PAEDIATRIC SPECIALIST GROUP (PSG), AND MATERNAL AND FERTILITY NUTRITION SPECIALIST GROUP (MFNSG); BRITISH DIETETIC ASSOCIATION - WRITTEN EVIDENCE (FDO0101)

Introduction: The British Dietetic Association (BDA) represents registered dietitians, who are qualified health professionals who treat diet and nutrition problems at an individual and public health level. As such, the BDA are well placed to respond to this call for evidence into food, diet and obesity. Numerous specialist groups of the BDA work across the lifespan, from preconception infancy, childhood, adolescence and adulthood. The individuals and specialist groups of the BDA who have responded to the request for evidence include:

Kiranjit Atwal, Angharad Banner and Lisa Cooke on behalf of the BDA Paediatric Specialist Group (PSG). Evidence concerning paediatric nutrition (from birth to 18 years) can be identified in blue text.

Dr Julie Abayomi, Komal Kumar and Dr Kate Maslin on behalf of the BDA Maternal and Fertility Nutrition Specialist Group (MFNSG). Evidence concerning preconception and prenatal nutrition can be identified in green text.

Executive Summary:

Nutrition during the first 1000 days affects lifelong health, with inadequate nutrition increasing the risk of obesity and non-communicable diseases. Maternal diet, gestational weight gain, and birth weight influence obesity risk, emphasising the importance of optimising nutrition during pregnancy.

Obesity can stem from early childhood. Childhood obesity prevalence has remained high across the UK since the 1990s, particularly in deprived areas, underscoring socioeconomic disparities. Recent evidence highlights associations between larger portion sizes, higher sugar (and low fibre) intake, and childhood obesity risk. Unhealthy food/drinks are cheaper and more accessible, contributing to imbalanced diets and obesity risk, particularly among socioeconomically disadvantaged populations.

Obesity leads to physical health issues like hypertension and metabolic dysfunction, as well as psychological consequences such as stigma and poor mental health. Biological, psychological, and social factors also contribute to obesity, necessitating a multifaceted approach to prevention. Despite various government policies, obesity rates continue to rise.

Effective measures against obesity include a whole-systems approach to promoting healthy lifestyles, early intervention programs including expansion of Healthy Start and Free School Meal schemes, regulating and restricting unhealthy food/drinks access and advertising. Manufacturer reformulation and taxation of unhealthy food/drinks are also possible strategies. Furthermore, regulation must ensure inappropriate health claims on food/drinks are not used and consumers need further education to better identify ultra-processed foods.

The role of dietitians is pivotal in the national response to obesity. Much investment is needed to increase access to dietetic services that can deliver high-quality information and implement interventions that prevent and treat the complications of excess weight.

In summary, addressing obesity requires a comprehensive approach involving government policies, significant investment in healthcare services including dietetics, marketing regulation, reformulation, consumer education, and socioeconomic interventions that promote affordable healthy diets and lifestyles.

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

   There is a lack of up-to-date data on the nutritional intake of children living in the UK. This makes it difficult to understand the extent of current dietary concerns in children. Data from the last NDNS survey data from 2016-2019 highlighted that the highest mean intake of sugar-sweetened drinks was in children aged 11-18 years (142g/day), but had reduced by 25% in this age group since 2008. The intake of free sugars exceeded recommendations and fibre intakes were below recommendations in all age groups, demonstrating poor dietary habits (1).

   Prevalence amongst children from school surveillance programmes in England and Scotland suggests that 21.4-21.9% of children aged 4-5 years and 22.7% of children aged 10-11 years are classified as living with obesity or at high risk. This has steadily risen since as early as the mid-1990s and has shown no signs of slowing down. Socioeconomic inequalities are highlighted in the data as obesity prevalence is twice as high in deprived areas compared to affluent (2, 3).

   Conclusion: The UK lacks current data on children's nutritional intake, hindering understanding of current dietary concerns. Previous data has shown high sugar intake and low fiber

consumption. School surveillance indicates a high prevalence of childhood obesity, especially in deprived areas.

Recommendations:

- improved national data collection on the nutritional intake of children
- prevalence of childhood obesity continues to rise across the UK
- targeted interventions addressing dietary habits and socioeconomic disparities, public health campaigns, policy interventions and efforts to reduce socioeconomic inequalities, aiming to promote healthier eating and reduce childhood obesity nationwide.

