

# **OBESITY SPECIALIST GROUP, BRITISH DIETETIC ASSOCIATION - WRITTEN EVIDENCE (FDO0100)**

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

Obesity is a complex, relapsing, chronic condition with multiple overlapping drives that impact a person's body weight over their life course. Drivers include genetic, biological, psychological, social and environmental. The Foresight report (2007) identified over 100 distinct factors that impacts a person body weight which tend to be individualised. Genetic play a significant role with data suggesting that this has approximately 70% heritability. The food environment plays a significant role currently, with greater accessibility to cheap, high fat, salt, sugar foods alongside the cost of living crisis driving food insecurity impacting the most vulnerable in our population. However, to suggest that one factor is driving the increase prevalence of obesity within the UK and globally is not accurate and there is a need for a whole system approach to address this issue in the future.

One key factor at the present time is food insecurity. Paradoxically those who are food insecure are more likely to be living with obesity. Adult women in high-income countries, odds of high body weight are about 50% higher in food-insecure individuals compared to food-secure. For PLWO, the rising cost of healthier food creates a food-insecure environment, not related to access to food, but rather, access to affordable and healthier food. It should be noted that healthier foods are x3 more expensive per calorie than unhealthy foods therefore dietary choices for those of lowest incomes often limited to a low-price, high-energy foods, promote weight gain.

## ***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***

Despite nutritional inadequacies at micronutrient level, many women of child-bearing age are living with overweight or obesity suggesting an excessive energy intake and/or sedentary behaviours. Data from the 2018 Health Survey for England suggests that between 34.9 and 61.3% of women aged 16-44 years are living with overweight or obesity (HSE, 2018).

Epidemiological evidence suggests positive associations between childhood obesity and maternal obesity at different stages of the maternal life-course (Moussa et al, 2016), with the majority of data identifying links with the presence of maternal obesity at pre-conception (Heslehurst et al, 2019), and

during childhood (Téllez-Rojo et al, 2019). Heslehurst et al, 2019 looked at the influence of pre-pregnancy weight status and found significantly increased odds of child obesity with maternal obesity (odds ratio [OR] 3.64, 95% CI 2.68-4.95) and maternal overweight (OR 1.89, 95% CI 1.62-2.19). Their meta-regression found increasing odds of child obesity with increasing child age. The Thrifty Phenotype hypothesis has been proposed to explain this increased risk of childhood obesity where the relationship between periconceptional and early growth risk factors, including permanent changes in glucose-insulin metabolism, may increase the risk of subsequent adiposity in the off-spring (Barker et al). Since this hypothesis was first proposed over 30 years ago, there has been further evidence supporting the influence of prenatal and childhood exposures of adiposity and long-term health status in later life (Voerman et al, 2019).

Excessive gestational weight gain occurs in approximately 50% of pregnancies and women who may have started their pregnancy with a BMI in the healthy range may find themselves with a raised BMI after pregnancy. Post-partum weight retention (PPWR) is an important contributor to parity-related weight gain. Around 20% of women will retain 4kg or more at one-year post-partum and any PPWR increases the likelihood of long-term maternal weight retention and is a strong predictor of obesity in later life, increasing the risk of developing obesity-related conditions in the mother (Mannan, 2013). Téllez-Rojo et al, 2019 compared the growth-trajectories and children's energy intake according to maternal post-partum BMI classification. They found that at 42 months of age, infants from mothers that remained overweight during the first year post-partum had, on average, 0.61 SD higher weight-for-height z score (WHZ) than those from mothers who were a healthy BMI in the same period. At 60 months of age, children's prevalence of obesity was almost twice in the maternal overweight group (14.2% and 7.3% respectively). Chances for a child of having an excessive energy intake were 36.5% (95% IC: 6.6%, 74.8%) and significantly greater among children from overweight mothers. A concurrent ethnographic study with the study subjects suggested differences in the food landscape might contribute to childhood obesity beyond having an overweight mother.

The post-partum and pre-conceptual period can for some be a continuum with the post-partum period from one pregnancy being the preconceptional period for the next. The ability to return to a healthier weight during the interpregnancy interval will depend on post-partum diet quality, energy intake and expenditure – the latter which may be influenced by the duration and exclusivity of breastfeeding.

The post-partum period is generally overlooked in current healthcare provision and yet represents an important time in the life-stage where good nutrition and appropriate weight management support may improve maternal and infant outcomes for subsequent pregnancies. The SWAN study aimed to determine whether a weight management programme is feasible and effective at helping

women lose weight and improve their lifestyle after giving birth. Almost 200 women, living with overweight or obesity, from an ethnically diverse inner-city population were invited to take part in the SWAN study. Half of the women were given normal care, and the other half were offered weight management support which included lifestyle advice and access to a local community group for 12 weeks. The results showed that women offered the weight management programme saw a 13% reduction in their weight at 12 months post-partum, compared to 4.2% weight reduction among the women offered normal care. Women who attended at least 10 sessions saw the greatest benefit (Bick et al, 2020).

Harrison et al (2012) evaluated clinical practice guidelines (CPGs) for weight management and weight-related behaviours across preconception, pregnancy, and post-partum. Their review found significant ambiguity in guidance and absence of important considerations, including targeting weight gain prevention and limiting excess gestational weight gain. The findings emphasise the need for robust, comprehensive, and high quality guidelines on healthy lifestyle and weight management across these formative reproductive life stages.

