



THE BROKEN PLATE 2021

The State of the
Nation's Food System



Ten vital signs documenting the health of our food system, how it impacts on our lives, and why we must change the food environment so that it delivers healthy and sustainable diets for everyone

CONTRIBUTORS

A massive thank you to all of our contributors, without whom *Broken Plate* would not be possible



THANK YOU

Huge thanks to Nye Cominetti, Elena Salazar, Dr Thomas Burgoine, Matthew Keeble, Debbie Bremner, Sonia Pombo, Holly Gabriel, Dr Kawther Hashem, Caroline Hancock, Dr Kate Ellis, Dr Jean Adams and Dr Bernadette Moore for their support and expert analysis.

With special thanks to Dr Carmelia Alae-Carew and Dr Tim Lobstein for their input, analysis and advice as part of this year's report.



WITH THANKS TO

The Nuffield Foundation, for their support in making this work possible.

The Nuffield Foundation is an independent charitable trust with a mission to advance social well-being. It funds research that informs social policy, primarily in Education, Welfare, and Justice. It also funds student programmes that provide opportunities for young people to develop skills in quantitative and scientific methods. The Nuffield Foundation is the founder and co-founder of the Nuffield Council on Bioethics, the Ada Lovelace Institute and the Nuffield Family Justice Observatory. The Foundation has funded this project, but the views expressed are those of the authors and not necessarily the Foundation. Visit www.nuffieldfoundation.org



FOOD FOUNDATION AUTHORS
Rebecca Tobin, Shona Goudie, Isabel Hughes



REPORT DESIGN
whitecreativecompany.co.uk

FOREWORD

'We're all in this together' was a frequently cited mantra in the early days of the Covid-19 pandemic. Except, as it turned out, we weren't. Covid-19 not only shone a spotlight on a number of pre-existing inequalities in the UK but served to further exacerbate many of them.

People living in the most deprived communities were around four times as likely to die from Covid-19 over the course of the pandemic as those living in the least deprived areas (Resolution Foundation, 2021). Risk of dying among those diagnosed with Covid-19 was also higher in those in Black, Asian and Minority Ethnic groups than in White ethnic groups (Public Health England, 2020a). Black, Asian and Minority Ethnic groups were also twice as likely to have experienced food insecurity compared to White households during the pandemic (Food Foundation, 2021). In January 2021, adults identifying as being limited a lot by health problems or a disability were five times more likely to be food insecure than those without, and 10% of households with children reported food insecurity (Food Foundation, 2021). People on low incomes were three times as likely to have been furloughed as high earners and four times as likely to have lost their jobs in the first phase of the crisis (Bell, 2020).

As policymakers and businesses look ahead to the post-pandemic recovery, tackling dietary inequalities, which are often closely linked to other health and economic inequities, has been recognised as a public policy imperative. The Nuffield Foundation is an independent charitable trust whose purpose is to advance social well-being in the UK. We were one of the original funders that established the Food Foundation in 2015 and are pleased to be funding its '*Changing the Story on Dietary Inequality*' programme over the next three years. This programme aims to reshape the public narrative on dietary inequality and be the catalyst for purposeful action by policymakers and businesses.

The *Broken Plate* is the Food Foundation's flagship report and will form a central pillar of its work on dietary inequality. This report highlights how the food environment is skewed towards less healthy options, with healthier foods much less accessible and affordable for those on lower incomes. This in turn leads to disparities between the health of adults and children in lower income households and their wealthier peers. Those living with obesity and nutrition-related chronic diseases such as type 2 diabetes and hypertensive diseases were at greater risk of severe outcomes as a result of Covid-19, highlighting the significant public health impact of poor diets in the UK (Public Health England, 2020a). Through this report, and its broader programme of work, the Food Foundation builds the evidence and connects this data to people's lives, by giving a voice to those experiencing dietary inequality as an everyday reality.