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

Increased energy-dense diets (particularly fast food, sugary drinks and snacks), and sedentary behaviours/decreased physical activity, have been attributed to some of the common causes of childhood obesity (4).

The recent report by SACN (2023) on feeding young children aged 1-5 years found evidence from systematic reviews that indicated (5):

- larger portion sizes of snacks and meals provided in preschool settings are associated with higher food and energy intakes in the short term (less than 6 months)
- higher total protein intake in children aged 1 to 5 years is associated with higher BMI in childhood
- higher child BMI or weight status is associated with a higher risk of adult overweight or obesity

These findings are of concern about wider evidence on:

- the high prevalence of overweight and obesity in childhood in the UK, particularly in lower socioeconomic groups and in some ethnic groups

The aetiology of obesity is multifactorial and can be described through a bio-psycho-social lens. Biological factors include Cushing's disease, hypothyroidism, concomitant drug use such as glucocorticoids, and rare genetic predispositions (6). Psychological factors include depression, anxiety and emotional disorders, which may exist as bidirectional relationships. Social factors that interact to create the 'obesogenic' environment include food/drink advertising, access to food outlets and ultra-processed food, as well

as familial eating habits and health literacy can also be considered contributing factors (4, 7, 8).

Conclusion: Childhood obesity is driven by energy-dense diets and sedentary lifestyles. SACN's recent report highlights concerns, linking larger portion sizes and protein intake to higher BMI in children. Moreover, childhood obesity increases the risk of adult overweight. High prevalence in lower socioeconomic and certain ethnic groups underscores the need for urgent action.

Recommendations:

- Addressing obesity's multifaceted nature requires a comprehensive approach, considering biological, psychological, and social factors.
- Strategies should include promoting healthy eating habits, reducing sedentary behaviour, and improving health literacy.
- Additionally, regulating food advertising, enhancing access to nutritious foods, and fostering supportive environments are essential for combating childhood obesity effectively.

3. The impacts of obesity on health, including children and adolescent health outcomes.

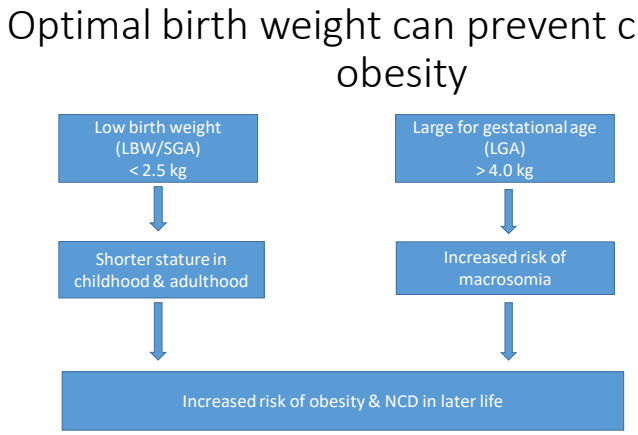
   The impact on children can be both physical (e.g. hypertension, dyslipidaemia, glucose intolerance, metabolic dysfunction-associated steatotic liver disease, idiopathic intracranial hypertension and obstructive sleep apnoea(9) (10)) and psychological (e.g. poorer mental health linked to bullying and stigma (11) (12)).

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.

   Good nutrition during the first 1000 days of life (from conception to a child's second birthday), is identified as having the most influence on lifelong health. It is a critical period for growth and development and inadequate nutrition can compromise health for life (13). Infant birth weight is a key indicator of the intrauterine environment and it can be affected by several factors (including genetics, maternal pre-pregnancy BMI and maternal diet) (14). However maternal diet and gestational weight gain (GWG) are both modifiable risk factors, so providing evidence-based advice during antenatal care to optimise both, is vital for positive pregnancy outcomes and long-term health.

Optimal birth weight: Optimal birth infant weight is defined as between 2.5-4.0 Kg; this is the weight associated with optimal short-term and long-term health. Infants born outside of this range have an increased risk of obesity and non-communicable disease (NCD) in later life (14).

Figure one: Optimal birth weight can prevent obesity



Low Birth weight (LBW): This is defined as <2.5 kg; the UK has one of the highest rates of LBW in Europe at 6.9% (n= 53,000) in 2017, compared to 4.2% in Finland (15). Low maternal pre-pregnancy BMI and/or inadequate GWG have increased risk of poor pregnancy outcomes, particularly LBW and/or pre-term delivery. Interventions to reduce LBW include investing in nutrition (especially during pregnancy), promoting a healthy diet and strengthening the capacity of health providers to support pregnant women to achieve optimal nutrition and GWG (16).

