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DECLARATION OF INTERESTS

4. There are no conflicts of interest to declare.

SUMMARY

5. Wide-ranging research on food and obesity undertaken at the two Imperial College Centres making this submission provides strong evidence that several policy approaches are useful, but no single policy will reverse obesity levels. A multi-pronged strategy, based on cross-government action, is required to make meaningful progress.
6. Facing greater challenges with diet and obesity than many peer countries, the United Kingdom has adopted a wide range of policies, some of which have served as examples for other countries. However, there remains a large scope for further regulation of the food sector, for an improved design, a more effective implementation, and a tighter enforcement of existing policies, and for the introduction of new policies.
7. Our research, combined with other international evidence, supports a focus on the following policy areas and approaches:
    - Strengthening a dual, demand-side and supply-side, policy approach in addressing the determinants of unhealthy diets and obesity.

- Tightening incentives for food reformulation, including the use of mandatory targets, close monitoring, benchmarking and enforcement of standards, regulatory and fiscal incentives.
- Moving beyond taxes on sugar-sweetened beverage (the SDIL) and aligning existing taxes on food to the nutritional quality of products and their environmental impacts.
- Implementing price promotion regulations on foods of poor nutritional quality consistently across the country.
- Increasing protections, particularly aimed at children, around the marketing and promotion of HFSS and ultra-processed foods. This includes strengthening existing regulations, expanding regulation of digital media, introducing restrictions in brand marketing, and tightening the enforcement of product placement regulations.
- Improving the nutritional quality of school meals to exclude UPF content through public procurement standards on nutrient content and minimal food processing.
- Reducing the density and address location of fast-food outlets by ensuring a health element in the local authority planning process.
- Protecting the right to regulate on public health measures to tackle obesity, such as nutrition labelling, in trade and investment agreements.

OVERVIEW

8. The OECD has estimated that overweight and obesity in the UK cause a loss of 3.4% of GDP, equivalent to a £409 tax paid by each person in the country every year.[1] The cost borne annually by the NHS to treat conditions associated with overweight and obesity has been estimated around £19bn. [2]
9. The food industry is shorthand for a complex set of industries that, together, form the food system. At least **four industries comprise the food system**: primary production (agriculture); food manufacturing; food retail; out-of-home food industry. All can, and do, influence dietary behaviours.
10. **Diet is the single most important determinant of disease burden** and food production is possibly the largest contributor to GHG emissions and depletion of natural resources at the global level. The role of the food industry must be assessed along both dimensions.
11. There is a market for food, and, as in all markets, trends are the result of both demand-side and supply-side pressures. The **food industry often responds to legitimate consumer demands, but its responses have generated unwarranted impacts on health**.
12. **No single policy will turn the tide of obesity. Holistic approaches are required to address the problem at all levels of the food industry, from trade policies to purchases at the till.**

RESPONSE TO SPECIFIC INQUIRY QUESTIONS

Q1. Key trends in food, diet and obesity, and the evidential base for identifying these trends.

13. Traditional dietary patterns based on minimally processed foods are being increasingly replaced by ultra-processed diets globally and in the UK especially since the 1980s. This is demonstrated by longitudinal data from repeat national dietary data and food expenditure surveys from nine countries.[3,4,5,6,7,8,9,10,11,12,13] In the UK, one of highest UPF consumers in the world, UPFs account for 56% of daily energy intake and this has remained largely unchanged between 2008 and 2019.[3]

14. Surveys from 13 countries show that ultra-processed dietary patterns are linked to worsening dietary quality.[14] The greater the UPF share in the diet is, there tends to be an increase in dietary factors of concern (e.g. sugar, salt, energy density) and declines in positive dietary factors (e.g. protein and fibres).[13,15,16,17] This pattern of UPF-rich diets being linked to obesity-promoting dietary profiles is also evident in children and adolescents based on national dietary data from eight countries.[18]

Q7. The cost and availability of a) UPF and b) HFSS foods and their impact on health outcomes.

15. **Trade liberalisation has increased the availability and accessibility of ultra-processed foods.** US trade agreements have been shown to increase the supply and sales of sugars and UPF foods. For example, following the free trade agreement between Canada and the USA in 1989, a daily calorie increase of 170kcal was observed in Canada.[19]

16. The effects of increasing UPF accessibility can now be seen in the density of fast-food shops. Analysis from Public Health England in 2017 revealed an average of 95.1 fast-food outlets per 100,000 population in England. **Fast-food outlets tend to be clustered with greater availability observed in areas of increasing deprivation**.[20]

17. **The cost of a healthy diet has become very inequitable**. Analysis from the Food Foundation[21] finds that the most deprived fifth of the population in the UK needs to spend 50% of their disposable income to meet recommended levels of a healthy diet. This compares with 11% of disposable income for the least deprived fifth. **Healthy foods are twice as expensive with fruit and vegetables costing an average of £11.79 per 1000kcal compared with £5.82 per 1000kcal for foods high in salt, fat and sugar.**

