Sugar tax and obesity

Précis:
A report from two separate workshops on the merits or otherwise of imposing a so-called ‘sugar tax’ as a response to rising levels of obesity, concluding with a commentary.

Introduction
The UCD Institute of Food and Health, in conjunction with the UCD Geary Institute, hosted a workshop on June 8, 2012, to explore whether or not fiscal interventions, such as the imposition of fat and sugar taxes, will in fact impact on public health and, specifically, obesity. The workshop consisted of four presentations by UCD experts on food intake and obesity and the economic aspects of a ‘sugar’ or ‘fat’ tax. There was a general discussion on the merits or otherwise of introducing such a tax and it was chaired by Professor Cecily Kelliher of the School of Public Health in UCD.

The Health Impact Assessment workshop was carried out at the Department of Health, Hawkins Street, Dublin, on June 12, 2012. Minister James Reilly introduced the session and stated that: “This is a positive first step in the battle against obesity”. There were participants from the food and drinks industry, food and health, public health and academia, and the meeting was chaired by Dr Donal O’Shea, Chairperson of the Obesity Task Force.

UCD – Fat and sugar taxes: will they solve the problem?
This seminar consisted of four presentations and a general discussion. These can be viewed at http://www.ucd.ie/foodandhealth/seminarseries/fatsugartaxes/:
1. Obesity and food patterns in Ireland (Dr Anne Nugent).
2. The economics of fat taxes (Dr Kevin Denny).
3. Obesity: down a road less travelled (Professor Mike Gibney).
4. The distributional impact of a ‘fat’ tax (Professor David Madden).

Obesity and food patterns in Ireland
Dr Anne Nugent gave a detailed analysis of the national trends and current levels of food intake with a specific focus on sugars and fats. The main finding regarding sugar intake is that, currently, it constitutes 14.3% of our energy intake; this also includes fruit sugars as non-milk extrinsic sugar (NMES). The frequency of sugar intake per day (national average) has reduced from 4.2x/day in 2001 to 3.3x/day in 2011.

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1. Obesity and food patterns in Ireland (Dr Anne Nugent).
While obesity rates have undoubtedly increased in Ireland and it is a significant public health problem, it is also an extremely complex phenomenon with a multi-factorial aetiology. There appears to be a levelling off of the rate of increase in obesity compared to the rapid rise between 1990 and 2001. Half of Irish adult males are overweight, while the comparable figure for females is just under one-third. The respective figures for obesity levels are one-quarter and one-fifth. Neither sugar nor fat intake was correlated with indices of obesity such as BMI or waist circumference measurement. Even in the highest quartile of sugar (or fat) intake, there was no difference in BMI or waist circumference. Consequently, based on the Irish national consumption data for these foods, it cannot be shown that an increased consumption of SSBs can be correlated with an increase in obesity.

**The economics of fat taxes**

Dr Kevin Denny of the UCD Geary Institute gave an overview of some of the wider issues that economists would take into account with regard to taxes on foods or nutrients. The following summary is extracted from Mike Gibney’s food blog: http://gibneyonfood.blogspot.ie/2012/06/sugar-taxes-revisited-economic-and.html. Kevin pointed out that economists start with the view that the individual knows what is best for them personally. However, for some groups and in certain instances, this may not be the case. The information upon which a decision is to be made may be poorly available, too complex, or time and emotion may defer an informed decision. Policy decisions in such instances therefore start with education and then move to regulation of some form, which might include taxes. Taxes that are designed to introduce enhanced social behaviour are referred to as Pigouvian taxes and it could be argued that food taxes fall into this category if we think that people’s consumption of food is not socially optimal for some reason. But one needs to be clear about who the genuine target for taxation in the first instance: How much to choose to eat more than others? People do not “choose to become obese”.

Kevin explained the sequence of steps the economist would look at, always assuming that nutritionists really did have a genuine target for taxation in the first instance: How much to tax? How does that affect price given that taxes are often not passed on in full to consumers? In turn, how does that influence consumption of the foods concerned? How does that influence BMI and, of course, eventually health costs? He went on to cite the work of Powell and Chaloupka, who conclude that: “The limited existing evidence suggests that small taxes or subsidies are not likely to produce significant changes in BMI or obesity prevalence, but that nontrivial pricing interventions may have some measurable effects on Americans’ weight outcomes, particularly for children and adolescents, low-SES populations, and those most at risk for overweight. Additional research is needed to be able to draw strong policy conclusions regarding the effectiveness of fiscal pricing interventions aimed at reducing obesity”. In other words minor taxes will have little effect and that effect would only be seen with quite considerable taxes.