Barker's developmental origins of health and disease hypothesis, suggest that gene expression for obesity and NCD, (such as type 2 diabetes and cardiovascular disease), may be permanently altered by nutrient environment in early life (17). This was determined by comparing the birth records of infants born previously, to the presence of NCD in the same individuals as adults. A strong association between LBW (reflecting poor nutrition in utero), and NCD in adults was found. So preventing LBW, by ensuring good maternal nutrition would reduce the prevalence of obesity and NCD in adults.

Large for gestational age (LGA): This is defined as >4.0 kg; 18.2% of live births in England and Wales were LGA during the period 2000-2020 (which is close to the global average for LGA). Furthermore, infant birth weight >4.5 kg was associated with an increased risk of neonatal mortality (18). Infants born with LGA

have a significantly higher risk of childhood obesity (50%); furthermore, they are more likely to experience cardiovascular-related premature death (by 35%) (19).

Gestational weight gain: GWG occurs because of the growing fetus, increased maternal tissue, expanding blood volume and fat reserves for lactation. Optimal GWG is associated with optimal birth weight, while excess GWG and/or high maternal pre-pregnancy BMI are associated with increased risk of both LGA and LBW (19). There are currently no UK recommendations for GWG. In the absence of UK guidance, American guidelines are often referred to. These provide guidance for GWG based on pre-pregnancy BMI, as shown in Table 1 (20). These recommendations were associated with optimal birth weight and were initially intended to avoid LBW, (data largely pre-dates the increased prevalence of obesity in pregnancy). Furthermore, global evidence from over one million pregnancies found that 47% of women gained more than IOM guidelines, demonstrating a high prevalence of excess GWG (21).

Table 1: USA Institute of Medicine guidelines for weight gain during pregnancy(20)

Body mass index (BMI) category	Total weight gain (kg)
Underweight (BMI <18.5)	13–18
Normal weight (BMI 18.5–24.9)	11–16
Overweight (BMI 25–29.9)	7–11
Obese (BMI ≥30)	5–9

Excess GWG is also associated with the risk of postpartum weight retention and obesity during subsequent pregnancies (22). So antenatal care should include advice about achieving optimal GWG, yet this rarely happens.

Maternal diet: Poor nutrition during pregnancy is associated with numerous health risks for both mother and infant. The World Health Organisation states that maternal obesity, excessive GWG and multiple micronutrient deficiencies initiate harmful effects in the womb, increasing the risk of pregnancy complications, poor fetal development and childhood obesity (23). The UK National Diet and Nutrition Survey [(12)] found that UK women of childbearing age (19-49 years) are deficient in several micronutrients essential for fetal development (e.g. iron and iodine), with up to 30% of women achieving less than the Lower Reference Nutrient Intake (LRNI), indicating a high level of deficiency (24). Recently (2023), the

NiPPeR study found that 90% of women actively planning pregnancy (in UK, New Zealand and Singapore), were deficient in key micronutrients, essential for fetal development (specifically folate, riboflavin, B12 and vitamin D) (25).

Advice about diet and GWG during antenatal care: There are very few dietitians working in antenatal care and as dietetics is a small profession (~11,000 in the UK); pregnant women are unlikely to access a dietitian during routine antenatal care. UK antenatal guidelines, state that midwives should discuss nutrition, diet, and vitamin supplementation with all women, at booking-in appointments (26). However, midwives have limited training and confidence regarding nutrition and implementing these guidelines, so this rarely happens. Research in this area found that none of the midwives interviewed reported receiving any training about nutrition; consequently, discussions about nutrition were not prioritised "*We probably spend less time talking about diet and weight than anything else in pregnancy*" (27). Pregnant women have also reported that they want advice about pregnancy nutrition and GWG, but that they find that the advice that they receive is often vague, lacks depth and is inconsistent (28, 29).

Conclusion: Optimal nutrition and GWG is important in pregnancy for the short and long-term health of pregnant women and their offspring. It is well documented that UK women frequently experience poor diet and sub-optimal GWG during pregnancy. Access to evidence-based, reliable advice about pregnancy nutrition and GWG are vital aspects of antenatal care. Midwives are struggling to have meaningful conversations with women about nutrition, and there are very few dietitians working in antenatal care.

