Healthy Weight & Good Nutrition JSNA Profile Pack

Not all things are equal - Who is at risk of overweight, obesity and poor nutrition and what are the inequalities faced by these groups?

Supplementary Document

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4.1 Executive summary

The prevalence of overweight and obesity has been observed to be increasing across England over the years, while poor nutrition remains a concern, which carries significant implications on health. Inequalities between social groups regarding excess weight (overweight or obese) and nutrition have also been observed. Understanding these inequalities and knowing which populations are at risk will help to inform more effective actions in tackling and preventing poor nutrition and excess weight within our local population. In this report, we look at the populations at risk of excess weight and poor nutrition, with a focus on inequalities in these groups.

Following a literature search, the evidence reviewed in this report demonstrates clear and persistent inequalities in overweight, obesity, and nutrition across England, with relevance for our local population in Nottinghamshire. These inequalities are patterned across socioeconomic status, age, gender, ethnicity, disability, early-life circumstances and environmental factors.

Excess weight

Excess weight remains highly prevalent, affecting both adults and children.[1,5] The burden is not equally shared:

- **Deprivation** is one of the strongest drivers of inequalities. Adults and children living in the most deprived areas experience significantly higher rates of overweight, obesity, and severe obesity.[5,6,12] The gap between the most and least deprived areas continues to widen, particularly in older children.[1,5] In the most deprived areas in England, prevalence of excess weight is 12% higher than the least deprived areas.[1]
- **Ethnicity** shapes risk independently of socioeconomic position.[8,9] Black ethnic groups experience the highest prevalence of excess weight in both adults and children.[5,6,7] Some Asian groups show mixed patterns, with Bangladeshi and Pakistani groups having higher risks of obesity in childhood.[5]
- **Age** plays a role: while middle-aged adults have the highest prevalence of excess weight, young adults (18–24) have the highest risk of weight gain among adults, especially those who are already overweight.[1,3]
- **Gender** differences exist, with men more likely to be overweight but women more likely to experience obesity and stronger socio-economic inequalities.[1,4,5]
- **Disability and long-term illness** are strongly associated with higher prevalence of excess weight.[1,4]
- **Early-life and parental influences**, including parental education, income, maternal obesity, smoking, and early-life socioeconomic circumstances predict later obesity risk.[2,12,26,27]

Nutrition

Poor nutrition disproportionately affects those in disadvantaged circumstances:

- **Socioeconomic status** remains a dominant determinant of diet quality. Lower-income households consume fewer fruits and vegetables, more high-fat and high-sugar foods, and face financial and environmental barriers to healthy eating.[13,15,29,32,33] For example, the most deprived fifth of the population (without children) would need to spend 45% of their disposable income on food to meet the government's Eatwell guidance.[30]

- **Food insecurity** is strongly linked to poor diet quality, obesity risk, and poor physical and mental health outcomes—especially affecting households on Universal Credit, lone parents, disabled individuals, and those in temporary accommodation.[29,35,36,37,38,39]
- **Ultra-processed foods (UPFs)** contribute significantly to weight gain and poorer diet quality, with consumption highest among deprived groups and adolescents in low-income households.[40.41.42]
- **Ethnic disparities** exist in dietary patterns, including lower fruit and vegetable consumption in several minority groups after adjusting for socioeconomic status.[43,44,45]
- **Early-life circumstances**, including parental education and early-childhood food environments, influence children's diet quality and UPF intake and continue to shape dietary patterns into adulthood.[46,47,48]
- **Environmental factors**, such as neighbourhood food environments and access to green space, also contribute to nutritional inequalities.[31,32]

Together, these findings highlight a complex and interconnected system of structural, socioeconomic, cultural, and environmental influences that shape weight and nutrition outcomes throughout life, which can also drive inequalities in excess weight and poor nutrition. It is important to consider all these factors and how they interplay when trying to address inequalities between various groups for tackling overweight/obesity and poor nutrition.

4.2 Background

The prevalence of overweight and obesity has been observed to be increasing across England over the years, while poor nutrition remains a concern, carrying significant implications on health. Inequalities between social groups regarding excess weight (overweight or obese) and nutrition have also been observed. Understanding these inequalities and knowing which populations are at risk will help to inform more effective actions in tackling and preventing poor nutrition and excess weight within our local population. Here we will look at the populations at risk of excess weight and poor nutrition in separate sections, with a focus on inequalities in these groups. Given that poor nutrition impacts weight, there will also be some overlap between the two sections.

4.3 Methods

An evidence review was conducted in January 2026 to assess what inequalities exist for populations at risk of being overweight or obese and having poor nutrition.

Key questions included:

- What populations are at increased risk of becoming overweight or obese?
- How does deprivation influence the risk of becoming overweight or obese?
- What populations are at increased risk of poor nutrition?
- How does deprivation influence the risk of poor nutrition?

A systematic search of the bibliographic databases, such as CINAHL and Medline, and other quality sources was carried out to find the best available evidence relating to the questions.

The search was conducted in January 2026 focusing primarily on UK based reports and studies with papers published from 2020 onwards to provide more relevant and up-to-date data that could be applied to the local population. The most relevant reports addressing our questions are discussed in the following sections.

4.4 Inequalities in overweight and obesity

4.4.1 Which groups are at risk of becoming overweight or obese?

Studies and national data consistently show that patterns exist between excess weight and age, gender, ethnicity, socioeconomic status, disability, early-life circumstances and environmental/lifestyle factors. We will look at these various factors individually and how they affect both children and adults regarding their risk of excess weight.

The Obesity Statistics report published in 2025 used the Active Lives Survey 2022 findings to reflect how excess weight in adults varies between social groups[1]. The main areas of inequalities highlighted were:

- **Deprivation:** In the most deprived areas in England, prevalence of excess weight is 12% higher than the least deprived areas.
- **Disability:** Among people with disabilities, excess weight is 10% higher than among those without disabilities.
- **Ethnicity:** People in Black ethnic groups have the highest rates of excess weight.
- **Education**: Among people with no qualifications, rates of excess weight are 9% higher than among people with level 4 qualifications or higher (a degree).

This is reflected in the figure below, taken from the Obesity Statistics report in 2025.

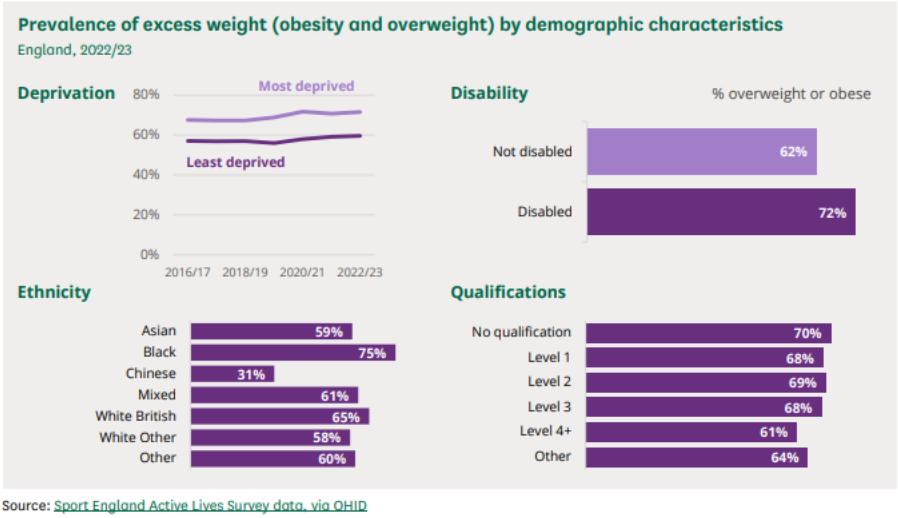


***Figure 1: Prevalence of excess weight by demographics**. Source: Stiebahl, S. (2025). Obesity Statistics.*[1]

These findings are supported by various other reports and studies. Capoccia et al looked the social, cultural and ethnic determinants of obesity and found that social disparities, such as socioeconomic status (income, education, employment), racial/ethnic differences and gender, can contribute significantly to weight gain from childhood to adulthood[2]. The risk factors they identified are seen in their figure below.

