

## Obesity and Cancer – Key Issues for Scotland

### 1 Purpose of the paper

1.1 This paper is for information and discussion.

1.2 The Board is asked to :

- **Note** the information provided

## **Obesity & Cancer – Key Issues for Scotland**

**Board paper for Food Standards Scotland 17 May 2017**

**Professor Linda Bauld**

**Cancer Prevention Champion, Cancer Research UK**

### **Executive Summary**

- Obesity is the biggest preventable cause of cancer after smoking, yet public awareness is low. Only one-quarter of Scottish adults recall obesity as a risk factor for cancer.
- Cancer Research UK commends Food Standards Scotland for their assessment of obesity and leadership in promoting evidence-based policy interventions. We agree with the assessment that the Scottish diet needs to change, and support the wide-ranging recommendations put forward by the Food Standards Scotland board in January 2016.
- We are also keen to support and collaborate with Food Standards Scotland to challenge the Scottish Government to develop strong policy in the strategy.
- We need to see a brave and ambitious Scottish Government Diet and Obesity Strategy. We think the Scottish Government could make a substantial impact on levels of obesity by taking action to restrict price promotions on unhealthy food.
- We welcome continued support from the Scottish Government for restrictions to unhealthy food marketing on TV. We believe it is important for the Scottish Government to make a statement in their strategy on the need for restrictions from Westminster.

### **Definitions**

- For the purposes of this document, we define ‘junk food’ or ‘unhealthy food’ as foods that would be defined as ‘less healthy’ using the Department of Health’s nutrient profiling model. We also encourage the future use of the revised nutrient profiling model, which incorporates the guidance on carbohydrates from the Scientific Advisory Committee on Nutrition and the forthcoming guidance on saturated fat.

## Full Paper

### About Cancer Research UK

1. Cancer Research UK is the world's leading cancer charity dedicated to saving lives through research. Every year around 300,000 people are diagnosed with cancer in the UK and more than 150,000 people die from cancer. The charity's pioneering work has been at the heart of the progress that has already seen survival rates in the UK double in the last forty years. As the largest fundraising charity in the UK, we support research into all aspects of cancer through the work of over 3,500 scientists, doctors and nurses. In 2015/16, we spent £404 million on research. We receive no funding from the Government for our research, and of every £1 donated, 80p was available for investment in our core purpose.
2. In 2014, around 31,900 people in Scotland were diagnosed with cancer. Last year, Cancer Research UK spent over £33m in Scotland, funding centres in Glasgow and Edinburgh as well as all types of research in Dundee, Aberdeen, Stirling, and Inverness. We hold the Secretariat for the Scottish Parliament's Cross Party Group on Cancer, and its annual Scottish Cancer Conference.

### Obesity and cancer

3. More than four in ten cases of cancer in the UK are preventable, and obesity is the single biggest preventable cause of cancer after smoking in the UK.<sup>1</sup> Yet public awareness is low: only a quarter of Scottish adults are aware that being overweight could cause cancer.<sup>2</sup>
4. Obesity is linked to thirteen different types of cancer, including two of the most common – bowel and breast – and two of the hardest to treat – pancreatic and oesophageal. Our research shows that if current trends continue, rising levels of overweight and obesity could result in 670,000 avoidable cases of cancer across the UK over the next 20 years.<sup>3</sup> For non-smokers, avoiding weight gain is the best approach to preventing cancer. A focus on children's obesity is key, as obese children are five times more likely to become obese adults, placing them at risk of preventable cancers.<sup>4</sup>
5. So far, research has identified three leading theories about how obesity could cause cancer.<sup>5</sup> Firstly, excess fat can cause levels of insulin and other growth factors to rise, which can also tell cells to divide more rapidly. Secondly, when specialised immune cells called macrophages are released to remove dead and dying fat cells in the body, they release a cocktail of chemicals called cytokines which can lead to chronic inflammation. The process of chronic

inflammation also promotes cell division. Thirdly, after the menopause, oestrogen made by fat cells can make cells multiply faster in the breasts and womb, increasing the risk of abnormal mutation.