Recommendations:

- Investment in increasing access to dietitians, especially in antenatal care.
- Specific training regarding pregnancy nutrition and gestational weight management for midwives, delivered by experts in maternal nutrition.
- Investment and expansion of initiatives that promote access to and consumption of healthy nutritious food during and after pregnancy, e.g. Healthy Start

Breastfeeding during the first year of life has many health benefits. The available evidence indicates higher protein content of infant formula is associated with higher weight in the first 2 years of life

but does not affect length. Lower protein intake in infancy might diminish the later risk of overweight and obesity (5).

The early introduction of solids has been linked to an increased risk of obesity. However, studies are largely observational and cannot define causality. Studies have found no difference in obesity risk for infants introduced to solids at 4-6 months compared with those exclusively breastfed to 6 months. There may be a small increased risk of obesity associated with the introduction before 3 months. The reasons for this are unclear. It has been suggested that earlier solid feeding may increase energy intake. However, randomised control trials have found that solid foods displace energy from breastfeeding and do not lead to higher energy intake (30-32).

Responsive feeding practices avoid over-controlling feeding practices, such as strict rules on how much to feed and forcing or pressuring children to eat, and also discourage indulgent and uninvolved feeding styles, in which the parent feeds the child in response to any sign of upset or in a disorganised manner. Interventions to promote caregiver-responsive feeding have reported beneficial effects on caregiver feeding behaviour and on the quality of the infant diet (33, 34). Results from the INSIGHT study which investigated the effect of a responsive parenting intervention, including responsive feeding on childhood obesity suggested that parental responsive feeding has positive effects in the context of obesity prevention (35).

Conclusion: Breastfeeding confers numerous health benefits and should be promoted in early life. Early introduction of solids has been associated with obesity, but causality remains unclear. Responsive feeding practices promote healthy eating behaviours. Further research is needed to elucidate the mechanisms underlying solid introduction and obesity risk, enhancing our understanding of early feeding's impact on lifelong health.

Recommendations:

- promoting and supporting breastfeeding.
- introducing solids around 6 months, and fostering responsive feeding practices.

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.

a). Ultra-processed food (UPF) refers to food products that have undergone extensive processing and contain multiple additives,

preservatives, and other artificial substances. The term may not be entirely helpful in certain contexts.

Labelling foods as "ultra-processed" can sometimes oversimplify complex nutritional issues and may lead to the stigmatisation of certain food products or food categories. This could potentially alienate individuals who consume these foods due to factors such as convenience, cost, dietary necessity (ARFID) or cultural preferences.

The term UPF does not account for the wide variation in nutritional quality among processed foods. Not all processed foods are unhealthy, and some may still provide valuable nutrients while being convenient and affordable. Using a blanket term like UPF may fail to recognise these distinctions and harm certain diets.

UPF focuses primarily on the level of processing rather than the specific nutritional composition of foods. As a result, it may overlook healthier processed options that contain beneficial nutrients or fortifications, for example, bread and breakfast cereals.

Simply categorising foods as "ultra-processed" may not provide helpful actionable guidance on making healthier dietary choices. It may be more useful to focus on educating consumers about specific nutrients to limit (e.g., added sugars, saturated fats, sodium) and encourage the consumption of whole or minimally processed foods. Educating and directing consumers about food labelling and how to interpret these labels is extremely helpful in understanding the differences in processed foods.

b). Foods high in fat, sugar, and salt (HFSS) are food products that contain elevated levels of these three components compared to their counterparts. These foods tend to be energy-dense but low in essential nutrients, contributing to excessive calorie intake without providing significant nutritional benefits.

HFSS provides a clear description of food products that are high in critical nutrients associated with health concerns, namely fat, sugar, and salt. This classification helps in identifying foods that may contribute to excessive calorie intake and pose health risks when consumed in excess.

There are instances where it might not be considered entirely helpful in describing and assessing products in this way.

HFSS primarily focuses on three components: fat, sugar, and salt, while overlooking other critical aspects of nutrition such as fibre,

vitamins, minerals, and overall dietary patterns. This narrow focus might not fully capture the nutritional quality of a product.

Categorising foods solely based on their fat, sugar, and salt content may oversimplify the complexity of nutrition and dietary choices. Not all foods high in these components are inherently unhealthy, and some may provide essential nutrients or fit into a balanced diet when consumed in moderation.