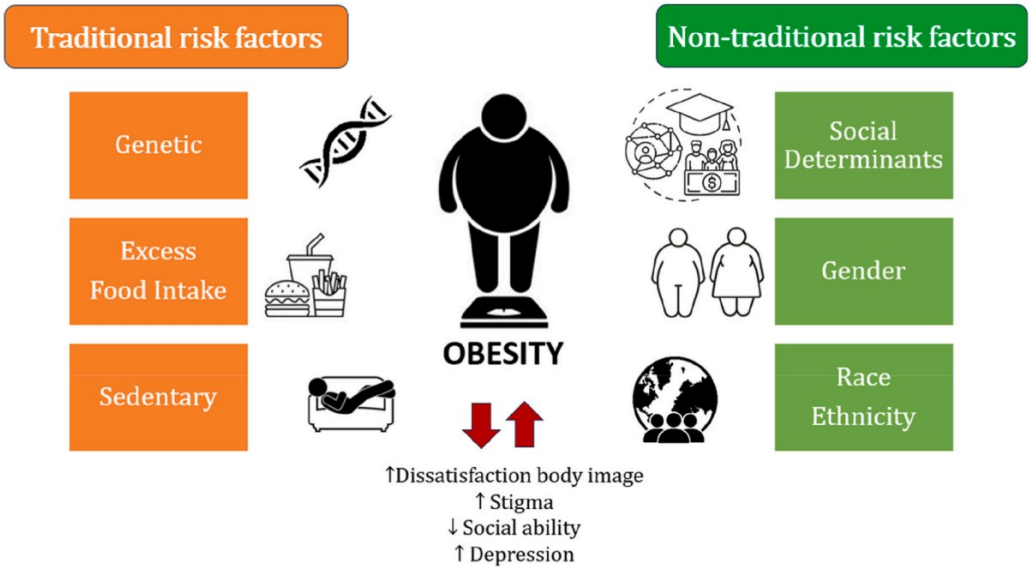


Fig. 2. Traditional and Non-traditional risk factors for obesity.

***Figure 2: Traditional and non-traditional risk factors for obesity.** Source: Capoccia et al, (2025) Social, cultural and ethnic determinants of obesity: From pathogenesis to treatment.*[2]

Further studies looking at inequalities echo these findings. Katsoulis et al found that age, being male, living in a socially deprived neighbourhood and being from a Black ethnic background contributed to

the risk of BMI change[3]. Additionally, Candio et al found that at a national level, socioeconomic deprivation was positively associated with excess weight across the adult population, with long-lasting illness status, educational qualification and neighbourhood-level deprivation being key risk factors[4]. Interestingly, they also found large variation between regions and genders, with inequality being either considerably higher or exclusively patterned among women.

Even among children, there is public health concern regarding the trend in childhood obesity in England and the implications of obesity persisting into adulthood. The National Child Measurement Programme (NCMP) is a part of the Government's approach to tackling childhood obesity by annually measuring over one million children in mainstream state-maintained primary schools in England to help provide reliable data on the percentage of children living with obesity[5]. Data is excluded from non state-maintained schools due to variation in reporting where it is not mandatory, so it is worth noting that homeschooled children or those attending special or private, independent schools are therefore not included in this data. In 2024 to 2025 the NCMP collected height and weight measurements from 1,145,893 children in reception (aged 4 to 5 years) and year 6 (aged 10 to 11 years). In this period, it was found that most children in reception (75.4%) and in year 6 (62.2%) were a healthy weight. However, 10.5% of children in reception and 22.2% of year 6 children were living with obesity. Severe obesity prevalence in year 6 (5.6%) was higher than in reception (2.9%).

4.4.2 Age

According to the Obesity Statistics 2025 report, people aged 55 to 74 were more likely to be overweight or obese than other age groups, with prevalence of excess weight above 70% in these age groups.[1] The adult age group least likely to be overweight or obese was 16 to 24-year olds, with a prevalence of 27%. This same report also highlights that using NCMP data, 9.6% of reception age children in England (ages 4-5) were obese in 2023/24, with a further 12.4% overweight. These proportions were higher among year 6 children (age 10-11), with 22.1% being obese and 13.8% overweight. When compared to the NCMP data mentioned above, there appears to be a slight increase in obesity prevalence in children from 2023/24 and the following year.

Despite 16-24 year olds having the lowest adult prevalence of excess weight, this is an important period for weight change. In a study by Katsoulis et al, electronic health records (EHR) across 400 primary care practices in England were used to identify high-risk groups for changes in weight and BMI.[3] Over 2 million eligible individuals were included at the start of this study. They found that young adult age was the strongest risk factor for weight gain at 1, 5, and 10 years of follow-up. Compared with the oldest age group of 65–74 years, adults in the youngest age group (18–24 years) had the highest odds ratio of 4·22 [95% CI 3·86–4·62]) and greatest absolute risk of transitioning from normal weight to overweight or obesity at 10 years. Additionally, 18-24 year olds who were already overweight or obese were at the highest risk of transitioning to a higher BMI category. They also found smaller additional contributions to the risk of change in BMI from living in socially deprived regions and ethnicity, however they found that compared with age, other sociodemographic factors had weaker associations with weight gain. Their study highlights the importance of targeting young adults in obesity prevention strategies, as they are the highest risk group among adults for developing excess weight.

4.4.3 Gender

In 2023 to 2024, the prevalence of overweight (including obesity) in adults was higher among men (69.7%) than women (59.2%), while the prevalence of obesity in adults was higher among women (26.9%) than men (26.2%)[6]. Meanwhile, looking at national data from the HSE in 2022, from the age of 25, men in England were more likely than women to have excess weight, with 67% of men in the overweight or obese category compared to 61% of women.[1]

Among children in 2024/25, the prevalence of obesity is higher in boys than girls, in both reception (10.7% compared to 10.3%) and year 6 (24.6% compared to 19.8%). Prevalence of severe obesity is also higher in boys than girls, in both reception (3.1% compared to 2.7%) and year 6 (6.6% compared to 4.5%).[5]

These trends reflect that in general in recent years, males seem to have a higher prevalence of excess weight. However, when assessing for socio-economic inequalities in excess weight, Candio et al found that long-lasting illness and deprivation played a greater role in women, suggesting that the impact of inequalities may be more pronounced in women.[4]

4.4.4 Ethnicity

Recent data from the Office of Health Improvement and Disparities (OHID) found that in 2023/24, the prevalence of overweight (including obesity) and prevalence of obesity in adults remains highest among those who identified as Black (73.4% and 33.1% respectively) or White British (65.7% and 27.8% respectively).[6] This is similar to earlier figures from The Department for Digital, Culture, Media and Sport where the Active Lives Survey in 2022 found that 70.8% of black adults were overweight or living with obesity – the highest percentage out of all ethnic groups while 33.1% of adults from the Chinese ethnic group were overweight or living with obesity – the lowest percentage.[7]

Even when looking at weight disparities among ethnicity groups in children, there are large differences in prevalence, as seen in the NCMP report from 2024/2025.[5] Similarly to adults, children from Black ethnic groups are more likely to be living with obesity, while children from the Indian ethnic group are more likely to be underweight. In reception obesity prevalence was highest among children of Black African ethnicity (15.0%) and any other Black background ethnic groups (14.5%). Severe obesity prevalence was also highest among children from Black African (5.0%), any other Black background (4.7%) and Bangladeshi (4.3%) ethnic groups. This was also seen in year 6 where obesity prevalence was highest among children from any other Black background (31.4%), Black Caribbean (30.8%), Black African (29.6%) and Bangladeshi (29.3%) ethnic groups. Severe obesity prevalence was highest among children from Black Caribbean (10.4%), and any other Black background ethnic groups (10.3%).