6. While eating a healthy diet helps keep a healthy weight, there are also notable dietary risk factors for cancer independent of bodyweight. Eating a diet high in processed and red meat can increase the risk of bowel cancer, and is estimated to be linked to around a quarter of bowel cancers in men and a sixth in women.<sup>6 7</sup> By contrast, high fibre consumption can have a protective influence against bowel cancer, with eating 10g of fibre per day linked to around a 10% reduced risk of bowel cancer.<sup>8</sup> Finally, fruit and vegetable consumption has been associated with a decreased risk of certain mouth, upper throat, larynx and lung cancers.<sup>9 10 11 12</sup> However, as the evidence base has developed, we have seen a weakening of other direct links to cancer such as total salt, dietary fat and fruit and vegetables linked to other cancer types. At the same time, the link between obesity and cancer has strengthened. This means that, in line with NICE guidelines, we are now including the recommendation to cut down on high calorie foods and drinks that can promote weight gain, like fast food and sugary drinks, in our top line dietary messages.<sup>13</sup>

## **Obesity in Scotland**

7. Scotland's levels of overweight and obesity are the worst in the UK, and among the worst in OECD countries.<sup>14</sup> Two-thirds of adults and over one-quarter of children in Scotland are overweight or obese.<sup>15</sup> We are concerned by the lack of progress made in improving rates of overweight and obesity in Scotland. It is concerning that none of the Scottish Dietary Goals related to obesity have been met over the past 15 years. In addition, the guideline for free sugar consumption is likely to be further reduced following the Scientific Advisory Committee on Nutrition (SACN) recommendations on carbohydrates, making them even more difficult to achieve.
8. In addition to the health impacts of overweight and obesity, the economic costs in Scotland are huge. They have been estimated at up to £600 million a year to NHS Scotland.<sup>16</sup> Once wider economic impacts of lost economic productivity and absenteeism are accounted for, this estimate increases up to £4.6 billion per year.
9. It is particularly concerning that the causes and consequences of obesity are not borne equitably among the Scottish population. An expert report by the Scottish Public Health Network has identified that Scottish overweight and obesity rates could be negatively correlated with socio-economic status.<sup>17</sup>

The most deprived quintile in Scotland consume the fewest fruit and vegetables, and the highest levels of energy dense foods, sugar, processed meat products, chips, as well as non-diet soft drinks at least once a day.<sup>18 19</sup> On the specific issue of sugar-sweetened beverages (hereafter SSBs), we note that Scottish households spend over a quarter more than other UK nations (£2.60 per week) on soft drinks<sup>20</sup>, and that 45% of children from the most deprived quintile consume non-diet soft drinks on a daily basis compared to 30% from the least deprived quintile.<sup>21</sup>

## **Cancer Research UK's work on obesity in Scotland**

10. Throughout 2016, Cancer Research UK issued a series of press releases to highlight the issue of obesity and cancer in Scotland. These included: a report that found only a quarter of Scottish adults were aware of the links between obesity and cancer<sup>22</sup>; an analysis of the National Diet and Nutrition Survey which found UK teenagers consume the equivalent of a bathtub of SSBs a year<sup>23</sup>; our response to the 'shocking' levels of children's obesity prevalence in the Scottish Health Survey<sup>24</sup>; and an analysis that demonstrated 83,000 children start primary school overweight or obese in Scotland every year<sup>25</sup>.
11. We have also conducted a qualitative research study in England and Scotland with 137 school children aged 9-12<sup>a</sup>. This study found that children are mostly exposed to junk food advertising in the evenings and weekends after 4.30pm, and showed the impacts of marketing on making children hungry, remembering adverts in supermarkets and pestering their parents.<sup>26</sup>
12. In addition to Food Standard Scotland's research in 2015<sup>b</sup>, finding that three in four Scottish adults think obesity is a big problem<sup>27</sup>, additional unpublished polling conducted by Cancer Research UK in December 2016<sup>c</sup> finds four in five (80%) think there is a problem with obesity in Scotland. Furthermore, **the majority of Scottish adults (59%) support restricting price promotions on unhealthy foods, with just 30% opposing, and almost 7 in 10 Scottish adults<sup>d</sup> support banning supermarket promotions of unhealthy foods.** By contrast, only one in five (20%) think the Scottish Government has shown a leadership role in reducing obesity levels in Scotland<sup>e</sup>.