While HFSS terminology serves a purpose in certain contexts, it should be used with broader nutritional guidance and education to promote healthier dietary choices effectively.

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

   Consumers can recognise UPFs by checking the ingredient list on food packaging. UPFs typically contain a long list of ingredients, including additives, preservatives, and artificial flavours.

   To recognise both UPF and HFSS foods, look at the nutritional label for information on fat, sugar, and salt content. They often have high levels of these components. Be wary of products with excessive amounts of added sugars, saturated fats, and salt per serving.

   Packaging and processing methods of UPFs and HFSS are often found in brightly coloured packaging, boxes, or cans and are marketed as convenient, ready-to-eat options. Foods that undergo extensive processing, such as extrusion, or hydrogenation, are more likely to be ultra-processed.

   The advertising of UPFs and HFSS products plays a significant role in consumer behaviour and dietary choices. While advertisers utilise various strategies to promote these products, there are growing concerns about the impact of marketing on public health, particularly among vulnerable populations such as children.

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

   UPF and HFSS foods are often more affordable than fresh, whole foods. This can be particularly relevant for individuals and families with limited financial resources, who may prioritise purchasing cheaper, processed options over healthier alternatives.

   UPF and HFSS foods are widely available in supermarkets, convenience stores, and fast-food outlets. They are often prominently displayed and heavily marketed, making them easily

accessible to consumers, including those living in areas with limited access to fresh, nutritious foods.

Eating these foods regularly and in large consumptions can lead to imbalanced diets and nutritional deficiencies, increasing the risk of obesity, cardiovascular disease, type 2 diabetes, and other chronic health conditions.

Efforts to promote healthier diets and reduce the burden of diet-related diseases should focus on addressing the socioeconomic factors that influence food choices, improving access to affordable, nutritious foods, and implementing policies to regulate the marketing and availability of processed foods. Additionally, education and public awareness campaigns can help individuals make more informed choices.

8. The role of the food and drink industry in driving food and diet trends and on the policymaking processes

   The food and drink industry plays a significant role in driving food and diet trends through various means, including marketing, product innovation, and lobbying efforts:

   - **Marketing and Advertising**: The food and drink industry invests heavily in marketing and advertising campaigns to promote their products. These campaigns often target vulnerable populations, such as children and adolescents, using persuasive techniques to promote unhealthy foods and beverages HFSS.

   - **Product Innovation**: Food and beverage companies continually innovate to develop new products that appeal to consumer preferences and trends. However, many of these products are often HFSS, contributing to poor dietary habits and obesity.
   - **Lobbying and Influence**: The food and drink industry exerts influence on policymaking processes through lobbying efforts and involvement in political activities. This influence can manifest in shaping regulations, influencing public opinion, and obstructing or diluting policies aimed at improving public health, such as sugar taxes or marketing restrictions.
   - **Research Funding**: Some food and beverage companies fund research studies to support their marketing claims or to shape public perceptions about the healthiness of their products. However, there are concerns about conflicts of

interest and bias in industry-funded research, which may influence study outcomes and conclusions.
- **Partnerships and Sponsorships**: The industry often forms partnerships with professional associations, healthcare organisations, and community groups, sometimes sponsoring events or programs. While these collaborations may provide financial support, they can also create conflicts of interest and undermine public health efforts.

Conclusion: the evidence suggests that the food and drink industry exerts significant influence on food and diet trends and policymaking processes in the UK, which can hinder efforts to address diet-related health issues such as obesity and chronic diseases. Addressing these challenges requires transparent and evidence-based policymaking processes, robust regulatory frameworks, and effective measures to mitigate conflicts of interest and industry influence.

Recommendations:

- Transparency and Accountability: Enhance transparency in policymaking processes by publicly disclosing interactions between policymakers and industry representatives. Implement mechanisms to identify and mitigate conflicts of interest, such as strict disclosure requirements and recusal policies for policymakers with ties to the industry.
- Regulatory Reform: Strengthen regulatory frameworks to ensure that public health considerations take precedence over industry interests. This may include implementing stricter regulations on the marketing and advertising of unhealthy foods, enacting sugar taxes or other fiscal measures, and establishing clear guidelines for industry-funded research.
- Independent Research and Evaluation: Encourage independent research on diet-related health issues and limit reliance on industry-funded studies. Support research institutions and organisations that conduct rigorous, unbiased research to inform evidence-based policymaking.