The weight disparities among ethnic groups and the higher risk of carrying excess weight among Black ethnicities is also reflected in various other studies and reports. Even when taking socioeconomic factors into account, differences in risk of overweight and obesity exist.

Stennett et al investigated ethnic inequalities in overweight prevalence during mid-adolescence using body mass index (BMI) and the contribution of socioeconomic and behavioural factors.[8] They used data obtained from the Millennium Cohort Study (MCS), which included self-report questionnaires on behaviours. They found inequalities in BMI and overweight prevalence during mid-adolescence between UK ethnic groups. In comparison with their White counterparts, Black Caribbean males

were over three times more likely to be overweight, whilst Black African females had higher odds of being overweight. Indian females were the only ethnic group to have a significantly lower BMI than White females. Even when accounting for socioeconomic factors and unhealthy behaviours (skipping breakfast, infrequent fruit and vegetable consumption, frequent sugar-sweetened beverages and fast-food consumption and infrequent physical activity), they did not feel these explained the differences in overweight/BMI between ethnic groups. It is worth noting there were low numbers for some ethnic minority groups within the sample, that may affect the statistical power, and that the self-reporting of behaviours introduces the possibility of recall bias.

Strugnell et al looked at the prevalence of obesity/overweight among ethnicity categories within boys and girls in England and the differential influence of socioeconomic position (SEP) using the 2015/2016 and the 2016/2017 cycles of the National Child Measurement Programme.[9] They found ethnic differences between socioeconomic groups and theses differences in overweight/obesity persisted after adjustment for SEP, age at measurement, and month of measurement. Among the five most populous ethnic groups in the most deprived quintile, in reception girls, 31.2% with a Black African background were overweight/obese compared with 26.8% of White British background, 22.2% of any Other White (e.g., White European) background, 20.7% of Pakistani background and 17.1% of Indian background. They concluded that ethnicity had an independent effect on overweight/obesity prevalence among boys and girls in reception and year 6 after adjustment for SEP.

In 2022, Higgins looked at whether the relationship between co-ethnic density/area deprivation and waist circumference differs by ethnic group. Waist circumference was used as the measure of central obesity rather than BMI, with data from the HSE and 2011 Census.[10] It was found that for women, the relationship between area deprivation and waist circumference did not vary by ethnic group, however there was an increase in waist circumference as co-ethnic density increases for Black Caribbean women. Co-ethnic density refers to the concentration of individuals from a certain ethnic group, so these findings reflect higher levels of central obesity among Black Caribbean women who live in proximity with others of the same ethnicity. Meanwhile they found for Indian and Bangladeshi men there was a decrease in waist circumference as area deprivation increases, and for Indian men there was a decrease in waist circumference as co-ethnic density increases.

Lu et al investigated socio-economic disparities in child-to-adolescent BMI trajectories and risks of overweight and obesity during adolescence across ethnic groups.[11] Using data from the MCS, they found that poverty was associated with higher BMI in children of White and South Asian origins. There was a reverse income-BMI association in children of Black (African-Caribbean) origin with the poverty group having a lower BMI. They concluded that socio-economic advantage may not be universally associated with lower BMI, which should be considered when planning obesity interventions. In their study, the association between family income and BMI was the opposite in children of Black African-Caribbean origin—the poverty group had a lower mean BMI than the nonpoverty group. They were not able to examine why this socio-economic pattern in BMI was only observed in the Black African-Caribbean group but not in the South Asian group, and suggested this may need repeating. Given they used BMI as a measure of excess weight, it is worth noting that BMI does not distinguish between fat mass and lean mass, and there are known ethnic differences in body composition in UK children in those of Black African-Caribbean origin. In this study, they also oversampled minority ethnic groups, but the sample sizes of South Asian and Black African Caribbean groups were still relatively small, which led to wider confidence intervals of estimates in

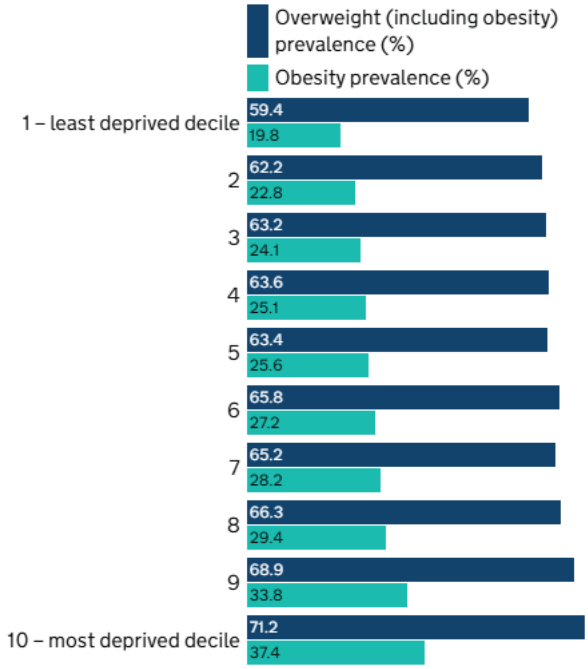
these groups. Nevertheless, they highlighted the importance of public health approaches taking into consideration the varying needs of their target populations.

Overall, this gives us a picture that inequalities exist between ethnic groups, even when taking in to account socioeconomic factors, with Black ethnicities at higher risk of excess weight. The reasons behind the observed racial/ethnic disparities in obesity can be complex and have been proposed to be influenced by a combination of factors, including racism, culture, dietary patterns, food insecurity, and neighbourhood characteristics.[2]

4.4.5 Deprivation and socioeconomic status

There have been clear trends between deprivation and excess weight. The Health Survey for England 2022 found that mean BMI among adults was greater in more deprived areas, increasing from 26.7kg/m^2 in the least deprived to 28.4kg/m^2 in the most deprived quintile of multiple deprivation.[12] Both the prevalence of obesity and overweight (including obesity) were higher in more deprived areas. For example, 22% of adults in the least deprived quintile were living with obesity, compared with 36% of those in the most deprived quintile.

This is supported by data from OHID, where they have found that the prevalence of overweight (including obesity) and obesity is highest in those living in the most deprived areas (71.2% and 37.4% respectively) and lowest in those living in the least deprived areas (59.4% and 19.8% respectively).[6] This can be seen in the figure below taken from the Obesity profile report by OHID 2025.



Source: Office for Health Improvement and Disparities (OHID), based on Sport England Active Lives Adult Survey data.

***Figure 3: Prevalence of overweight and obesity by IMD decile**. Source: OHID, Obesity profile: short statistical commentary (2025)[6]*

These socioeconomic disparities are also reflected in multiple studies. Candio et al found that adults with a lower educational qualification, occupational status or living in more deprived neighbourhoods were consistently more affected by excess weight, relative to their less deprived counterparts.[4] Magomedova et al looked at the role of socio-economic deprivation and prevalence of obesity and diabetes type 2 among people aged 16 and over in England and Sweden, based on routine epidemiological data in 2021-2024.[13] They found that for both countries, there were positive associations between socio-economic deprivation and prevalence of obesity and diabetes. There was a linear relationship between increasing deprivation and prevalence of obesity and type 2 diabetes.