The government's most recent obesity strategy published in July 2020 included proposals to remove price promotions on foods high in salt, sugar and fat, and restrict advertising online. With the publication of part two of the National Food Strategy expected shortly, this is the first time in 75 years that a 'farm to fork' review of England's food system has been undertaken. The *Broken Plate* puts forward the case for why there must be fundamental policy changes in our approach to the food environment if we are serious about improving the nation's health and addressing the wider questions of social well-being that follow from it.

The Nuffield Foundation commends the Food Foundation for the rigour of its research and its impact on public policy and the public debate.



TIM GARDAM
Chief Executive of the Nuffield Foundation.

Introduction

Each year our *Broken Plate* report assesses whether progress has been made against ten metrics, which were selected to provide a holistic picture of the food system, encompassing the food environment, drivers of food choice, and the impact of the food system on our health and the environment.

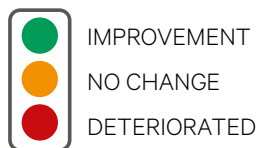
We have organised these metrics into four focus areas, highlighting the changes that are needed if we are to support everyone in being able to eat a healthy diet. Traffic light scores have been assigned to each metric, measuring any progress made over the past year between **Broken Plate 2020** and this year's report.

New in this year's report, we include summaries of the policy interventions which aim to drive progress. The last three metrics assess the health outcomes which stem from our current food environment as a whole, rather than looking at the drivers of poor diets, and we have therefore not included policy summaries in these sections.

This year, we have also included the voices of our **Children's Right 2 Food** Young Food Ambassadors and Peas Please **Veg Advocates** from England speaking about the issues explored within this report. Both groups of citizens support the Food Foundation in our mission to deliver a sustainable food system that creates health and well-being for all by sharing their own thoughts and experiences. We are extremely grateful for their support.

AT A GLANCE

What's changed since 2020's report?



“Location, income can affect your chance of life... And it's just such a shame that we have to live in a country where this is happening.”

YOUNG FOOD
AMBASSADOR



“We need to change the subsidies round, don't we? We need to make the healthy food the easy option and the cheaper option.”

VEG ADVOCATE



THEME
Make healthier options more appealing

● **METRIC 1: ADVERTISING** Advertising spend on fruit and vegetables remains very low, with just 2.5% of total food and soft drink advertising spend going towards fruit and vegetables.



THEME
Make healthier options more affordable

● **METRIC 2: THE AFFORDABILITY OF A HEALTHY DIET** The poorest fifth of UK households would need to spend 40% of their disposable income on food to meet Eatwell Guide costs. This compares to just 7% for the richest fifth.

● **METRIC 3: FOOD PRICES** More healthy foods are nearly three times as expensive as less healthy foods calorie for calorie.

● **METRIC 4: WAGES** 25% of workers in the food sector earn the minimum wage or below compared to 11% of workers across the UK.



THEME
Make healthier and sustainable options more available

● **METRIC 5: PLACES TO BUY FOOD** 1 in 4 places to buy food are fast food outlets. The proportion of fast food outlets is higher in the most deprived local authorities compared to the least deprived.

● **METRIC 6: PRODUCTS WITH TOO MUCH SUGAR** 96% of yogurts and 92% of cereals marketed towards children contain high or medium levels of sugar.

● **METRIC 7: PRODUCTS WITH TOO LITTLE VEG** 22% of ready meals are vegetarian or plant-based, with a welcome drop in price for vegetarian and plant-based meals since last year's survey.



THEME
Act now and address inequalities so that everyone has the chance of a longer healthier life

● **METRIC 8: CHILDHOOD OBESITY** Children in the most deprived fifth of households are almost twice as likely to have obesity as those in the least deprived fifth of households by age 4-6.

● **METRIC 9: CHILD GROWTH** Children in the UK at age 4-5 are on average shorter than children in other comparable high income countries. In England, children living in deprived communities are shorter than children living in wealthier communities by the time they reach age 10-11.

● **METRIC 10: DIABETES** There are almost 10,000 diabetes-related amputations carried out on average per year, an increase of 24% in the past five years.

TRAJECTORY

What does the future hold for the health of children born in 2021?