- Public Health Advocacy: Empower public health advocates and civil society organisations to counter industry influence and advocate for policies that prioritize public health. This may involve building coalitions, raising awareness among policymakers and the public, and mobilising support for evidence-based interventions.
- Ethical Standards and Codes of Conduct: Develop and enforce ethical standards and codes of conduct for interactions

between policymakers and industry representatives. This includes guidelines on accepting gifts, donations, and other forms of industry influence, as well as penalties for non-compliance.
    - Diverse Stakeholder Engagement: Ensure that policymaking processes include input from a diverse range of stakeholders, including public health experts, consumer advocacy groups, healthcare professionals, and community representatives. This can help balance competing interests and perspectives and promote inclusive decision-making.
    - Capacity Building: Build the capacity of policymakers, regulators, and healthcare professionals to critically evaluate industry influence and navigate complex policy environments. Provide training and resources on identifying conflicts of interest, assessing evidence, and prioritising public health objectives.
- International Collaboration: Collaborate with international partners and organisations to share best practices, coordinate efforts, and address global challenges related to food and nutrition. International collaboration can help strengthen regulatory frameworks, enhance research capacity, and amplify advocacy efforts on a global scale.

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

   The examples below illustrate the diverse range of policies implemented by countries to address diet-related obesity. Each approach reflects the unique context and challenges faced by different regions, highlighting the importance of tailored strategies to effectively tackle this global health issue.

    - **Sugar Tax** (*Mexico, United Kingdom, Chile*): Several countries have implemented taxes on sugary drinks to discourage consumption and generate revenue for public health initiatives. For example, Mexico implemented a tax on sugary drinks in 2014, resulting in a reduction in consumption. However, the impact on obesity rates may take longer to assess fully(36). The United Kingdom also introduced a sugar tax in 2018, leading many manufacturers to reformulate their drinks to reduce sugar content. Early evidence suggests that the sugar tax has led to a reduction in the sugar content of beverages and may have contributed to a decline in sales of sugary drinks (1, 37). Chile has implemented a comprehensive package of measures, including a sugar tax, warning labels on unhealthy foods, and marketing restrictions aimed at reducing childhood obesity.

However, while this has shown promising initial results in improving dietary habits, the impact on reducing childhood obesity needs further exploration (38).

- **Marketing Restrictions** (*France*): France has implemented strict regulations on the marketing of unhealthy foods to children. Advertising of foods high in fat, sugar, and salt is prohibited on television programs targeting children under 12 years old. Additionally, advertisements for these foods must include health messages encouraging balanced diets and physical activity. While there is limited data on the direct impact on obesity rates, the regulations have helped reduce children's exposure to advertisements for unhealthy foods (39).

- **Front-of-Package Labelling** (*Chile, Ecuador*): Chile and Ecuador have introduced front-of-package labelling systems to help consumers make healthier choices. These systems use simple, easy-to-understand labels to indicate the nutritional quality of packaged foods. In Chile, products high in calories, sugar, sodium, or saturated fat are required to carry black warning labels. Early evidence suggests that front-of-package labelling has increased consumer awareness of the nutritional quality of foods and may influence purchasing decisions. However, the long-term impact on obesity rates is still being evaluated (38).

- **Healthy School Food Policies** (*Japan*): Japan has implemented policies to improve the nutritional quality of school meals and promote healthy eating habits among children. School lunch programs prioritize fresh, locally sourced ingredients and aim to provide balanced, nutritious meals. Additionally, nutrition education is integrated into the school curriculum to teach students about the importance of healthy eating. School food policies have contributed to improving the nutritional quality of meals served in schools and promoting healthy eating habits among children. However, the direct impact on obesity rates may be challenging to isolate from other factors influencing children's dietary behaviours (40).

- **Urban Planning and Active Transportation** (*Netherlands*): The Netherlands has implemented urban planning policies that prioritize active transportation, such as walking and cycling, to promote physical activity and reduce obesity. Cities are designed with pedestrian-friendly

infrastructure, including bike lanes, sidewalks, and green spaces, making it easier for residents to incorporate physical activity into their daily routines. The Netherlands' focus on urban planning and active transportation has led to higher rates of cycling and walking, contributing to overall physical activity levels. While this can have positive effects on health, the direct impact on obesity rates may be influenced by other factors as well (41).