Using HSE data from 2009-2029, Mujica et al looked at the use of the Foster-Greer-Thorbecke (FGT) index to monitor health inequalities.[14] They found with this index, excess weight inequalities have steadily increased in the English adult population, especially over the last five years. They also found that, unlike the rest of the population, the average overweight adult from the most socio-economically deprived group is either obese (30.3 BMI for females) or at the brink of obesity (29.1 BMI for males) which reflects a deepening divide in obesity severity between communities.

Children's weights are similarly affected by deprivation. In children, there is a strong correlation between obesity and level of deprivation, with children living in the more deprived areas experiencing a higher prevalence of obesity.[5] The Index of Multiple Deprivation (IMD), is used as a measure of relative deprivation for small areas. The small areas are divided according to their deprivation rank into 10 equal groups (deciles), ranging from the most deprived areas (decile 1) to the least deprived areas (decile 10). Using postcodes, the prevalence of obesity was more than double among reception children living in the most deprived areas (14%) compared with children living in the least deprived areas (6.9%), and the prevalence of severe obesity was around three times as high among reception children living in the most deprived areas (4.6%) compared with children living in the least deprived areas (1.5%). The prevalence of obesity in reception also appeared to increase as the IMD reduces, as seen in the figure below by Fingertips.[5]

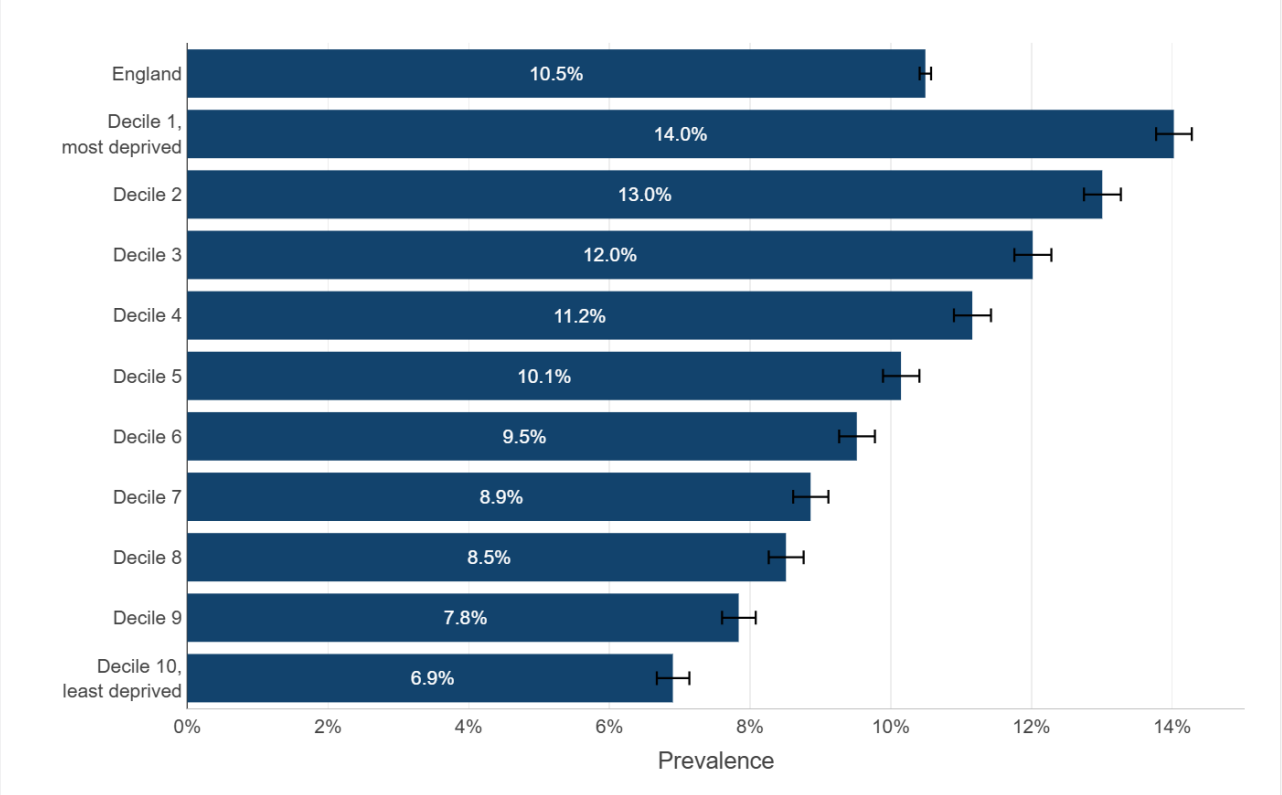
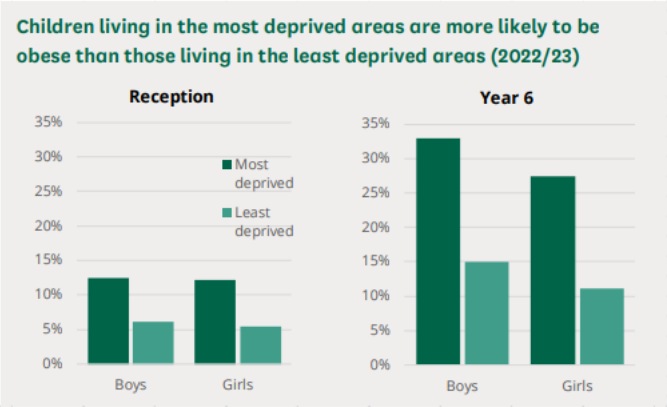


***Figure 4: Obesity prevalence in Reception by IMD decile**. Source: Fingertips National Child Measurement Programme annual report, academic year 2024 to 2025**,** using DHSC analysis of NCMP data.*[5]

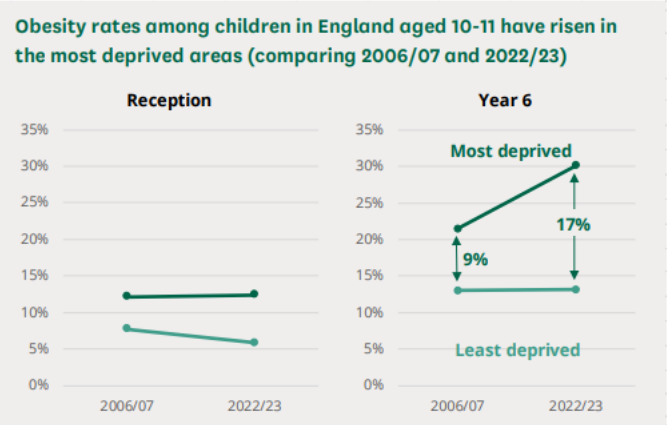
These numbers are not new. In 2022/23, 5.8% of children aged 4-5 living in the least deprived decile of areas of England were obese according to the Obesity Statistics 2025 Report.[1] This compares with 12.4% of those living in the most deprived decile. In year 6, 13.1% of children living in the least deprived areas were obese, compared with 30.1% in the most deprived areas. In both age groups, children in the most deprived areas were approximately twice as likely to be obese. Rates of severe obesity were around four times higher in the most deprived areas.

More worryingly, the obesity gap between the most deprived and least deprived areas has increased in the last 15 years. This is particularly pronounced among year 6 children, where obesity rates in the most deprived areas have risen by nine percentage points but have remained almost unchanged in the least deprived areas. This is reflected in the figures below taken from the report, which shows differences in levels of obesity between boys and girls at reception and year 6.