By the time they're 65 years old, over half of the children born in 2021 will experience diet-related disease which may affect their quality of life. Whether children are born into richer or poorer households greatly impacts on their risk of obesity as well as limiting life expectancy.



xxx
**WORLD'S
→ BEST ←
BURGER**



**ONLY
3.99**



THEME:

Make healthier options more appealing

• METRIC 1: ADVERTISING

Advertising and marketing mean that before we even decide what to eat, we're influenced by mass media. People are constantly confronted with advertising for less healthy foods on social media, online and on TV (ASA, 2018). Evidence shows this has a direct (and indirect) impact on how much we eat (Critchlow *et al.*, 2020). Moreover, children and adults from lower socio-economic groups are 50% more likely to be exposed to ads for HFSS (high fat, salt and/or sugar) foods than those from higher socio-economic groups (Yau *et al.*, 2021). Campaigns like *Veg Power* and ITV's *Eat Them to Defeat Them* have shown that advertising healthier foods can have a positive effect on sales. We need to make it easier for people to make healthier choices by addressing the current imbalance in advertising spend between healthy and less healthy foods.



“What advertisers will do as well is blame individuals for the choices we are making as do the government in a lot of their campaigns. It's like this is your choice, you're making the bad choice and you're choosing these things, but actually that's not what happens, it's not the individuals, it's the subliminal messaging and it's the food environment.”

VEG ADVOCATE



METRIC

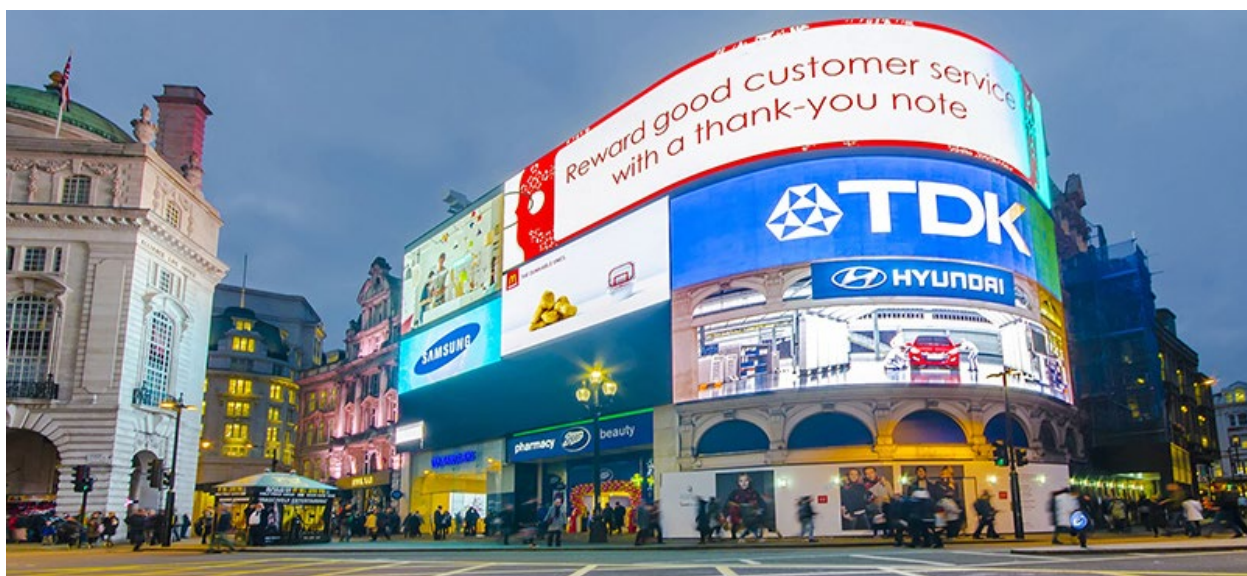
01

Advertising: We need more advertising of healthy foods and to restrict advertising of foods high in fat, salt and sugar