- **Food Labelling and Advertising Regulations** (*Australia*): Australia has introduced regulations to improve food labelling and restrict the advertising of unhealthy foods. The Health Star Rating (HSR) system provides consumers with easy-to-understand information about the nutritional quality of packaged foods. Additionally, there are restrictions on the marketing of unhealthy foods to children through television, radio, print media, and online platforms. The HSR system and advertising regulations have raised awareness about the nutritional quality of foods and reduced exposure to the marketing of unhealthy products. Initially, unhealthy foods were, however, less likely to adopt HSR. As such, mandatory labelling has the greatest potential for improving the healthiness of packaged foods. The direct impact on obesity rates may take time to assess comprehensively (42).

Conclusions: Overall, while these examples demonstrate promising approaches to addressing diet-related obesity, evaluating their effectiveness requires longitudinal studies and consideration of various confounding factors. Additionally, addressing obesity often requires a combination of multiple interventions across different sectors to achieve meaningful and sustainable outcomes.

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

Numerous government policies have been released to tackle the growing obesity crisis but have failed to control the issue, as demonstrated by the growing prevalence, despite the UK government pledging to halve childhood obesity by 2030 (43).

Several strategies have been launched to tackle obesity, including *Healthy Weight, Healthy Lives* in 2008 and *Call to Action on Obesity* in 2011, but in 2017 the *Childhood Obesity Plan* was heralded to specifically tackle the growing problem in children. However, it did

not recognise the importance of commissioning lifestyle weight management services or the role of dietitians in obesity prevention and management.

There is a lack of lifestyle weight management services commissioned at tier 2 (lifestyle intervention) and tier 3 (specialist multidisciplinary intervention) services for children although the development of specialist pilot clinics is underway (44). A large body of evidence exists to suggest that lifestyle weight management programmes demonstrate successful outcomes (45). Children and their families can implement healthy behaviours effectively and demonstrate weight management (46). These programmes require a multi-component framework, which is age-specific, personalised and culturally appropriate (47, 48). NICE guidance outlines the core components of lifestyle weight management programmes which need to be commissioned at greater lengths (49).

An independent report, *Time to Solve Childhood Obesity*, by the former Chief Medical Officer was published in 2019 and outlined a set of proposals that went beyond the current government strategy, which highlighted the importance of commissioning Tier 2,3 and 4 weight management services for children. More stringent recommendations on affordable healthy food were also outlined, as well as addressing the marketing of food and drinks high in fat, salt or sugar (50).

The Welsh government published their comprehensive 10-year plan, *Healthy Weight, Healthy Wales,* outlining a strategy echoing much of the independent report and shone the spotlight on dietetics by committing to implementing evidence-based, dietetic-driven, lifestyle weight management programmes.

Conclusion: Government policies to combat obesity have fallen short, evidenced by rising prevalence despite pledges to halve childhood obesity by 2030. Limited commissioning of tier 2 and 3 services contrasts with evidence supporting their effectiveness. Independent reports advocate for expanded weight management services and tighter regulations on unhealthy food marketing.

Recommendations:

- Expand Commissioning of Lifestyle Weight Management Services: Increase funding and support for tier 2 (lifestyle intervention) and tier 3 (specialist multidisciplinary intervention) weight management services for children.

- Implement Evidence-Based Programmes: Invest in evidence-based lifestyle weight management programmes that incorporate a multi-component framework. Tailor interventions to be age-specific, personalised, and culturally appropriate to effectively address the diverse needs of children and families.
- Strengthen Policy Framework: Enact more stringent regulations on unhealthy food marketing and advertising, particularly those targeting children. Ensure affordability and accessibility of healthy food options, especially in deprived areas.
- Emulate Successful Strategies: Learn from successful initiatives implemented by other jurisdictions, that prioritise evidence-based, dietitian-led interventions to tackle childhood obesity effectively.
- Focus on Prevention: Place greater emphasis on preventative measures, including promoting healthy eating habits, physical activity, and positive lifestyle behaviours from an early age. Invest in education and awareness campaigns targeting children, families, and communities.
- Monitor and Evaluate: Establish robust monitoring and evaluation mechanisms to track the effectiveness of interventions and policy measures. Regularly assess progress towards obesity reduction goals and adjust strategies as needed based on evidence.