Source: NHS Digital, National Child Measurement Programme 2023/24, Tables 6a_R and 6a_6

Figure 5a: Obesity rates in children in the least and most deprived areas. *Source: Stiebahl, S. Obesity Statistics (2025).*[1]



Source: NHS Digital, National Child Measurement Programme 2022/23, Table 6c

Figure 5b: Obesity rates in children in the least and most deprived areas in 2006/7 and 2022/23. *Source: Stiebahl, S. Obesity Statistics (2025).*[1]

The UNICEF UK committee produced a report in June 2025 on the impact of deprivation on childhood.[15] They used national data on measurements of early childhood outcomes in upper tier local authorities and compared them against each area's level of deprivation and child poverty. They found that obesity levels for reception aged children in the most deprived areas are more than double those of children in the most affluent areas (12.9%, compared to 6%), and all 10 areas with the highest proportion of children overweight/obese are in the most deprived 2 quintiles. Meanwhile all 10 areas with the lowest proportion of children overweight or obese are in the most affluent quintile. Nearly a quarter (24%) of reception-age children in the most deprived areas are overweight or obese, compared to 20% of children in the most affluent areas.

Broadbent et al also looked at trends in inequalities in childhood overweight and obesity in England.[16] They used data from the HSE between 1995 and 2019 and how this compared to data from the NCMP. They found marked and widening socio-economic inequalities in children from higher deprivation areas, non-white children and those from non-degree-educated or single-parent households, where there were rising prevalences of obesity and overweight. Although there have been declining response rates to the HSE, and a smaller sample size, which may limit the reliability of

their data, their findings were consistent with NCMP data on the overall picture of socio-economic inequalities in children and being overweight or obese.

A research report by the Nuffield Trust in 2022 looked at whether childhood obesity was associated with where people lived.[17] Local authorities with the highest percentage of children living in low-income families had, on average, 6.9% more overweight or obese Year 6 children than those with the lowest percentage. Local authorities with the highest percentage of under-fives living in households in receipt of out-of-work benefits had, on average, 3.5% more overweight or obese Reception children than those with the lowest percentage. Additionally, areas where there was a greater percentage of the population from minority ethnic backgrounds were more likely to have higher levels of year 6 children who were overweight or obese. They found that overweight and obesity levels among children at the upper-tier local authority level in England are likely to be higher in areas where there is more child poverty, poorer access to places for children to engage in physical activities and where fewer adults undertake physical exercise, and lower breastfeeding rates.

Wilding et al aimed to examine how environmental area characteristics at birth are related to outcomes of obesity and overweight in childhood.[18] Their main finding was that local access to natural greenspaces at the time of birth was inversely associated with becoming overweight or obese by age 10–11, regardless of migration. They adjusted for confounders of maternal BMI, age, education, ethnicity, smoking at the start of pregnancy and parity, acknowledging that area exposure at birth is affected by maternal ethnicity, employment, parity, age and education, because disadvantaged populations tend to reside in the most challenging environments. This means the types of areas mothers lived in during pregnancy will have affected their BMI, and their children will likely be born into areas with similar characteristics. They suggested that increased access or protection of greenspace may have a role in the early prevention of childhood obesity.

Mireku et al looked at whether family income gradients in obesity, overweight, and adiposity persist at geographic-level deprivation quintiles, using data from the MCS.[19] Among adolescents in the England sub-cohort, the prevalence of obesity and overweight increased with increasing level of geographic-level deprivation. Likewise, the percentage of body fat increased with increasing level of geographic deprivation. Adolescents in the lowest family income quintile had 2.4 times higher risk of being obese compared to those in the highest income quintile. They found family income gradients in the risk of adolescent obesity, overweight and adiposity were all statistically significant. They also found that family income gradients in the risk of adolescent obesity persisted for both the least and most deprived quintiles of geographic-level deprivation.

Staatz et al aimed to assess how inequalities in body composition develop with age.[20] They used data from the MCS and found that inequalities in Fat Mass Index (FMI) and Fat Mass (FM): Fat Free Mass (FFM) ratio are evident at 7 years old and widens with age. Children and young people (aged 7–17 years) growing up in disadvantaged circumstances had higher fat mass levels compared to their more advantaged counterparts, and the differences increased with age. They suggest that childhood and adolescence is an important period to address inequalities in body composition as this is where the gaps start widen.

There also exists an obesity paradox with food insecurity. Food insecurity not only refers to the lack of access to acquire food, but includes its nutritional quality and food safety.[21] Eskandari et al found in their meta-analysis an overall small but statistically significant association between food insecurity and obesity, and highlighted that obesogenic food environments and food insecurity significantly contribute to obesity.[22] They also observed that BMI is significantly higher for those who acquire their foods form charitable sources such as food banks, and suggest implementing policies and

efforts to improve the nutritional quality of food parcels to help food bank users to meet their individual dietary needs. Other studies have found associations between food insecurity and excess weight, for example, Gianfredi et al found a significant association between food insecurity and increased odds of obesity among older adults, with a particularly strong relationship observed for abdominal obesity.[23] After adjusting for several potential confounders, food-insecure individuals had higher odds of obesity and abdominal obesity, although no association was found with the waist-hip ratio.

The Hunger in the UK report found that people living in the most deprived areas faced a far higher risk of hunger, with households in the most deprived areas of the UK being three times as likely to be food insecure than households in the least deprived areas (27% vs. 9%).[24] A child growing up in the most deprived areas of the UK was twice as likely to be in a food insecure household than a child growing up in the least deprived areas. This means individuals may end up using energy-dense foods to help meet daily caloric requirements but miss out on essential nutrients. As a result, undernutrition and obesity can coexist, and both can be consequences of food insecurity. Food insecurity will be further explored later in the Nutrition inequalities section.

Together, these reports paint a picture of the current disparity between socioeconomic position and levels of overweight and obesity, reflecting the widening inequalities over time and with age. Capoccia et al lists several theories on how social factors such as socioeconomic status, cultural practices, and adverse early life experiences can influence the risk of obesity.[2] This includes Life Course Theory where the accumulation of disadvantage over time is the source of weight gain, as negative exposures in life experiences accumulate to produce increasingly negative outcomes. The Fundamental Cause Theory suggests that social factors including stigma and racism are key drivers that influence access to resources that would prevent diseases such as obesity. The Healthy Lifestyle Theory suggests that health behaviours are shaped by the social environment and resources available to an individual, which is influenced by social determinants, while the Cultural Capital Theory suggests that children's food preferences and dietary adherence are primarily influenced by their family's cultural background and resources.

4.4.6 Disability and long term illness

Inequalities also exist within disability and long-term illness. Data from the Active Lives Survey show that adults with disabilities have an excess weight prevalence of 10% higher than those without disabilities.[1] In their study, Candio et al also found that a long-lasting illness status was the single strongest independent factor contributing to excess weight inequalities in the English adult population, particularly in women.[4]

4.4.7 Early life and parental factors

Various studies have also drawn a link between early life, parental income and parental education for risk of becoming overweight/obese. In the HSE, children's overweight and obesity was strongly related to that of their (legal, co-habiting) parents.[12] Among children whose mothers were a healthy weight or underweight, 7% were living with obesity and 19% were overweight or living with obesity. This compares to children whose mothers were overweight or living with obesity, where 20% of children were living with obesity and 32% were overweight or living with obesity. Among children whose fathers were a healthy weight or underweight, 4% were living with obesity and 10% were overweight or living with obesity. This compares to children with fathers who were overweight or

living with obesity, where 12% were living with obesity and 26% were overweight or living with obesity. Capoccia et al also states that parental income and education are key determinants of childhood obesity risk, with parental education having the strongest predictive value.[2]

Kilpi et al looked at how different aspects of early-life socioeconomic circumstances are associated with depression-overweight comorbidity from adolescence to young adulthood.[25] They looked at data from 4948 participants in the Avon Longitudinal Study of Parents, using data from adolescents coming of age in the UK in the 2000s. They found that early-life parental socioeconomic circumstances were associated with depression, overweight and their comorbidity in adolescence and young adulthood. Parental education, social class and financial difficulties were all risk factors for comorbidity, and generally stronger for comorbidity than depression only or overweight only.