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<sup>a</sup> Focus groups comprised of two primary schools in Scotland (City of Edinburgh and North Lanarkshire) and four primary schools in England (Hertfordshire, Northamptonshire, and two in Oxfordshire).

<sup>b</sup> n~20,000 Scottish adults (16+), conducted throughout 2015.

<sup>c</sup> n=1145 Scottish adults (18+), conducted 2<sup>nd</sup>-6<sup>th</sup> December 2016. Plans to publish are forthcoming.

<sup>d</sup> n=142 Scottish adults in a Great Britain sample, conducted 2<sup>nd</sup>-6<sup>th</sup> December 2016. This statistic was used as the hook for Cancer Research UK's event in the Scottish Parliament.

<sup>e</sup> 20% think the Scottish Government has shown a leadership role in reducing obesity levels in Scotland, 44% think they haven't and 36% don't know.

13. On the 24<sup>th</sup> January 2017 we conducted an event at the Scottish Parliament to raise awareness of the link between obesity and cancer, as well as supporting a members' business debate on obesity and cancer.<sup>28</sup> This received widespread media coverage and engagement among MSPs, including recognition of the link between obesity and cancer from the Minister for Public Health.<sup>29 30 31</sup> We also provided evidence to the Scottish Government Health and Sport Committee's recent inquiry on obesity, which was highlighted in the Committee's letter to the Minister.<sup>32 33</sup>

## **Proposed policies for the Scottish Government's Diet and Obesity Strategy**

### **Price Promotions**

14. We commend Food Standards Scotland for its assessment of obesity and leadership in Scotland for promoting evidence-based policy interventions. We agree that the Scottish diet *'needs to change'*, and support the recommendations put forward by the board in January 2016. While the role of the food industry is important to promote reformulation and healthier products, we note the limited progress made to address levels of obesity during the Scottish Government's 'Route Map Towards Healthy Weight' that placed strong emphasis on voluntary measures with industry.

15. We believe that the Scottish Government's forthcoming diet and obesity strategy offers a new opportunity for effective action to improve the health of the Scottish population. It is critical that the policies adopted in this strategy are evidence-based, and honour the pre-election manifesto commitment made by the current Government to *'reinforce co-ordinated action on the promotion of unhealthy foods'*.<sup>34</sup> Cancer Research UK supports two priority policy areas in the Scottish Government's strategy. These are restrictions on price promotions for unhealthy food, and expressed support for measures in Westminster that restrict unhealthy food marketing on TV before the 9pm watershed.

16. Price promotions have been suggested as one of the strongest marketing factors predicting total energy intake and obesity.<sup>35</sup> Such promotions are used widely to market food to child and young people.<sup>36</sup> Expenditure on such promotions across the UK has been estimated at £55bn a year, yet the McKinsey Global Institute's economic analysis of obesity intervention groups suggests that reducing price promotions is one of the most cost-effective ways to tackle the health harms of obesity.<sup>37 38</sup>

17. In addition, Public Health England (hereafter PHE)'s review of the evidence to reduce sugar consumption acknowledges the problem of price promotions,

finding that they increase the amount of food and drink people buy by around one-fifth (22%), and increase sugar purchased from higher sugar foods and drinks by 6.1%.<sup>39</sup> A survey of sales of 'on-pack' promotions in England (those on the packaging, label or neck of a product) found they feature prominently on breakfast cereals, behind only the category of alcoholic beverages.<sup>40</sup>

