

# Obesity one step further towards tackling obesity epidemic

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Obesity is a prevalent and challenging condition affecting more and more people nowadays. In 2015 in the UK, 58% of women, 68% of men and 30% of children were overweight or obese (NHS Digital 2017, British Heart Foundation 2015). In the past few years, there has been growing support for reducing the amount of sugar contained in our diets. Free sugars are defined as sugars “ added to food or those naturally present in honey, syrups and unsweetened fruit juices, but exclude lactose in milk and milk products” and their intake should be limited to 5% of daily dietary energy intake according to Scientific Advisory Committee on Nutrition (SACN) (Gov. uk, 2016a). Overconsumption of sugar has negative health effects such as weight gain from excessive calorie intake, increased risk of type 2 diabetes, certain cancers and tooth decay (Gov.

uk, 2014). National Diet and Nutrition Survey (NDNS) results showed that the majority of UK population exceeds the recommended free sugar intake of 30g per day with sugar-sweetened beverages (SSBs) being among the main contributors to this, especially for children and teenagers who consume an average amount of up to 212g/day (Gov. uk, 2016b). SSBs contain a high number of calories yet they lack nutritional value and their liquid form does not maintain satiety for long (Vargas-Garcia et al., 2015) which is why SACN recommends that their consumption should be minimised (Gov. uk, 2014). While it has both advantages and disadvantages, a levy on sugary drinks along with other measures such as marketing restrictions and product reformulation might be one step further towards tackling obesity epidemic (British Heart Foundation, 2015).

There is strong evidence demonstrating that one of the major health outcomes associated with high calorie and high sugar intake diets is weight gain. A double-blind randomised control trial conducted by de Ruyter et al. (2012) showed sugar-free beverages to reduce body fat gain in children aged 4-11 years compared to SSBs. The findings were supported by Malik et al. (2013) who reported a positive association between SSBs consumption and weight gain and obesity both in children and adults.

A systematic review led by Woodward-Lopez et al. (2010) concluded that SSBs consumption contributed significantly to obesity increase in the US population. Additionally, SSBs have a high glycaemic index associated with postprandial hyperglycaemia and primary hyperinsulinemia and their high fructose level has further implications for increasing visceral fat deposits and liver fat synthesis (Popkin et al.

, 2012). A meta-analysis concluded that the consumption of 1-2 daily servings of SSBs increased the risk of developing type 2 diabetes by 26% (Malik et al., 2010). Furthermore, the findings of a prospective study of Thai adults suggested that a high SSBs intake is linked to increased chances of diabetes in women (Papier et al., 2017). It has also been suggested that such drinks can modify and increase preference for sugary foods (Cassady et al. 2012) by stimulating dopamine release which has a rewarding effect and leaves the consumer wanting for more (Cph. org.

uk, 2013). Several limitations of the studies were: lack of intake for non-carbonated sweetened beverages, self-diagnosis of diabetes, self-report

of beverages consumption, confounding diet and lifestyle factors, heterogeneity etc. Price is a major factor contributing to food choice which is why in general people coming from lower socio-economic backgrounds display a high tendency towards consuming SSBs such as soda, fruit drinks and juices. This can be further explained by the low cost of such beverages which has remained constant throughout time irrespective of the inflation rates, which made them more affordable compared to healthier foods which became more expensive (Cph.

org. uk, 2013). Gibson and Shirreffs (2013) noted that soft drinks consumption was the highest among young adults with an average intake of 140g/day for women and 216g/day for men respectively, as well as among adolescents for whom SSBs accounted for 14% of total energy intake as documented by Ng et al. (2011).

While the latest evidence showed that consumption of SSBs declined in children aged 4-10 years from 130g to 100g per day, the recommendations are still exceeded across all age groups (Gov. uk, 2016b). In the UK, according to the Family Food Survey 2015 (Gov. uk, 2017b) there has been a 6.3% decrease on soft drinks purchased between 2012 and 2015. Yet, there is still a discrepancy between higher and lower household incomes with people coming from the latter category including more free sugars in their diet.