White et al conducted a study in six high-income countries, including the UK, to look into the relationship between early childhood socioeconomic status (SES) measured by maternal education and household income and the subsequent development of childhood overweight and obesity.[26] They observed social gradients for the risk of obesity, particularly with maternal education, which was seen in all cohorts, where low maternal education had a pooled relative risk of 2.99. They found that the SES associations measured by income were more variable in Sweden compared to other nations, where Sweden had the lowest risk ratios of obesity by income. They proposed these findings may be attributed to policy differences, including preschool policies, maternity leave, a ban on advertising to children, and universal free school meals which are seen in Sweden.

Nightingale et al assessed the impact of sociodemographic and early-life course predictors of being overweight or obese at 16, being overweight/obese/severely obese at 42 years of age, and the incidence of a status of being overweight/obese/severely obese between 16 and 42 years of age.[27] This study spanned the years before and after the marked increases in obesity prevalence in the UK, using data from 1958 until the most recent sweep in 2020. Initially they recruited 17,415 individuals born in England, Scotland or Wales. It is worth noting that the childhood experiences of this cohort would be different from that experienced by children in the 2020s, and the levels of obesity were not as high as at present. During the childhood period of the cohort, most households lacked basic facilities, and breast-feeding and maternal smoking were common. They observed a strong influence of maternal obesity for being obese/severely obese compared to being overweight across the three models. Maternal smoking on all three outcomes was also statistically significant. There were also associations between sex, maternal factors (BMI, smoking, mode of delivery), father's socio-economic position, and being overweight at 16 years of age (in 1974). Higher odds ratios were observed for females, for increasing maternal age, for mothers who smoked 10 cigarettes or more per day (compared to those who did not smoke), for caesarean-labour-delivery (compared to normal delivery), and for maternal obesity (compared to the mothers being healthy or underweight). The odds ratio of 4.33 for maternal obesity was the largest amongst the variables considered. They comment that a possible explanation for the finding on caesarean-labour-delivery is that mothers who are overweight and with gestational diabetes often require caesarean sections and their babies are likely to be overweight. Overall, they found that these identified early-life risk factors predicted both prevalent obesity at age 16, and incident obesity between ages 16 and 42. They suggest that sociodemographic and early-life risk factors could be used to target obesity prevention programmes for children and adults.

From these studies and reports, it can be seen that early life and parental factors play an important role in future risk of becoming overweight/obese, and this is something to be considered when developing obesity prevention strategies.

4.5 Inequalities in nutrition

4.5.1 Which groups are at risk of experiencing poor nutrition?

There is growing evidence that that poor nutrition in the UK is influenced by socioeconomic, ethnic, and environmental inequalities. Barriers which individuals from disadvantaged backgrounds may face throughout their life have been identified, which can reduce their access to healthy foods and increase the risk of poor nutrition and the health outcomes associated with this.

One study aimed to explore the relationship between diet quality and its association with socioeconomic and demographic characteristics, smoking status, and weight status in a large UK adult cohort.[28] They obtained dietary data from 43,023 participants, with valid scores from 95.8% of this sample. The mean age of responders was 47 years, and limitations include the cohort not being a random sample, but largely self-selected. Their main findings were that females, nonsmokers and those living in areas of lower deprivation yield the highest scores, indicative of a dietary pattern that is better quality. Meanwhile men, smokers, younger people, and those in lower socio-economic groups were most at risk from diet related ill health. Being obese or underweight were also associated with lower diet quality. Their findings indicate that diet quality is unequally distributed in the population and there are areas that may benefit from targeted resources and interventions to prevent diet-related ill health.

Consistent themes associated with poor nutrition include socioeconomic status (SES), food insecurity, ethnic inequalities, early-life circumstances and the food environment, which will be explored in further detail.

4.5.2 Deprivation and socioeconomic status

Socioeconomic status and deprivation play a major role in nutritional inequalities, with several influencing factors in this group. We will look at diet quality within household income and deprivation, vulnerable groups and those experiencing food insecurity.

a) Household income and deprivation

In a Parliamentary research report on diet-related health inequalities, it was acknowledged that there is a well-established relationship between socio-economic status and the quality of diets consumed.[29] Household income is positively associated with intake of healthy foods and micronutrient intake, and negatively associated with intake of unhealthy sugar-sweetened drinks. Children from lower income backgrounds tend to eat less fibre and are less likely to consume adequate levels of several micronutrients. Irregular eating patterns are more likely in lower income households, particularly not eating breakfast. Children living in low income households are more likely to skip or consume poor dietary quality breakfast. Consumption of takeaway and fast foods, which are linked to an unhealthily high content of salt, sugar and fat, are more common in middle and low income households.

The Food Foundation have also reported that to afford the government recommended healthy diet, The Eatwell Guide, the most deprived fifth of the population (without children) would need to spend 45% of their disposable income on food.[30] This reflects that for many people a healthy diet is financially out of reach, especially those living in higher levels of deprivation. Meanwhile the least deprived fifth of households without children only need to spend 11% of their disposable income. According to UNICEF UK, for households with children, the most deprived quintile of households would have to spend 70% of their disposable income on food to adhere to the government's Eatwell

guidance, compared to 6% of disposable income for the least deprived households.[15] They also found that young children who live in areas of deprivation are more likely to have diets high in saturated fats, salt and sugar. The Food Foundation has found that healthier food options are on average twice as expensive per calorie as less healthy options, putting them financially out of reach for many low income families and making them a less appealing option for those with more means.

Their analysis of the latest National Diet and Nutrition Survey also shows that children across all income groups are consuming significantly lower amounts of healthy foods, and significantly more unhealthy foods than recommended for good health. On average, children aged 12-18 years old consume less than half of the recommended five portions of fruit and vegetables per day and more than double the recommended daily allowance of free sugars, accounting for 11.8% of total daily calorie intake on average, compared to the recommended maximum of 5%. The percentage of calories from saturated fat also exceeds the recommended daily maximum of 10%, with an average intake across all children of 13.1%. However, there is a stark income gradient for several healthy food groups and nutrients, including fruit and vegetables and fibre consumption, which are all significantly lower in the most deprived groups. Children from the most deprived income quintile consume 20% less fruit and vegetables than the least deprived income quintile. While consumption of fibre is also well below the recommended daily intake for all groups, the most deprived income quintile consumes 17% less than the least deprived quintile.

The proportion of fast-food outlets also remains much higher in more deprived areas.[30] The proportion of fast-food outlets among all food outlets decreases as level of deprivation decreases between quintiles, with 30.6% of places to buy food being fast-food outlets in the most deprived fifth of areas, compared to 21.8% in the least deprived fifth of areas.

When Magomedova et al looked at the role of deprivation and developing type 2 diabetes and obesity, they also found that in areas with higher deprivation status, prevalence of obesity and diabetes type 2 have lower daily consumption of fruits and vegetables compared to areas with good socio-economic conditions.[13]

Smith et al investigated the impact of deprivation and neighbourhood food environments on home food environments between 2021-2022 in London.[31] In this study, family deprivation, rather than neighbourhood food environments, was more strongly linked to obesogenic feeding practices, child eating behaviours and childhood BMI. The London-based sample showed that greater deprivation was related to living in a less healthy neighbourhood and home food environment, and more frequent use of non-nutritious and less structured caregiver feeding practices. Children from more disadvantaged backgrounds expressed both a greater compulsion to eat in response to external food cues, and a stronger desire to consume drinks.