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

The government have previously launched voluntary and mandatory measures to improve the formulation of food and drinks in the UK (including the Soft Drinks Levy and the Calorie Reduction Programme). This UK parliamentary file summarises some of these measures and their impact, which includes a reduction in the sugar content of beverages and a decline in sales of sugary drinks. However, the impact needs to be re-analysed (see https://researchbriefings.files.parliament.uk/documents/POST-PN-0638/POST-PN-0638.pdf).

The impact of restricting public transport advertising on high sugar, salt and fat (HFSS) food/drinks on household purchases in London found a reduction in spending (£) and in the average number of individual HFSS food/drink items purchased (51). The direct impact on obesity rates may take time to assess comprehensively, though it may be difficult as obesity is influenced by many other factors.

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.

There are many ways of targeting important factors in the fight against obesity which are discussed below:

Whole systems approach: Healthy food choices must be made as accessible as the less healthy choices. A 'whole systems approach' that aims to include multiple sectors, including health, education, agriculture, urban planning, and food industries, to position health issues at a policy level would help achieve this. Policies that address the various determinants of obesity tend to be more effective. Governments must work with the food industry to increase availability, accessibility, and affordability of healthy foods for all. Governments could create policies to help build communities which promote and enhance healthy lifestyles. This approach needs to draw on local authorities' who lead local priorities and approaches by engaging with their community and local assets.

Expand intervention opportunities (tier 1) in the early years: Greater investment and implementation of evidence-based programmes (tier 1) that incorporate a multi-component framework (diet, behaviour and activity) and are tailored to local population needs (age and culturally appropriate) to effectively address the diverse needs of children and families are essential.

Leeds successfully demonstrated a reduction in rates of obesity in children aged 5 from 9.4% in 2009 to 8.8% in 2016. Furthermore, prominent results were seen amongst those living in the most deprived areas where rates dropped from 11.5% to 10.5% (52). The consequences were the combined effect of access to affordable food, opportunities for physical activity and delivery of an early prevention programme (tier 1), HENRY (health, exercise and nutrition for the really young) (53). This approach, or similar, could be replicated in many of the major cities in the UK through the reopening and commissioning of early-years centres and more health visiting teams to deliver key health messages.

Healthy Start, Free School Meals and the Holiday Food Fund: It is well known in areas of deprivation, obesity rates are higher. The Food Foundation found that the cost of eating in line with the Eatwell guide in households with children, where annual income is less than £15,860, would require 42% of disposable income (Food Foundation 2018). This demonstrates the impact on low-income

families and explains the dependence on inexpensive, energy-dense, nutrient-poor foods by many families. Initiatives such as Healthy Start need to be expanded by age and household income to help more children access healthier foods. Furthermore, in the high-profile court proceeding for 'child A' who won the right of entitlement for the scheme who initially wasn't eligible due to immigration status (though the mother had the right to live and work in the UK), eligibility should be regardless of immigration status, as some of the poorest children are from migrant or refugee backgrounds, and are vulnerable.

There should be an extension of the Holiday Food Fund and Free School Meals eligibility in schools so more families qualify to support all children to eat more healthily.

Money from the taxation of HFSS food/drinks has previously been proposed to be reinvested in some of the initiatives to prevent obesity. However, taxation often hits the poorest the hardest and there are loopholes for manufacturers to escape. Therefore, using taxation for funding critical elements such as Free School Meals, Holiday Food Fund and Health Start ultimately relies on the consumer to keep purchasing high sugar/salt content products which could undermine the aim of the long-term strategy.

Manufacturer reformulation of HFSS food/drinks: while some believe ingredients fail to incentivise better food choices, in some age groups approaches to reformulation must be looked at. One example is especially in the early years (infants around 6 months to 2 years). Better legislation is needed around the level of 'free sugars' allowed in food/drinks targeted at parents/carers for use in weaning (or complementary feeding) and in the early years. See the report by Action on Sugar which highlights the severity of this issue: https://www.actiononsugar.org/surveys/2021/baby--toddler-sweet-snacks/

Tackling access & advertising of unhealthy food: To escape the 'junk food cycle' there need to be restrictions on the number of fast-food outlets allowed to open in any one area, next to early years and school settings, and hospitals. Restricting HFSS advertising should be more widely than currently indicated in policy, for example on social media, and online gaming platforms, which may help to reduce HFSS purchases and subsequently lower ever-rising cases of obesity in the UK.

8 April 2024

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