

# THE PHYSIOLOGICAL SOCIETY - WRITTEN EVIDENCE (FDO0092)

## The Physiological Society's response to House of Lords call for evidence on the links between food, diet and obesity. April 2024.

1. The Physiological Society (The Society) is Europe's largest network of physiologists, at the forefront of science for almost 150 years. Physiology is the science of life, and research in physiology helps us to understand how the body works in health, what goes wrong in disease, and how it responds and adapts to the challenges of everyday life.
2. The Society organised a roundtable in March 2024 with experts in obesity, food science, and nutrition from within the membership. Our response to the House of Lord's Food, Diet and Obesity Committee's call for evidence is based on the findings of this roundtable. Note that 'participants' referred to in this response are those who attended the roundtable.

### Topic 1: Key trends in food, diet and obesity, and the evidential base for identifying these trends.

3. With reference to the evidential base, workshop participants noted that the evidence of the causal link between saturated fat, salt and sugar and negative health outcomes were well-established. However, the impacts of ultra-processed food (UPF) on obesity and health lacked causative evidence.
4. Fibre was noted as a key component of nutritional need, particularly the proportion of fibre in food compared to its salt and sugar content. Fibre is important for delaying gastric emptying, which can improve glycaemic control, and supporting the development of a healthy microbiome which promotes good metabolic health and physiological benefits beyond the microbiome<sup>1</sup>. There is also a crucial distinction to be made between calories and nutrition, as certain foods can have high calories but are completely devoid of nutrition.
5. Another important factor to consider is the role of pharmaceutical interventions on reducing the prevalence of obesity amongst the population. For instance, it is possible that due to the increase in availability of weight-loss drugs, people who are obese may not see the value of nutrition and healthy diet. Diet and exercise cannot only reduce weight but also have other health outcomes which cannot be achieved through medication. People who exercise regularly have better mental health and emotional wellbeing, and lower rates of mental illness.<sup>2</sup> Further, drugs can also negatively impact the microbiome, however, more research is needed in this area<sup>3</sup>. The impact of microbiome on obesity rates is not well-known; while studies have been conducted in mice, it is often difficult to translate the results to humans.

**RECOMMENDATION 1:** Promote the co-benefits of improved nutrition and physical activity amongst the wider population, and the advantages of these approaches to reducing obesity levels compared to newly available pharmaceutical approaches.

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<sup>1</sup> <https://www.bmj.com/content/378/bmj-2020-054370#:~:text=Eating%20more%20fibre%20linked%20to,l159.>

<sup>2</sup> <https://www.betterhealth.vic.gov.au/health/healthyliving/exercise-and-mental-health>

<sup>3</sup> <https://www.nature.com/articles/s41579-022-00681-5>

## **Topic 2: The primary drivers of obesity both amongst the general population and amongst distinct population and demographic groups.**

6. Unhealthy environments and lifestyles are the biggest drivers of obesity amongst the general population. Workshop participants noted that it was difficult to convince people to change their behaviour even though the evidence of healthy eating and exercise was well-established because of the food environment in which they often lived.

7. Moreover, many interventions fail to consider the entire family unit. Many families, especially those from lower socioeconomic groups cannot afford to buy healthy foods for the whole family, or support one individual's drive to lose weight. Healthy nutritious food is three times more expensive than obesogenic<sup>4</sup> unhealthy products, with healthier foods costing an average of £8.51 for 1,000 calories compared to just £3.25 for 1,000 calories of less healthy foods.<sup>5</sup> Moreover, plant-based and whole food options too are more expensive than meat and dairy products.<sup>6</sup>

8. With reference to particular population groups, participants noted that early adulthood (18-25 years) was critical period for substantial weight gain as people leave the structures of education and living with relatives and begin work and independent living.<sup>7 8</sup> It was recognised as important (but challenging) to tailor policies to this age bracket to prevent people from developing unhealthy habits and passing them on to their children. Adolescents are more likely to resort to unhealthy practises when they leave home for university and there was a real danger of this carrying on to adulthood.