18. The impact of price promotions in Scotland has also been analysed. Research with young people in Scotland found that price based promotions and advertising are the most salient forms of marketing to them.<sup>41</sup> Temporary price reductions are dominant across Scotland, with more prominent use of less healthy food and drink categories using 'Y for £X' and multi-buy promotions. We note Food Standards Scotland's research finding that nearly 40% of all calories, 42% of energy derived from fats and saturated fats, and around 53% of regular soft drinks were purchased as a result of price promotions, with a substantial uplift in the purchase of some discretionary food categories, including confectionery and cakes, over the festive period.<sup>42</sup>
19. While political concern has been expressed about the impact of online multi-buy offers on increasing overall sales of consumable goods, we welcome that some supermarkets have noted that price promotions are a problem.<sup>43</sup> In addition, we believe restrictions to price promotions can be smoothly implemented and retailers should not be unduly affected. This is because retailers sell a range of other food products, such as unprocessed or partially processed goods, and other products such as household goods, fuel, cosmetics or textiles, which can be promoted to generate competition.
20. We expect the most effective option for the Scottish Government will be reducing the affordability of unhealthy food. This is because of expected limitations to use promotions to increase the affordability of fresh fruit and vegetables under EU law. If this were achievable, international evidence trialling a three-month 20% price reduction in fruit and vegetables could increase household purchasing by 35% and 15% respectively.<sup>44</sup>
21. **We propose the Scottish Government should act to restrict the use of 'Y for £X' and other multi-buy promotions on food high in sugar, fat and salt across retail outlets in Scotland.** While we note there is ongoing work to define the range of price promotions and techniques used to market junk food, and a workable definition will be necessary to introduce regulation, we have a number of suggestions about how these restrictions could be applied.<sup>36</sup>
22. We believe that the Scottish Government has the legislative scope to bring in the following restrictions. To scope a workable definition, we believe policies

should address promotions run by retailers that are applied at the point of sale, rather than other elements of the supply chain. Our initial recommendation is to prioritise multi-buy discounts, as these promotions are designed to increase the overall bulk volume of unhealthy food purchased. Temporary price discounts should also be considered, but these definitions would need to address all forms of discounting, such as foods that are 'reduced to clear'. In addition, all retail outlets should be considered, to understand how price promotions can be most effective in environments where discount retailers may prefer to offer lower prices than introduce restrictions. Finally, robust monitoring and evaluation of the measure will be required, so we suggest that appropriate industry data will need to be made available for scrutiny by the public health community.

- 23. We believe that Food Standards Scotland can play an important role in encouraging the Scottish Government to introduce restrictions on price promotions. One option is to research ways to reduce the use of other forms of price and in-store promotions for unhealthy foods<sup>f</sup>.** The measure could have a progressive impact, decreasing consumption of unhealthy food products among more deprived consumers who are expected to be more price-sensitive and/or expected to consume more of these products.

## Junk Food Marketing

24. Another significant driver for obesity is the influence of junk food marketing on dietary behaviours. PHE's review of the evidence on sugar consumption finds that '*all forms of marketing consistently influence food preference, choice and purchasing in children*'.<sup>45</sup> The evidence base acknowledges the promotion of food influences children's food intake<sup>46</sup>, their brand<sup>47</sup> and food<sup>48 49</sup> preferences, and consumption behaviours<sup>50 51</sup>. While junk food marketing is not allowed on programmes of particular appeal to children, this does not reflect how children watch TV and are exposed to junk food advertising. Ofcom research shows that implementing restrictions on junk food advertising on TV before the 9pm watershed would reduce the amount of junk food adverts seen by children by more than half compared to the current approach.<sup>52</sup> While restrictions would require change through Ofcom, and direct influence from the UK Government, we believe continued proactive

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<sup>f</sup> An evidence review of the impact of sales promotions by has identified the following techniques used to market food to children: price discounts (e.g. direct price reductions, coupons); extra-product price promotions (e.g. BOGOF); premium promotions (e.g. reduced price gift with purchase); collector promotions (e.g. collect vouchers for price); prize promotions (e.g. prize draws); feature and display promotions (e.g. in-store displays and banners) and sampling promotions (e.g. free samples).<sup>36</sup>



support from the Scottish Government will be vital to achieve regulatory change.