18. **Prices per calorie have been reduced to different degrees for different foods.** A study in the US in 2019 found that ultra-processed foods cost $0.55/100 kcal; processed foods cost $0.64/100 kcal, and unprocessed foods cost $1.45/100 kcal with oils, fats and sweeteners costing the least at $0.14/100kcal.[22] This underlines the **difficulty for those on low incomes to purchase healthy foods. A cost-effective mitigation** could be to implement a recommendation from the National Food Strategy for "**Eatwell**

prescriptions" for those on low incomes to receive free fruit and vegetables.[23]

19. We have conducted extensive research examining the links between UPF dietary patterns and health outcomes in the UK population using some of the largest prospective cohort studies. This includes establishing associations between UPF consumption and an increased risk of obesity, type 2 diabetes and certain types of cancer in UK adults using the UK Biobank[24,25,26] and adiposity in children using the ALSPAC prospective cohort.[27]
20. In collaboration with WHO International Agency for Research on Cancer (IARC), we have extensively studied associations of UPF dietary patterns with an increased risk of weight gain, obesity and various types of cancer in European populations using the EPIC prospective cohort.[28,29,30]

Q8. The role of the food and drink industry in driving food and diet trends and on the policymaking process.

21. The food industry drives trends through a variety of mechanisms, including pricing, quality, and quantity of foods sold and consumed both at home and out of home. Evidence is also emerging around the **extent to which the ultra-processed food industry is subject to financial interests of shareholders seeking maximum short-term returns**. Between 2019-2021, UPF food manufacturers and the food service sector distributed the equivalent of 10.4% and 11.9% of their revenue to their shareholders, compared to 3.1% and 1.1% during the three-year period between 1990 and 1992. [31]
22. **High production volumes require high sales volumes which results in heavy marketing** by the food industry. A review from NHS Scotland points out that UK consumers have the highest spending in Europe on price promotions with **price promotions on unhealthy foods and drinks tending to offer a greater reduction in price or greater product volume compared with healthier foods.**[32]
23. Large reductions in price per calorie have become possible as a result of industrial manufacturing. This creates a cycle of more industrially processed food, containing additives and high salt, sugar and fat products, becoming available, accessible and affordable.

Q9. Lessons learned from international policy and practice, and from the devolved administrations, on diet-related obesity prevention.

24. A study published in 2018 reported that 41.9% of the food, alcohol and tobacco challenges made to the World Trade Organization between 1995-2016 were found to be focussed on labelling regulations while 19.4% challenged restrictions on processed meats.[33] This means that **protecting the right to regulate for public health measures is essential so that obesity policies, such as nutrition labelling, can be implemented without the fear of raising lengthy and expensive trade disputes**.[41]

25. We conducted a systematic assessment of policies and infrastructure support aimed at healthy food environments and dietary choices in eleven European countries in 2019-21.[34] An assessment based on the same methodology had been led by the Food Foundation in 2016, reaching similar conclusions.[35] The analyses identified gaps in policy adoption, implementation and infrastructure, regarding food provision, promotion, retail, funding, and monitoring. Finland showed the best implementation with 32% of its food environment policies having "high" implementation. The study recommended "**immediate action on setting standards for nutrients of concern in processed foods, improvement of school food environments, fruit and vegetable subsidies, unhealthy food and beverage taxation, and restrictions on unhealthy food marketing to children**."

Q10. The effectiveness of Government planning and policymaking processes in relation to food and drink policy and tackling obesity.

26. Government policymaking processes in the past decade have focused on nudges to encourage a change in consumer behaviour and industry responsibility around product reformulation to reduce sugar content. **Regulatory measures can be effective, but they need to be very carefully designed. Voluntary measures have proven to be ineffective**. An analysis in 2013 concluded that public-private partnerships with the food industry are **simply "a way to co-opt public health**"[36] rather than being an effective way of managing the public's nutrition.

27. **Lessons must be learned from the 2011 Responsibility Deal** which was set up with a governing committee that comprised so many representatives of the food industry that the third sector advocacy bodies withdrew. Once the reporting mechanisms were relaxed, the food industry was able to present its own responses and feedback that lacked independent analysis. **The result was that the salt reduction programme "lost momentum."**[37] The same approach must not happen with sugar reformulation.

Q11. The impact of recent policy tools and legislative measures intended to prevent obesity.

28. Relative to the major impacts food production and consumption have on health and the environment, there is very little regulation in the food sector. **The scope for greater regulation and better taxation is very large.**

29. A study of online dessert menus from leading restaurant chains in 2020[38] found that **the voluntary aim of 20% sugar reduction was achieved in only one category,** that of ice-creams which achieved a 38% reduction. More than half of adult desserts exceeded nutritional guidelines on fat and sugar.

30. We compared mandatory reformulation policies in 24 countries and voluntary reformulation standards in 36 countries.[39] Reformulation standards targeted levels of salt, trans-fatty acids, sugar, total fats and saturated fats. All studies reviewing **mandatory reformulation showed improved nutrient profiles of the foods targeted by the reformulation, including**

those sold in schools. To date **there has been no study evaluating the impact of mandatory reformulation on children's food intake.** Strict standards and monitoring appear to be key to manufacturers' compliance with reformulation**; incentives, such as food labelling to show consumers the nutrient profile, had some success in encouraging manufacturers' compliance.** We found no systematic review that showed that voluntary reformulation would be more effective than mandatory requirements in improving nutrient profiles.