9. Lastly, participants highlighted deprivation as a driver of obesity. In the UK especially, poorer areas tend to have more unhealthy fast food takeaway shops than less deprived areas.<sup>9</sup>

## **Topic 4: The influence of pre- and post-natal nutrition on the risk of subsequent obesity, and the specific influences on the diet of children and adolescents that contribute to the risk of becoming obese.**

10. Workshop participants noted that nutritional intake of the mother before and during pregnancy was an important factor in determining the health of the child, particularly in terms of cardiovascular disease, diabetes and risk of subsequent obesity. Children are more likely to be

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<sup>4</sup> Obesogenic refers to products or environments that promote gaining weight and one that is not conducive to weight loss

<sup>5</sup> <https://foodfoundation.org.uk/press-release/major-report-highlights-impact-britains-disastrous-food-policy>

<sup>6</sup> <https://www.which.co.uk/news/article/plant-based-alternatives-can-cost-twice-as-much-as-meat-which-finds-a4AzY8r4gTpO>

<sup>7</sup> [https://www.thelancet.com/journals/landia/article/PIIS2213-8587\(21\)00207-2/fulltext](https://www.thelancet.com/journals/landia/article/PIIS2213-8587(21)00207-2/fulltext)

<sup>8</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5679785/>

<sup>9</sup> <https://www.theguardian.com/society/2015/apr/02/fast-food-takeaway-shops-grow-more-rapidly-in-deprived-areas-of-uk>

overweight if the mother is obese during pregnancy and about 55% of obese children go on to become obese adolescents.<sup>10,11</sup>

11. Participants also mentioned the impact of maternal gut microbiome on foetal development, highlighting that further research is needed to understand the effect of food nutrition and metabolism on the gut microbiome and its effect on the physiology of the whole body.

**Topic 5: The definition of a) ultra-processed food (UPF) and b) foods high in fat, sugar and salt (HFSS) and their usefulness as terminologies for describing and assessing such products.**

12. Workshop participants highlighted the need for a more technical and physiological approach to naming foods which should include phrases like ‘devoid of fibre’ and ‘very little nutritional value’.

13. Participants noted that due to the abundance of terminologies used to describe unhealthy foods, consumers often find it difficult to understand the meaning of these different terms and there was little shared vocabulary and scientific endpoints for research into the physiological impact of UPF and HFSS.

**Topic 6: How consumers can recognise UPF and HFSS foods, including the role of labelling, packaging and advertising.**

14. Workshop participants highlighted that a vast majority of the UK population is unable to identify unhealthy foods as they are not aware of UPF and HFSS labelling and its meaning. For example, out of 1,500 people surveyed in late 2023, 80% had not heard of the HFSS labelling legislation.<sup>12</sup>

15. Further, participants noted that the current lack of standardised and agreed upon definitions leads to confusion and makes it difficult to target physiological research and behavioural interventions. Terms such as UPFs and HFSS should have clear operational and standardised definitions which are based on physiological and nutritional evidence. This will not only make it easier for the population to know what to look out for but will also make it more difficult for food companies to find loopholes in the definitions.

**RECOMMENDATION 2:** Provide easier, more straightforward access to information about healthy foods for consumers. This includes introducing clear operational and standardised definitions for unhealthy items based on physiological and nutritional definitions, ensuring that meanings of terms such as HFSS and UPFs are easily accessible to all and easy to interpret.

**Topic 9: Lessons learned from international policy and practice, and from the devolved administrations, on diet-related obesity prevention.**

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<sup>10</sup> <https://www.sciencedirect.com/science/article/abs/pii/S0091743518303463>

<sup>11</sup> <https://pubmed.ncbi.nlm.nih.gov/26696565/>

<sup>12</sup> <https://www.conveniencestore.co.uk/your-business/more-than-80-of-consumers-unaware-of-hfss-legislation/685821.article>

16. Workshop participants noted that information about diet and nutrition was not accessible to everyone and can be difficult to interpret. It is important that diet-related tips are more widely available and include tasty food options. For example, in 2020, The Netherlands launched a campaign to encourage people to eat more fruits and vegetables. The campaign involved everyone in the supply chain from growers, and pickers to supermarkets and consumers.<sup>13</sup> Following the success of the campaign, they have also launched a new plan to double legume consumption by 2030.<sup>14</sup>

17. The Government can also consider focusing on a few unhealthy habits instead of taking a whole dietary approach. This method has proven to be effective in Scandinavian countries such as Finland which was able to reduce rates of cardiovascular disease by making the food environment healthier; the country saw a reduction in smoking and salt and butter consumption, while also encouraging residents to eat more fruits and vegetables.

18. Further, the Government can introduce bold labels and warning signs at the front of certain food items. In Latin America, countries such as Brazil, Argentina, Mexico, and Peru, have all introduced nutritional labelling systems for prepackaged food and beverages; this means that foods high in salt, sugar, total fat, saturated fat have black hexagon signs.<sup>15</sup>

19. Participants also noted the importance of schools in ensuring that children have access to proper nutrition. The European Union launched a School Fruit Scheme in which three portions of fruits were provided to each child; this scheme was proven to be effective in countries such as The Netherlands and France.<sup>16 17</sup>

**RECOMMENDATION 3:** Introduce clear front package labelling of products high in fat, sugar or salt (HFSS) with a black octagon to make it easier to identify foods with low nutritional value.