**Obesity: down a road less travelled**

Professor Mike Gibney gave an overview of the epidemiology and genetics of obesity and the importance of physical activity, particularly in the context of the built environment. He showed the data in the USA in relation to the growing obesity problem and associated chronic disease conditions but also explained that obesity has always been a health issue even for early societies. He suggested that obesity comes in waves and that there is some evidence that the current “Tsunami of Lard” is no longer accelerating at the same rate. According to Professor Gibney: “Just under half of Irish adult males are overweight, while the comparable figure for females is just under one-third. The respective figures for obesity levels are one-quarter and one-fifth. So, we have a problem, as have most developed countries”.

He also suggested that an excess of calorie intake over physical activity expenditure is an incorrectly simplistic view of how people become overweight or obese. We all live in an “obesogenic environment”, but the susceptibility to weight gain is strongly genetically determined and he elaborated on this using data from identical twin studies. He commented on the particularly poor quality, methodology and bias of peer-reviewed articles on SSB and obesity published between 2001 and 2011. Systematic reviews of the SSB health outcomes issue are needed to better inform policy.

No one particular pattern of food intake has been associated with obesity (unlike, for example, high frequency sugar intake and dental caries). Furthermore, it is important to ask: why do some people choose to eat more than others? People do not “choose to become obese”.

“Most of the studies linking SSBs and obesity are based on observational studies, examples of which are in the data presented by Anne Nugent. These data do not prove cause and effect. To do so, we need to construct very large multi-centre studies of sufficient duration to see any true effect. The Women’s Health Initiative on dietary fat, the DASH study on diet and hypertension, the DART and GISSI studies on fish oil, and the MRC trial on folic acid are all examples of these large, internationally approved intervention studies specifically designed to test the true cause and effect hypothesis. As regards reducing or increasing intakes of SSBs, no such study exists. In the EU, we demand multiple human intervention trials to sustain health claims on foods and clearly that bar is too high for public health nutrition policy.”
The distributional impact of a ‘fat’ tax

Professor David Madden of the School of Economics used data from the nationally representative Household Budget Survey to examine the impact of possible fat taxes on poor households. The following summary of this presentation is extracted from Mike Gibney’s food blog: http://gibneyonfood.blogspot.ie/2012/06/sugar-taxes-revisited-economic-and.html.

Professor Madden’s results showed that pretty much any food-based fat tax will have a disproportionate effect on poor households, reflecting the general tendency across all countries for poor households to devote a higher fraction of their budget to food. However, a revenue neutral tax/subsidy package, with higher taxes on some foods combined with lower taxes on other foods, would be neutral in its poverty impact, and could even be mildly beneficial to poor households. In terms of a tax on SSBs, the impact of a 10% tax on poor households would be relatively modest, given that SSBs are a relatively small fraction of the budgets of poor households. Depending upon the ability of the Government to accurately target poor households to compensate them for such a tax, the cost of compensation in 2005 prices would most likely be less than €10m. However, this takes no account of the loss in welfare borne by non-poor households from such a tax.

Department of Health: Health Impact Assessment (HIA) on the proposed introduction of a tax on sugar-sweetened beverages

The HIA workshop consisted of a large group invited from various aspects of healthcare, economics, and the food and drinks industry. Professor Donal O’Shea introduced the background to the HIA and his role as an endocrinologist in treating what he described as “the results of obesity”. Following Minister Reilly’s speech, attendees were advised that small group discussions would take place and there would be a final summation with some feedback from each of the appointed chairs of these group discussions. There was neither written documentation provided nor a definition of which drinks/beverages would be subjected to a tax. SSBs or ‘soft drinks’ were mentioned in discussion but the parameters of the proposed tax were not defined. Approximately 40 participants were split into four groups and a series of questions on the topic were discussed openly. There were many and varied views on the potential effectiveness of a sugar tax and differences of opinion on the level of evidence for a causal mechanism and any impact it would have on the obesity problem in Ireland. The workshop concluded with a summary by Eoin Metcalfe from the Institute of Public Health. Participants were advised that they would be informed of the next stages of the introduction of a sugar tax by the Minister.

The main points outlined in a summary of the discussions were:

- why can’t a sugar tax be ring fenced for a health/obesity/nutrition programme?
- would a sugar tax have a “measurable impact” on obesity?
- what are the other components of the anti-obesity strategy?
- how will the greater tax burden of a sugar tax on lower income families be addressed?

- division of opinion on the “level of evidence” relating to intake of SSBs and obesity.