31. Our 2021 systematic review of the impact of food reformulation on nutrient intakes[40] found that **consumers accepted reformulated food such that a reduction of 0.57g per day in salt intake** was observed. The review did not find any studies looking at the effect of sugar reformulation on dietary intake. This review also found two studies showing that consumers offset reformulation by switching to less healthy options but "silent reformulation" where changes, for example in salt reduction, were not noticed by consumers did not lead to compensatory behaviour over food choices.

Q12. Policy tools that could prove effective in preventing obesity amongst the general population, including those focused on the role of the food and drink industry in tackling obesity.

32. In 2016, the UN Development Programme and the World Health Organization published a briefing aimed at trade and industry outlining the **necessity for coherent trade and health policies**.[41] They called for **"food taxes and subsidies to promote healthy diet"** as well as incentives for retailers to **"rearrange product placements to encourage healthier purchases**.**"**

33. Prof Franco Sassi led the Horizon 2020-funded STOP project across 16 countries to identify the factors behind the rise in childhood obesity across Europe and the scientific and technological initiatives needed to reverse the problem. In addition to over 60 peer-reviewed journal articles, STOP published **six key evidence-based policy actions**[42] in collaboration with the World Health Organization, to redress obesity, particularly in children. These covered: **nutrition labelling, nudges to promote healthy eating in schools, protecting children from harmful marketing, reformulation of food and beverages, promoting physical activity through schools, and fiscal policies to promote healthy diets.**

34. We published a systematic review in February 2024 assessing the effectiveness of health taxes on foods high in fats, salt and sugar such as energy-dense snacks, confectionery, bakery items, and high-fat foods.[43] We found **evidence of decreasing sales, or purchases, and intakes of taxed HFSS foods, especially when taxes were combined with subsidies on healthy foods**. Higher tax rates were more effective in reducing purchases or consumption. Tax effects differed by income level, with the lowest-income groups being most responsive. In experimental studies, combining taxes and subsidies contributed to mitigating regressive financial impacts of taxes.

35. We are currently undertaking work on fiscal incentives to improve consumers' health. The NIHR-funded FINCH project is evaluating the potential impact on diet, health and household finances of changes in the way taxes are applied to food in the UK. We estimate that the average household in the UK spends close to £500 per year in VAT on food and non-alcoholic beverages. VAT is applied at the standard (20%) rate only on some food products, partly depending on the place of consumption. About one in three food products that do not attract VAT are HFSS, while about one in four of those that do attract VAT at the standard rate are not HFSS. This suggests a **significant scope for a better alignment of existing food taxes to nutritional goals**, without the need for introducing new taxes.

36. Although school meals represent a key opportunity to improve the diets and health of children there are concerns about the quality of these meals in the UK. Using data from the National Diet and Nutrition Survey between 2008-2017, we found that **61% of calories come from UPF in school lunch in primary schoolchildren and 70% among secondary schoolchildren**.[44] Higher intake of UPFs was among children consuming packed lunches, in secondary school or from low-income households.

37. In another nationally representative study of British schoolchildren, we found that **children who consumed school meals were more likely to meet dietary recommendations compared with children taking packed lunches**, although the nutritional composition of school meals was suboptimal.[45] Furthermore, **children in secondary school who consumed school meals consumed lower amounts of fruits and vegetables and more sweet and savoury snacks compared with younger children**. Importantly, the quality of packed lunches was poor across all age groups in schoolchildren.[45]

38. Our evaluation of the **Universal Infant Free School Meals programme** (UIFSM) in primary schoolchildren in England and Wales showed some improvements in lower salt and total fat intakes.[46] We found evidence that **the beneficial effects** of the programme **were greater in children from low-income households**. While the results highlighted the potential of school meals to improve children's diets, **a renewed focus of improvements is required** to maximise their potential.[46]

39. **Public food procurement has the potential to improve dietary quality of foods including school meals**. For example, Brazil's national school feeding programme requires at least 75% of school food purchased to be minimally processed and 30% must be locally sourced.[44] There is some evidence linking this initiative to reduced UPF consumption, improved dietary quality and lower obesity rates in children.[47,48,49]

40. School meals could be further supported by **incorporating a health element into local authority planning processes** in order to restrict positioning of fast-food outlets near schools**.** Public Health England recommended that planning teams conduct health impact assessments.[50] In 2019 Lambeth Council in London adopted a strict exclusion policy for fast food retailers of 400m from a school boundary.[51] Gateshead Council also

demonstrated that planning for health can achieve significant changes in the proportion and density of fast-food outlets in just four years.[52]

41. A systematic review of studies providing causal evidence of the impact of food environments on BMI and health, undertaken by CHEPI, has shown that a high density and a shorter distance of unhealthy food outlets cause an increase in BMI in children, women and ethnic minority adults living in the areas concerned. In addition, we found that a higher density and shorter distance of healthy food outlets improves children's dietary intakes and BMI.[53]

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