## **Topic 12: Policy tools that could prove effective in preventing obesity amongst the general population, including those focussed on the role of the food and drink industry in tackling obesity.**

20. There are several policy tools that could be effective in preventing obesity these have been classified into the following categories: education, research, behaviour change and unhealthy food

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<sup>13</sup> <https://www.fruitnet.com/fresh-produce-journal/dutch-campaign-helps-to-boost-morale/181673.article>

<sup>14</sup> <https://www.foodnavigator.com/Article/2023/02/20/The-master-plan-to-double-legume-consumption-in-the-Netherlands-by-2030>

<sup>15</sup> <https://my.nzte.govt.nz/article/20231011-complying-with-front-of-pack-labelling-rules-in-latin-america>

<sup>16</sup> [https://agriculture.ec.europa.eu/common-agricultural-policy/market-measures/school-fruit-vegetables-and-milk-scheme/school-scheme-explained\\_en](https://agriculture.ec.europa.eu/common-agricultural-policy/market-measures/school-fruit-vegetables-and-milk-scheme/school-scheme-explained_en)

<sup>17</sup> <https://www.wur.nl/en/article/school-fruit-scheme-proves-effective.htm>

advertising. These should be carried out in conjunction with policies related to increasing physical activity levels, which is outside the scope of this response. Policy proposals related to labelling and clearer definitions are highlighted elsewhere in this response.

#### A. Education

21. If children are encouraged to focus on nutrition, diet and exercise in school they are more likely to continue to make healthy food choices. However, many schools do not have the resources to support healthy food policies which highlights the broader issue of the need to tackle inequalities.

22. As a public health measure, the Government should educate the public about food. It is often difficult for the public to know what is beneficial and good for health. In particular, there is a lack of awareness about the benefits of fibre and the general public have a mistrust of fibre and its link to digestive issues which must be challenged.<sup>18</sup> It is often easier to get the population to adopt positive habits rather than convincing them to not eat certain foods.

23. Joint efforts and policies are needed to educate and encourage people of the benefits of fruit and vegetables on the microbiome, which can significantly improve physical and mental health.

**RECOMMENDATION 4:** Promote the fibre content in foods and its benefits to health throughout the population.

#### B. Research

24. Participants highlighted the need for more physiological studies, in particular randomised controlled trials (RCTs) that assess the negative impact of UPFs and HFSS. Currently, studies do not test for energy density of foods, a key driver of energy intake and more research is needed to make specific claims about health effects. Data on impact of the circadian rhythm on nutrition and time feeding to improve health outcomes is needed. There is also a need for preventative health trials. Lastly the impact of different interventions throughout the life course is needed; these include the impact of diet, nutrition and exercise on:

- Pre-pregnancy maternal health and foetal development
- Puberty
- Early adulthood
- Pregnancy
- Peri- and post-menopause
- Ageing

**RECOMMENDATION 5:** Increase research capacity for physiological studies, particularly studies that use Randomised controlled trials (RCTs) and preventative trials that take a life course approach.

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<sup>18</sup> <https://www.boots.com/inspiration-advice/wellness-advice/healthy-lifestyle/gut-health-myths-busted>

### C. Behaviour change

25. Behaviour change is another important factor in achieving good health and wellbeing. However, long-term change is difficult to achieve; people are more likely to adopt healthy habits such as exercise to lose weight in the short-term but may revert to their unhealthy lifestyles in the longer term. With the help of physiologists, nutritionists, and behaviour change specialists, people must be supported to adopt healthier diets. It is also important to separate weight loss due to nutrition and exercise to understand what they can offer separately as well as in combination.

**RECOMMENDATION 6:** Encourage interdisciplinary collaboration between physiologists, nutritionists, exercise scientists and behavioural psychologists to help people take active steps to improve their health.

### D. Advertising of Unhealthy Foods

26. The Government must also ensure that proper legislation is put in place to control marketing and advertising tactics used by junk food companies. For example, energy drinks have been marketed as a 'hydration drink' due to the presence of coconut water, however, all the other ingredients make it an ultra-processed and unhealthy drink with artificial sweeteners.<sup>19</sup> Companies must be forced to change such marketing strategies that alter unhealthy foods and advertise them as 'healthy' and 'hydrating' to children and young adults.

27. Other marketing tactics include advertising products to be healthier than they are. For instance, breakfast cereals branded as having Vitamin K, to disguise the fact that they were extremely high in sugar. Companies also try to reduce their serving suggestions to make them appear to have less sugar and saturated fat.

*8 April 2024*

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<sup>19</sup> <https://www.poison.org/articles/is-prime-an-energy-drink>