Commentary following participation in both workshops

Although the sugar tax was proposed by the Obesity Task Force and Department of Health as only one aspect of addressing the obesity problem, it is difficult to see how it could have any significant impact on average dietary energy intake and thus on obesity. The average population dietary energy intake from SSBs is 1.2%, and for regular consumers (40% of the population), SSBs constitute 3.6% of energy intake. It seems hopeful, at best, to suggest that the introduction of a sugar tax will result in a measurable reduction in obesity and the appropriate high-quality randomised controlled trial has not been carried out to support this measure. Obesity is a complex phenomenon with a multi-factorial aetiology, and in the opinion of this participant the proposed ‘solution’ is too simplistic and does not really address the important issues. Pereira has suggested that: “Some have drawn analogies between the fight against the food industry and the fight against the tobacco industry. However, the complexity of our food supply and of dietary intake behaviour, and how diet relates to other behaviours, makes the acquisition of clear and consistent scientific data on the topic of specific dietary factors and obesity risk especially elusive. Only more high-quality randomised trials on this topic will provide the necessary data to properly evaluate the possible link between changes in SSB intake and obesity risk.” Marantz warns against the urge to implement public health nutrition policy guidelines in the absence of evidence: “A ‘risk factor’ is not necessarily a cause. Inaction is sometimes the best option. Although emergency situations may demand action even in the setting of inconclusive evidence, dietary guidelines are not an emergency. When the evidence is inconclusive … why issue guidelines?” However, as SSBs are micronutrient poor, recommendations to limit their intake would generally appear to be important for the promotion of good nutrition. A recent review suggested that: “There are few established adverse consequences of high intakes of digestible carbohydrate for young children … However, overall, there is sufficient evidence for public health strategies to discourage over-consumption of sugary drinks as part of a healthy lifestyle”.

From a dental perspective this would seem to be logical also, although there are many other factors that will influence the development of dental caries. Gibson and Williams analysed data for children from the British National Diet and Nutrition Survey and found an association between the percentage of energy intake from NMES and dental caries only in children who brushed their teeth less than twice a day, suggesting that oral hygiene was more important than sugars consumption. While positive relationships have been found for both fat and protein intake and obesity, there appears to be little evidence of a positive relationship between sugars (or digestible dietary carbohydrate in general) in relation to body weight, with many studies showing an inverse relationship between the incidences of obesity and increased sugars intake. The joint FAO and WHO report on carbohydrates
stated that: “There is no direct evidence to implicate that sugar has a role in the aetiology of obesity, based on data derived from studies in affluent societies”. The FAO/WHO report11 of 2007 updated some of the key issues related to carbohydrates, and based on this and previous FAO/WHO reports, the European Food Safety Authority (EFSA) panel has recently proposed 45-60% energy as the reference intake range for carbohydrates and 10% energy intake from free sugars.12 The EFSA panel also suggested that as sucrose is the most cariogenic sugar, its consumption should be minimised in children, but there is “no scientific evidence to establish a specific dietary intake value for sucrose and other free sugars”. The obvious possibility of a substitution with either lower cost SSB products or ‘diet’ beverage products was mentioned at both workshops. The point was made by several participants of the well established ‘see-saw’ relationship between sugar and fat intake.8,13 When sugar intake in the diet decreases, fat intake tends to increase and vice versa. In our group discussion it was suggested that while fruit juices can contribute valuable nutrients, a switch to consuming fruit juices rather than soft drinks or SSBs would not necessarily contribute to a reduction in energy intake. Furthermore, more frequent consumption of fruit juice could contribute the same cariogenic and dental erosion risks as SSBs, while a switch to diet drinks alone would still contribute to dental erosion risk.

In conclusion, there appears to be a political will to do something about the obesity problem. Unfortunately, from this participant’s perspective, this does not seem to be matched with a desire to do so with an evidence-based approach. It was suggested by many of the individuals involved in the HIA that “we can’t afford to wait for the evidence”. One proponent at the UCD seminar asked: “Why not start with soft drinks and see if it works?” The contradictions in our public health nutrition policy are best summarised by Professor Mike Gibney, Director of UCD’s Institute of Food and Health: “So, in summary we have a proposal to tax SSBs, which contribute 0% of daily calories among the 60% of the population who don’t consume them, and which contribute a mere 3.6% to the caloric intake among consumers of these products. In doing so, we ignore the obesity issues of the 60% of non-consumers and, among consumers, we tax those who are lean and those with excess body fat. And we do all this with zero data from internationally acceptable randomised controlled intervention studies on the effects of SSBs on medium-term body weight regulation. Whereas we insist that such studies govern health claims as regulated by the European Food Safety Authority, that doesn’t seem to apply to public health nutrition policy. Moreover, we do so knowing that food taxes that are small will be ineffective and to be successful they must be significant. And of course we do this knowing that it will hit the poorest in society with the greatest financial burden unless we find some way to subsidise a healthy food eaten in significant quantities by poorer households. Simple, isn’t it?”

References