Another review looked at the barriers and facilitators to healthy diet encountered by disadvantaged UK adults.[32] Overall, those in the most deprived quintile consume 37% less fruit and vegetables, 54% less fish and 17% less dietary fibre as compared to those in the least deprived quintile. They found that low educational attainment was identified as a barrier and conversely, higher levels of education were identified as a facilitator. Limited knowledge regarding foods such as nutritional value or knowledge about sugar were also identified as a barrier, while having adequate knowledge of healthy meals was found to facilitate healthy eating. Low cooking and food preparation skills as well as low self-efficacy were found to be barriers. Self-affirmation and a high degree of self-esteem were found to facilitate healthy food choices. High cost of healthy food and low cost of unhealthy foods were also identified as barriers, whereas charitable meals and interventions that targeted cost such as

healthy start vouchers, enabled healthier diets. Accessibility was also an issue regarding both shop accessibility, as well as poor accessibility of healthy foods and high accessibility of unhealthy food options. They suggest that the vast majority of barriers can be classed as part of the environmental context and resources domain, and that in order to encourage healthy eating in disadvantaged individuals, the focus should be on enabling, restricting, and restructuring the environment.

Another study investigated individual-level and area-level measures of SES and adherence to dietary recommendations, using 501,897 individuals within the UK Biobank cohort.[33] They found that compared to those with a high adherence to a healthy diet, the group with low adherence included a higher percentage of younger participants, predominantly men, who were more likely to be obese and current smokers. This group also generally had lower educational qualifications and a marginally higher prevalence of comorbidities. Among the three measures of socioeconomic status - education, income, and area deprivation - low education emerged as the strongest factor associated with lower adherence to a healthy diet. When compared to individuals with the highest educational level, those with the lowest education were found to be 38% less likely to adhere to a healthy diet, and participants from the most deprived socioeconomic group had a 13% lower likelihood of adhering to a healthy diet. Individuals with the lowest income were 23% less likely to maintain a healthy diet. Their analysis revealed that overall individuals with the lowest education and residing in the most deprived areas were 49% less likely to adhere to a healthy diet compared to those with the highest educational level and living in the least deprived areas. However, high adherence to a healthy diet was observed among individuals with a high educational level, regardless of their income level or where they resided.

A scoping review by Gale et al looked at fish consumption in the UK with a focus on its consumption in disadvantaged communities.[34] Fish is an important part of the government's Eatwell guidance and has been found to have important health benefits. They found that low SES and area-level deprivation shape the fish-eating patterns of disadvantaged communities, with people from lower SES groups being more likely to be non-fish consumers and eating less fish or seafood than their higher SES counterparts. In contrast, the higher the education and occupational level, the higher the likelihood of a person to consume fish. They concluded that education level seems to play the most important role for fish consumption, with oily fish consumption increasing by education and occupational levels, which may impact the skills and confidence to prepare and cook it.

b) Vulnerable groups

Vulnerable groups, for example those who are homeless, claiming asylum, or sex workers, are likely to be nutrient deficient and are at higher risk of ill-health.[29] Disability is also associated with being severely food insecure.[29] Of those households with individuals limited by disabilities, almost half experienced food insecurity in September 2022.

Hadfield-Spoor et al used data from the UK's Food Standards Agency's Food & You survey (F&Y) to look at disability and food insecurity among adults.[35] The number and type of disabilities were associated with a higher risk of food insecurity. A combination of physical and mental/cognitive disabilities, as well as having multiple disabilities, were each independently associated with a higher risk of food insecurity. This has implications for quality of diet (see section on Food Insecurity).

Style et al studied the nutritional status of people experiencing homelessness (PEH) by assessing those in temporary residences in London.[36] They found PEH had a high risk of malnutrition and experienced dietary inequalities related to poor diet quality and severe food insecurity. They

recruited two hundred participants and found 60% had a risk of malnutrition. Half of the participants were living with a healthy BMI (n = 101, 50.5%), over a quarter lived with overweight (n = 52, 26.0%), and a smaller proportion lived with underweight (n = 20, 10%), and obesity (n = 27, 13.5%). The median Diet Quality Score (DQS) was also found to show overall low dietary quality.

c) Food insecurity

As discussed earlier, food insecurity refers to unreliable access to nutritionally adequate and safe foods. Food insecurity is also seen to be associated with obesity and a less nutritious diet. Individuals at most risk of food insecurity tend to be lone parents, low-income households, those with low educational attainment, those living with disabilities ill health or caring for someone with a disability and individuals in receipt of benefits.[37] Yau et al aimed to estimate food insecurity prevalence among UK adults and its associations with socio-demographic characteristics, diet and health.[38] They found that food insecure adults had lower odds of consuming fruits and vegetables, and higher odds for fruit juice, compared to food secure adults. Food insecure adults also had higher odds of reporting unhealthy diets, poor general health, poor mental health, high stress and overweight. They found that there is a high prevalence of food insecurity in the UK at 24.3%, especially among some socio-economically disadvantaged groups.

Other studies also highlight the link between food insecurity and poor diet. Keenan et al recruited adults online and at food banks and used questionnaires to explore food insecurity and its links with obesity and diet quality.[39] The sample of 604 participants was mostly female (90%) and white (96%). They found that food insecurity was indirectly associated with higher BMI via greater distress and eating to cope, and food insecurity was directly associated with poorer diet quality, but this relationship was not explained by distress and eating to cope.

Thomas et al studied food insecurity in Universal Credit (UC) claimants.[37] They found that food insecurity was experienced by 84.8% of UC respondents (with 73.8% very low food security). Having a low income, being unemployed, reduced shopping in the week all increased risk of food insecurity. They also found diet quality of working age females was lower, characterised by limited protein sources, minimal fruit consumption and reliance on bread. Food insecurity resulted in a reduction of the quality and quantity of food consumed, with 84% unable to afford balanced meals and 43.6% not eating for entire days in the previous month. This level of food insecurity may be higher in the study population due to targeting of Universal Credit claimants at a time when the cost of living was increasing. Fruit and vegetable intake was low, with more than 16% consuming no vegetables and almost 40% no fruit, however the consumption of grains and in particular white bread, was significantly higher for UC recipients than all other groups. The energy derived from white bread (14.4%) was twice that seen in the typical. They concluded with a sobering picture that reliance on UC during the period covering the end of 2021 to early 2022 almost guaranteed food insecurity, with nearly half of the population driven to starve for entire days. The driver of such desperate “decisions” was poverty and participants felt impotent to make substantive changes to their diets due to poverty.

4.5.3 Ultra processed foods (UPF)

There is a growing body of evidence that the consumption of ultra-processed foods (UPF) increases the risk of obesity. UPFs can also vary in their nutritional content. Rauber et al studied the associations between UPF consumption and risk of obesity among UK adults using the UK Biobank.[40] They found that participants in the highest quartile of ultra-processed food consumption had a

significantly higher risk of developing overall obesity and abdominal obesity. Compared with the first quartile (lowest consumption), participants in the highest quartile of ultra-processed foods intake were younger, were more likely to live in the most deprived areas and had never smoked, had lower physical activity levels and had higher mean BMI and waist circumference.

These patterns of obesity were also seen by Chang et al, who looked at whether consumption of UPF in childhood was associated with worse adiposity trajectories tracing into early adulthood.[41] They followed The Avon Longitudinal Study of Parents and Children (ALSPAC) birth cohort and invited children to a total of 10 clinic assessments almost annually from 7 to 17 years of age, and then at 24 years of age to assess adiposity, with a 3-day food diary to complete. Their findings suggested that higher UPF consumption is associated with greater increases in adiposity from childhood to early adulthood. By 24 years of age, children with the highest (vs lowest) UPF consumption were observed to have greater BMI, greater fat mass index and greater body fat percentage.