From a social and cultural point of view, evening is regarded as "being the time for eating and drinking" which is why drinks are consumed

mainly during this period (Gibson and Shirreffs, 2013). Furthermore, research suggested that lacking food education can promote obesity (Kalavana et al., 2010) and that parents play a crucial role in the development of children's food behaviours which are established early in life and remain for the long term (Jimenez-Cruz et al.

, 2010). The scientific evidence considered in the essay so far points towards the fact that overconsumption of SSBs is linked to excessive sugar intake which promotes obesity and type 2 diabetes. Therefore, a sugar tax would seem a sensible option to improve diet and health, but further implications need to be taken into account. On the one hand, it would benefit the health system by discouraging buying such beverages, thus reducing obesity rates and costs for treating patients, but on the other hand it would add pressure to the food industry. One reason why such a levy would be beneficial is because it is applicable to a non-essential food group and it would focus on the major source of free sugars in children's and adults' diet (Cph. org.

uk, 2013). The effectiveness of the levy can be analysed from countries such as Denmark, USA, France, Ireland and Mexico which have implemented such taxation. For example in Mexico, a rise in healthier drinks such as water has been observed compared to previous year after an introduction of 10% per litre SSBs tax in 2014 (IBT, 2015).

Contrary to Mexico, however, the 5% soft drinks tax in the USA was not effective on reducing obesity rates and in response, the food industry

spent 70\$ million on lobbying campaigns against soda taxes (Sustain, 2013). The results of a comparative risk assessment modelling study conducted by University of Oxford estimated a 1.3% reduction (180,000 people) for obesity and 0.9% reduction (285,000 people) for those overweight based on a 20% tax on SSBs in the UK (Briggs et al.

, 2013). Statistics show that currently in the UK there is a difference of 20 years spent in good health between individuals coming from the most deprived and least deprived areas (Gov. uk, 2017a). According to Mytton et al.

(2012) "health related food taxes are regressive" which means that poor people end up paying more from their income compared to those with money, yet their health benefits are progressive and can further lead to diminishing inequalities. A study conducted at University of Oxford revealed that a 20% tax on SSBs would prove most effective for young people and its low level would minimally impact across different income groups (Briggs et al., 2013). Given the fact that those coming from lower socio-economic backgrounds consume more SSBs they are affected more by the price fluctuations and are thus more likely to benefit from a positive change in their diet (Powell and Chaloupka, 2009). In order to help with the regressive aspect of the levy, Cornelsen and Carreido (2015) proposed making healthier foods more affordable along with an expansion of the Healthy Start programme which proved effective at increasing fruit and vegetables consumption. Another argument in favour of the tax would be related to the role parents play in shaping children's eating behaviours.

Changing low-income parents' food behaviour by preventing them from buying SSBs due to economic reasons could further have positive implications. For instance, this would enable a better parental control of the child's diet by limiting the consumption of sugary drinks as a reward (van der Horst et al., 2013). Finkelstein et al.

(2010) recognised the positive contribution such taxes might have on weight outcome for middle income families and suggested that the revenue generated from them to be reinvested in programs for prevention of obesity. To sum up, overconsumption of SSBs is linked to negative health effects and there is strong evidence supporting the benefits of limiting such beverages. Keeping in mind the price importance when purchasing a product, I would say that a sugar levy on sugary soft drinks could lead to a reduction in obesity and type 2 diabetes rates, but not entirely on its own. Changing eating behaviours and educating individuals towards a healthier lifestyle is a lengthy and complex process. The fact that the last few years in the UK marked a reduction in consumption of SSBs should be considered as a good sign and people should be further encouraged to substitute them with healthier alternatives. The Government and health organisations should come with policy interventions to accompany and increase the effectiveness of the tax. As for the health inequalities, the benefits the lower socio-economic groups would gain from this definitely outweigh the disadvantages.

Based on the evidence from other countries which have already implemented such taxes, a 20% levy seems a reasonable level to begin with. This could be at first temporarily trialled in order to allow the food industry to gradually

adjust to the change. Additionally, it should be accompanied by food reformulations to reduce the amount of free sugars and more regulations on children marketing strategies for foods and drinks with a high sugar content (British Heart Foundation, 2015).