for imposing a sugar tax. However, our preliminary consideration of the issue and review of the international literature indicates that the issue is complex. Key considerations include:

   - **Sugar is not like tobacco.** Taxes alongside other interventions have been an important driver of reduced smoking rates. However, tobacco is a product that is easily able to be defined, and consuming it in any form in any quantity is unhealthy. By contrast, sugar exists in a number of forms (eg, glucose, sucrose, fructose), is both added to foods and naturally occurs in a range of foods (notably fresh fruit), and consuming it in modest amounts is not problematic. Furthermore, while a tobacco consumer essentially only has the choice about whether to change their tobacco consumption when faced with a price rise, a consumer of products such as sugar-sweetened beverages may have a wider range of choices – such as switching to other beverage options (eg, lower-quality sugar-sweetened beverages drinks, fruit juices, flavoured milks) that may also contain a lot of sugar and kilojoules.
   - **Evidence is unclear.** While theoretical models show that a sugar tax should lead to reduced consumption and have a consequential effect on body weight, the evidence on the actual impact of such taxes is less clear:
     - While a number of studies have claimed[2] that such taxes can have an impact on obesity, the studies we have reviewed are not conclusive and many contain material shortcomings – including being conducted over short periods, not controlling for behavioural effects such as substitution towards cheaper but still energy-dense products, failure to distinguish between correlation and causality, and not attempting to disentangle the tax impact from other factors that might impact consumption (eg, income and employment levels).
     - McKinsey Global Institute recently reviewed the international evidence on the effectiveness of different intervention types in addressing obesity. Compared to other intervention types, a 10% tax on high fat/sugar products was found to be one of the least effective interventions in terms of its total impact on population health, but was moderately cost effective for the impact it did have.
     - We commissioned Technical advice from Professors Nick Wilson and Tony Blakely at Otago University. They are generally supportive of fiscal measures to improve diets and consider that "the conditions are very likely to be sufficient for a 20% tax on sugar-sweetened beverages". They also recommend that further research is undertaken.
   - **Design decisions are complex.** There are a number of questions that need to be worked through when designing a tax, including:
     - which products (eg, sugar sweetened beverages, fruit juices, flavoured milks, drink concentrates, drink powders, honey, dried fruit, jams) are taxed or exempt, and on what basis (eg, is it based on total sugar content or just on the amount of added sugars)?
     - which type(s) of sugars should attract the tax (eg, glucose, sucrose, fructose, maltose, lactose etc.), and should the tax be on total sugar content or only added sugar?
     - at what level the tax is set – and how to balance considerations such as the rate of tax needed to achieve desired behavioural change against impacts on food affordability?

[2] One of the more frequently cited cases is Mexico, which introduced a one peso per litre tax (approximately nine cents) on fizzy drinks ("sodas") and other sugary drinks on 1 January 2014. A recent study by the National Bureau of Economic Research (Working paper 21197) found "suggestive evidence" that the tax raised the price of sodas, which was associated with a decline in consumption of around 10 percent in taxed beverages and a rise in consumption of untaxed beverages of around 7 percent. However, this study did not consider whether there was any impact on obesity, and notes a number of caveats such as not looking at whether initial impacts persisted. Other commentaries have suggested that the initial effect may not be being sustained, and that sales data may be overstating the actual impact as some Mexicans in the north are shopping across the United States border.

- o where in the supply chain should the tax be levied (eg, on manufacturers, importers, or at point of sale)?
- o should the tax be set at a specific amount per gram, and if so should this differ for different sugar types, or is *ad valorem* (ie, a percentage of sale price)?
- o what exemptions, if any, apply (eg, fruit juices, powdered drink mixes, or flavoured milks)?
- o the systems that are needed (and what will they cost) to collect the tax, as well as to monitor and enforce compliance?
- o how can legislation robustly define the types of product that attract or are exempt from the tax, in a way that is robust and does not result in unintended consequences or protracted court litigation?
- o are there any other complicating factors (eg, is a proposed tax design consistent with existing trade agreements)?

These decisions will have a material impact on whether the tax affects sugar consumption or obesity, whether there are any unintended consequences, whether the tax is straightforward and how cost-effective the tax is to implement, collect and enforce. For example, the United Kingdom Government has had to deal with a number of court cases around definitions and boundary issues as a consequence of having different VAT rates for different categories of food.

- **Risk of unintended consequences.** There is a material risk of unintended consequences if design options are not carefully worked through. For instance, if a tax applied only to sugar-sweetened beverages then the impact on sugar and energy consumption could partly or wholly be negated if it caused people to just switch lower quality equivalents, fruit juices and flavoured milks – or, in the case of adults, alcoholic drinks. Moreover, if a tax was levied as a percentage of sale price (ie, *ad valorem*) it could lead people to substitute towards cheaper off-brand options that are actually higher in sugar than the beverage they were previously consuming.
- **Acceptability.** To be sustainable a tax must be broadly acceptable. For example, Denmark introduced a tax on saturated fat in October 2011. However, it was very unpopular because of its impact on food bills and perceived impact on employment, and was scrapped 15 months later. While it did appear to achieve a statistically significant decrease in butter purchases – it was difficult to confidently assess this as it was in place for too short a period, and there are a number of confounding factors (eg, stockpiling before the tax was introduced, and the ease of cross-border shopping in the European Union).
- **Revenue would be raised**. A sugar tax would also raise revenue, which could be used to fund other aspects of a childhood obesity package. However, the net revenue raised would be dependent on the level at which it is set, the range of products that it covered, and the cost of administering and collecting the tax. If it was set at a low level, narrowly targeted and/or required a large number of businesses to comply, then it is possible that much of the revenue raised would be consumed by implementation and administration costs.

Conclusion

6. A properly constructed sugar tax, as part of a range of interventions, has potential to contribute to reducing sugar consumption and childhood obesity. However, our initial review of the international literature on the actual impact of such taxes has found that the evidence base is limited, and there have been a number of cases where poor design has undercut the intended impact.
7. Given the complexity of this issue, and the wide range of design and implementation issues that would need significant further work before such a tax could be implemented, we do not recommend proceeding with a sugar tax immediately.
8. If you wished to progress such a tax further, it would be appropriate seek the agreement of the Minister of Finance to commission the detailed work necessary to develop a proposal that could be considered by Cabinet. This would need to involve advice being jointly prepared by the Ministry of

Health and the Treasury, in conjunction with the agency that would have to implement and collect the tax (ie, Customs and/or Inland Revenue). We anticipate that such a piece of work would require a significant commitment of resource across agencies, and would need to include:

- a more detailed review of the international literature on the experience with such taxes – including design, impact, and unintended consequences
- working through the design options, and assessing the trade-offs involved
- preparing specific detailed advice for yourself and the Minister of Finance, and potentially also the Ministers of Revenue and Customs.

END.