Brody et al aimed to characterise UK adolescents' UPF dietary patterns and their relationship with SES, using data from the National Diet and Nutrition Survey 2008-2019.[42] There were three clusters within the data. The UPF intake for these clusters was described and interpreted as three dietary patterns, which were labelled as 'Restrictive,' 'Traditional' and 'Permissive.' Adolescents in the Restrictive cluster had a higher consumption of breakfast cereals, meat alternatives and yogurt and lower consumption of most other UPF sub-types. Adolescents in the Traditional cluster had high intakes of sweet baked goods, industrial desserts, industrial bread, margarine and other spreads, reconstituted meat products and packaged preprepared meals, while having a lower-than-average intake of dairy alternatives, meat alternatives, meal replacements and sports foods and milk-based drinks. Consumption patterns in the Permissive cluster had the highest amount of UPF and were characterised by higher intake of chips and fried potatoes, coated poultry and fish, hamburgers and kebabs, packaged pre-prepared meals, crisps and savoury snacks, soft drinks, fruit drinks and juices, chocolate confectionery and sugar confectionery, but lower-than-average consumption of breakfast cereals, crackers and savoury biscuits, dairy alternatives, industrial breads, margarine and other spreads, meat alternatives, mixes and yogurt.

The Permissive diet was associated with individuals of a lower SES, as indicated by higher likelihood of adolescents with parents who had never worked or were living in social housing belonging to this cluster. They found that adolescents of lower SES have both higher overall levels of UPF consumption and are more likely to consume ready-to-eat, high in fat, sugar and salt (HFSS) and UPF across meal contexts. In contrast, the Restrictive pattern was most associated with individuals of a higher SES, where adolescents were more likely to belong to this cluster if they had parents in higher managerial, administrative and professional occupations and were living in homes owned by their families. The Traditional dietary pattern had less distinct connections to SES. However, this pattern was associated with younger, male adolescents and was less common amongst adolescents from other, non-White ethnic groups. They concluded that SES can impact both the amount and type of UPF consumed by adolescents in the UK.

4.5.4 Ethnicity

The Department for Digital, Culture, Media and Sport published data on fruit and vegetable intake among different ethnic groups in 2022.[43] White British adults (34.4%) were the most likely out of all ethnic groups to eat 5 a day, while the percentage of adults in the Black, Asian, Chinese, and mixed ethnic groups who ate 5 a day was lower than the national average.

There are also differences among teenagers. The Health and Social Care Information Centre (HSCIC) ran a survey in 2014 to collect data on a range of health behaviours amongst 15 year olds, including general health and diet.[44] Their data revealed that in 2015, 52.4% of 15 year olds ate 5 portions of fruit and vegetables a day ('5 a day'). Out of all ethnic groups, 15 year olds in the black (49.5%) and white (51.1%) ethnic group were least likely to eat 5 a day, and the percentage of 15 year olds who ate 5 a day was higher than the national average in the 'other' (64.9%), Asian (60.3%) and mixed (55.8%) ethnic groups.

Shah et al looked at differences in fruit and vegetable intake and food insecurity between Black African and Caribbean and South Asian (Indian, Pakistani and Bangladeshi) ethnic minority groups compared with a White British/Irish reference population in the UK.[45] They used a food frequency questionnaire (FFQ) asking how many times per week participants consumed each of certain foods. They found that ethnic differences in fruit and vegetable intake are at least partially explained by socioeconomic status, with African, Caribbean, Bangladeshi and Pakistani groups consuming less than the White British/Irish population, while intake among the Indian groups was comparable. Overall food insecurity was more prevalent in all ethnic minority groups (except Indians) and associated with lower vegetable and fruit intake.

While different ethnic groups can have different dietary patterns according to their culture, which can influence the nutritional intake, these findings reveal there are some disparities between ethnic groups in their diets, particularly with fruit and vegetable intake.

4.5.5 Early-life circumstances

Early-life circumstances may also have an impact on diet, and there have been studies suggesting that parental socioeconomic status and education can influence future dietary habits. Heuchan et al investigated socioeconomic patterning of UK toddlers' (aged 21 months) and children's (aged 7 years) UPF intake across several household and neighbourhood indicators.[46] They found that UK children from more disadvantaged backgrounds consumed a greater proportion of their energy from UPF. Maternal education seemed to be the most influential factor, and they suggested this may drive disparities in diet quality and associated health outcomes. They did note that their study did not distinguish between different types of UPF, and it is possible the types of UPF consumed by children varied by socioeconomic status. Diet quality was also not examined.

Braune et al looked at the trajectories of fruit and vegetable intake across early adulthood (16–30 years), in the UK and Australian populations.[47] They were interested in early adulthood, which marks a period for the establishment of adult dietary patterns as well as the potential emergence of dietary inequalities. They found that in both cohorts, individuals with parents who had a degree consumed more fruit and more vegetables than those with parents educated below degree level. Overall, female participants and individuals whose parents had a degree consumed more fruit and more vegetables in both countries. They concluded that childhood socioeconomic status, predicted via parental education, is critical in predicting young adult diet quality.

On the other hand, Tao et al examined the contribution of the transitional period of early adulthood (ages 16–24 years) to socioeconomic inequalities in adult diet quality.[48] They found that the continued education class showed the best diet quality at age 46 years, while little difference in diet quality was found among the remaining socio-economic classes. They also observed that the association between the continued education class and adult diet quality was independent of

parental socioeconomic status in childhood and was largely not mediated by household income or neighbourhood deprivation in mid-adulthood. They found early adulthood represented a sensitive period for intervention to alleviate dietary inequalities in later life, where early adulthood socioeconomic trajectories contributed to adult diet quality independent of childhood and adulthood socioeconomic status, with continuing education between ages 16 and 24 years associated with better diet quality at age 46 years.

This highlights the complex interplay between various socioeconomic factors in a child's upbringing and education that may go on to influence their diet quality in later adulthood. It is still important to take these factors into consideration when planning interventions to improve nutrition among the younger populations.

4.6 Summary

The evidence reviewed demonstrates clear and persistent inequalities in overweight, obesity, and nutrition across England. These inequalities are seen across socioeconomic status, age, gender, ethnicity, disability, early-life circumstances and environmental factors.

We have seen that excess weight remains highly prevalent and affects both adults and children. Deprivation is seen as a strong driver of inequalities with adults and children living in the most deprived areas experiencing significantly higher rates of overweight, obesity, and severe obesity. The gap between the most and least deprived areas also continues to widen, particularly in older children.

Ethnicity has also been seen to shape risk independently of socioeconomic position, where Black ethnic groups experience the highest prevalence of excess weight in both adults and children. Some Asian groups show mixed patterns, with Bangladeshi and Pakistani groups having higher risks of obesity in childhood.

Age also plays a role where middle-aged adults have the highest prevalence of excess weight, while childhood and adolescence are important periods of life for transitioning into weight gain. Early-life and parental influences also play an important role in later obesity risk.

There are gender differences, with men more likely to be overweight, but women more likely to experience obesity and stronger socio-economic inequalities. Disability and long-term illness are also strongly associated with higher prevalence of excess weight.

Inequalities in nutrition also exist, with poor nutrition disproportionately affecting those in disadvantaged circumstances, from socioeconomic status, food insecurity and early life circumstances, to ethnic disparities and environmental factors. Together, these findings highlight a complex and interconnected system of structural, socioeconomic, cultural, and environmental factors that shape weight and nutrition outcomes throughout life, which can contribute to inequalities. It is important to consider all these factors and how they interplay when trying to address inequalities between various groups for tackling overweight/obesity and poor nutrition.

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