25. **Cancer Research UK welcomes efforts by The Scottish Government to advocate for the introduction of restrictions on junk food advertising on TV before the 9pm watershed across the UK. A commitment by the Scottish Government to pursue these restrictions at the UK level should be made in the diet and obesity strategy.**

### **Soft Drinks Industry Levy**

26. Additional measures could be effective. Excessive consumption of sugars is recognised as a leading source of extra calories and thus a cause of obesity, with a direct correlation between SSB consumption and weight gain, overweight and obesity among children and adults.<sup>53</sup> The soft drinks industry levy is a tried, tested and popular measure to tackle obesity, with ample real-world evidence from other countries and modelling demonstrating its effectiveness.<sup>54 55 56 57 58 59 60</sup> Children in the UK currently consume at least double the maximum recommended amount of free sugar, and sugary drinks are their number one source of sugar. **We propose the Scottish Government should encourage the swift implementation of an effective soft drinks industry levy. Any additional revenue allocated from the Barnett formula in spending linked to the levy should be used for obesity prevention activities, ideally those that focus on changing dietary behaviours.**

### **Reformulation**

27. Finally, reformulating levels of fat, sugar and salt in foods and drinks has been identified as an effective and cost-effective policy to reduce levels of obesity.<sup>61</sup> Food Standards Scotland has previously proposed reformulation targets for a reduction in calories, fats and sugar across nine product categories, with saturated fats, fats and non-milk extrinsic sugars the priorities to reduce calorie intake.<sup>62</sup> PHE have set targets to remove sugar from the top nine sources for children, where they intend to remove 20% of sugar by 2020. This programme is also due to be expanded to include calories and saturated fat, in line with the Scientific Advisory Committee on Nutrition's recommendations. Food Standards Scotland should work closely with PHE to ensure that these programmes benefit the diets of the Scottish public and ensure that programmes with similar aims are run alongside with PHE's reformulation programmes.

## Ineffective Measures

28. By contrast, we note a number of policies are likely to be advocated for as part of the Scottish Government's strategy, but may undermine the overall quality of the approach if they are introduced on their own. A recent Bulletin of the World Health Organisation notes that changes in calorie intake are likely to explain increases in weight, particularly among developed economies.<sup>63</sup> As a result, while important in the overall approach to improving diet and weight prevalence, physical activity policies may be used to avoid other effective mechanisms that improve dietary behaviours.
29. A series of meta-analyses and randomised controlled trials have found that only focusing on physical activity promotion among youth, including in schools, delivers minimal or no improvement in their levels of activity.<sup>64 65 66 67</sup> In addition, increasing physical activity levels alone may not lead to improvements in BMI.<sup>68</sup> A review of the perceived decrease in calorie consumption in the UK by the UK Government's Behavioural Insights Team has found that national surveys typically underestimate true calorific intake. To this end, it notes that *'only an implausibly large reduction in physical activity could explain our weight gain'* and that falling levels of activity *'do not provide a realistic explanation for the change in weight'*.<sup>69</sup> They conclude that *'although attempts to increase physical activity should be part of the policy mix for obesity, they should not act as a distraction from the central importance of reducing calorie consumption.'*
30. While we note the impact that health information campaigns on obesity and dietary factors may bring changes to short-term consumption or attitudes, these interventions on their own are not sufficient to drive long-term behaviour change.<sup>70 71</sup> Investment in health marketing campaigns may not yield significant benefits while substantial barriers that prevent healthy eating remain. Therefore, actions to increase the availability of healthier foods and restrict consumption of unhealthy foods are likely to have more immediate benefits and could be more cost-effective.