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**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.***

HFSS foods have been targetted within dietary guidelines for decades, with significant public health guidance on the reduction of these foods.

There are multiple definitions used to describe UPF with the most well known being the Nova classification. This is split off into 4 sections: The NOVA classification categorises food and drink into four groups:

- **Unprocessed or minimally processed foods:** Fruit, vegetables, eggs, meat and grains.
- **Processed culinary ingredients:** Sugar, salt, butter, lard, oils, vinegar.
- **Processed foods:** Freshly made, unpackaged bread, tinned fruits and vegetables, salted nuts, ham, bacon, tinned fish and cheese.
- **Ultra-processed:** Ice cream, ham, sausages, crisps, mass-produced bread, breakfast cereals, biscuits, carbonated drinks, fruit-flavoured yogurts, instant soups.

The definition of UPF has its challenges and although there is significant overlap with HFSS, but not all UPF are considered unhealthy according the front of package labelling.

Data from IGD looking at consumer awareness, understanding and perception of UPF in relation to shopping choices in the retail environment and report this data:

- 2 in 5 claimed to understand what UPF means, meaning 60% of people did not know what they were. Processing was not in the front of consumers' minds when shopping, consumers underestimate the amount of UPF consumed, they were unable to identify accurately most UPFs tested and UPF evied strong emotions and confusion.

Furthermore, barriers to reducing UPF were: price, habit, shelf-life, family preferences and preparation time

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

Nutritional guidance is communicated to the public in the supermarket environment using the front of package labelling (FOPL). FOPL systems differ across countries, from simple non-interpretive nutrient information to interpretive semi-directive colour coded nutrient information (e.g. multiple traffic light (MTL) system in the UK), to interpretive directive advice to support consumer choices (e.g. Nutri-Score in Europe). Current FOPL focus on the energy and nutrient content of products. Compared with no label, FOPL systems help consumers to better rank the healthiness of food products:

In the UK, the Eatwell Guide advice is provided through the MTL system, which assigns a green, amber or red colour on a FOPL based on whether the content of fat, saturated fat, salt or sugar is low, medium or high, respectively.

UPF is not identified within the UK but is on other countries Chile and Mexico have done this using effective black hexagons for UPF food. Data however has shown that when comparing FOPL systems that the NutriScore and Multiple Traffic Light system help people identify health foods better than the black hexagons (<https://pubmed.ncbi.nlm.nih.gov/33802115/>)

More recently a paper has been published <https://pubmed.ncbi.nlm.nih.gov/38220223/> which compared food and drink in the UK National Diet and Nutrition Survey (NDNS) Intake24 database based on FOPL, nutrient content and NOVA classification, to understand whether UPF are covered by dietary recommendations for foods high in fat, salt and sugar. From the paper, Ultra-processed foods (UPFs) had greater levels of energy, fat, saturated fat, sugar and salt than minimally-processed foods – but not all UPFs were unhealthy. The most common ultra-processed foods with no red FOPL traffic lights included sandwiches (n=65, 7.6%), high fibre breakfast cereals (n=43, 5.0%), other milks (e.g., plant-based milk alternatives, milkshakes) (n=38, 4.5%) and white bread (not high fibre, not multiseed) (n=35, 4.1%).

On the weight of evidence people should be continuing to use the traffic light system as there is significant evidence that diets high in saturated fat, added sugar and salt (HFSS) are associated with increased risks of early death and non-communicable disease such a type 2 diabetes and heart disease.

We do not yet know what the value is of considering processing alongside our existing guidelines. However, from our existing knowledge of diet and health, and what we understand about UPF so far, it is clear that the wider food environment is very important, and the impact this has on food choice.

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

Diets high in saturated fat, added sugar and salt (HFSS) and low in dietary fibre are associated with increased risks of mortality and non-communicable disease. As such, UK dietary guidelines recommend that the public reduces their intake of these nutrients, to lower the risk of developing non-communicable diseases such as obesity, type 2 diabetes and CVD and all-cause mortality. There is high quality data showing these links and therefore this is why governmental dietary guidelines advise reducing the impact of HFSS foods.

Regarding the adverse effects of UPF on health the Scientific Advisory Committee on Nutrition (SACN) in the UK published a statement regarding the association of food processing with health outcomes following a search and analysis of 20 systematic reviews of randomized controlled trials (RCTs) and cohort studies and concluded:

- Majority of systematic reviews of primary studies showed associations between intakes of UPF and poor health outcomes
- however, the inconsistent and sometimes inadequate adjustment for covariables made it unclear whether the associations were related to food processing per se or were instead due to nutrient intake profiles associated with high consumption of UPFs (for example, increased energy density and high intakes of saturated fat, free sugars and salt)

At the present time there is a distinct lack of high-quality data (RCT) to show that processing specifically is the driver of ill health and therefore caution should be taken at this present time.

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

At the present time and to the knowledge of this committee, no policy or practice has directly impacted on diet-related obesity prevention. The solution is likely to require multiple policies that need to focus not on the individual but rather the food environment and reformulation in order to address systemic change. A whole system approach is needed with significant long-term funding that transcends a government term of office.

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