## Lessons from alcohol and tobacco policy

31. While obesity is a complex health condition and not linked to a single product, learnings from both tobacco and alcohol policy are valuable. When working to redefine something as complex as the obesogenic environment, there is an important principle to not 'pass the buck' to other sectors that influence bodyweight, but instead promote high impact population level measures that can make incremental gains to change dietary behaviours. Of available policy options, price remains one important lever for the purchase and consumption

of unhealthy foods, with the potential to deliver additional benefit to at-risk groups. Building on the purchase behaviours of the most deprived Scots, pricing policies can also be effective where the consumption of a product may be higher than the population average and/or consumers are more price-sensitive to switch to healthier alternatives. As a result, there are opportunities to shift norms in favour of promoting healthier choices, and utilise pricing strategies and marketing communications as a force for good to promote unhealthy foods.

32. Food and beverage industry actors have an important role to play in reducing levels of obesity, through reformulating their products to offer healthier dietary options. As such, it is not appropriate to make direct comparisons between the motives of the tobacco and food industries. However, industry opposition to certain public health measures can be expected, and we note similar tactics used to challenge the Soft Drinks Industry Levy. Examples of this opposition includes expressing concerns over job losses and economic costs, often without accounting for the benefit to other sectors, such as the dairy industry, that would see an uplift as a result of substitution. Other arguments have ignored or downplayed the additional impacts of a policy leading to increased product reformulation, behaviour change as a result of increased awareness, and the disproportionate impact on populations who consume more of such foods.<sup>72</sup> Opposition through grassroots campaigns, supported by individuals who have historically opposed tobacco control policies, was also observed.<sup>73</sup>
33. An ambitious national target may also support the implementation of evidence-based policy. This has been demonstrated in Scotland, which has shown strong leadership through the plan to meet a ‘tobacco-free’ nation ambition by 2034. By contrast, the Scottish Government as yet has no overarching target for decreasing obesity prevalence, and the relevant targets that do exist – the Scottish Dietary Goals – have consistently failed to be met.
34. There are a number of lessons from experiences with alcohol policy, including action on price promotions. Firstly, there is conflicting evidence on the impact of introducing a ban on multi-buy discounts on alcoholic beverages in Scotland. One study used retail sales data to find a decrease in sales once accounting for trends in England and Wales, while another self-reported evaluation with 22,356 households in Scotland, England and Wales suggests the measure did not reduce short term alcohol purchasing.<sup>74 75</sup> As a result, guidance on the best way to monitor trends in sales will be needed to provide clarity on the impact of the measure. It also justifies the need for a comprehensive approach to address price promotions that cannot be routinely circumvented.

35. One reason proposed for the limited effectiveness of a multi-buy ban on alcohol in Scotland is that deals which were originally multi-buys in England and Wales were run as temporary price reductions in Scotland, enabling the same volume of alcohol to be purchased at a lower price overall. Evaluations and learnings from alcohol policy should be used to inform restrictions to price promotions for unhealthy food. In addition, it also demonstrates that a comprehensive approach that focuses on a range of dietary behaviours will be needed to address obesity.

## Conclusions

36. Obesity is the biggest preventable cause of cancer after smoking. Yet, public awareness is low and only one-quarter of Scottish adults recall obesity as a risk factor for cancer.

37. We see the forthcoming Scottish Government's diet and obesity strategy as a vital opportunity to promote evidence-based policy. We are keen to collaborate and support Food Standards Scotland to challenge the Scottish Government to develop strong policy in the strategy.

38. We see restrictions to price promotions on unhealthy food, and a commitment to continued support for restrictions on unhealthy food marketing on TV from Westminster, as two policy priorities of particular importance for the strategy. By contrast, we do not want to see a reliance on physical activity or voluntary measures without comprehensive mechanisms for monitoring and evaluation in the strategy.

39. For more information relating to this paper, please contact Dan Hunt, Policy Adviser at [daniel.hunt@cancer.org.uk](mailto:daniel.hunt@cancer.org.uk).

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