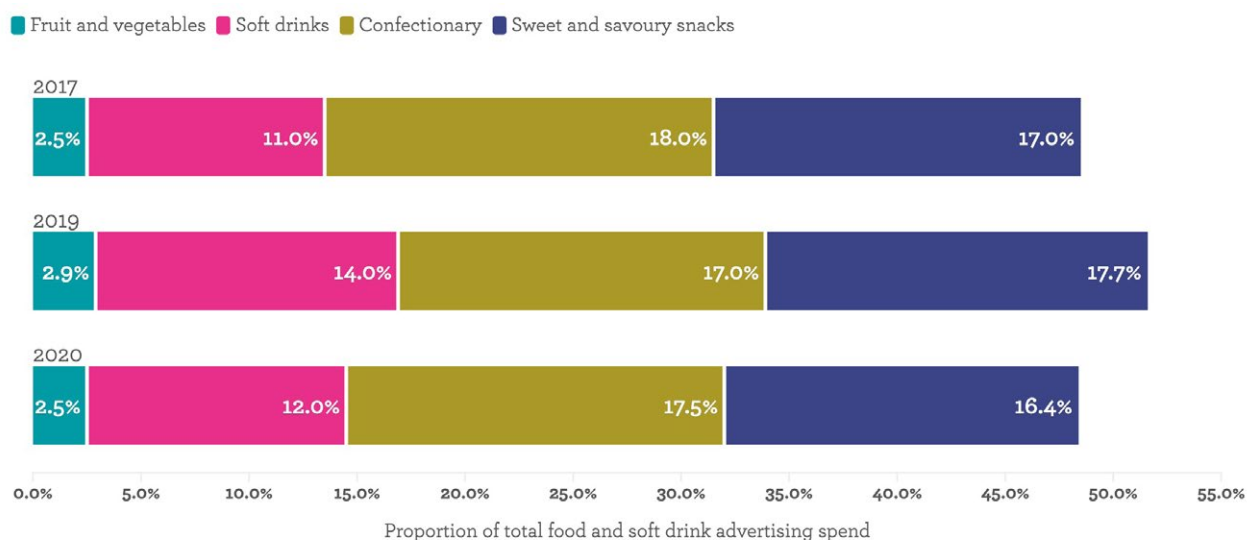
ADVERTISING



Advertising spend on fruit and vegetables remains very low, with just 2.5% of total food and soft drink ad spend going towards fruit and vegetables.



The proportion of ad spend on our four categories over time



Source: Nielsen Ad Intel, 2017;2019;2020

With thanks to **nielsen**



WHAT DID WE DO?

We analysed data on advertising spend in the UK for food and soft drinks (Nielsen Ad Intel, 2020), covering advertising in cinema, direct mail, door drops, outdoor, press, radio and TV. We calculated the percentage of advertising spend on four different categories of food and drink – fruit and vegetables, confectionary, sweet and savoury snacks, and soft drinks – comparing ad spend for the three years between 2017 and 2020 where we have data.

WHAT'S HAPPENING?

Advertising spend on foods high in salt, fat and sugar continues to be much higher than spend on fruit and vegetables. Despite a small but promising uplift in spend on fruit and veg advertising as a proportion of total food and soft drink advertising spend between 2017 and 2019, in 2020 this dropped back down to 2017 levels. Overall, there are no strong trends – spending on each of the four categories as a proportion of total advertising spend has remained much the same over time, with only marginal changes in either direction between 2017 and 2020.

Although proportionally there have not been any major shifts in spend for our four categories, Covid-19 does appear to have impacted on advertising spend for some individual products. Ad spend on home baking and cake mixes increased by 107% between 2019 and 2020, while – perhaps unsurprisingly – spend on popcorn dropped by 82% and spend on party snacks by 60%.

Covid-19 also significantly impacted on total UK ad spend. Advertising revenue in traditional media dropped by an estimated 20% in 2020 (Emarketer, 2020a), in part driven by the closure of cinemas and less Out of Home advertising. Although digital advertising (which is not included here) has risen during the pandemic (Emarketer, 2020b), it is unlikely that the ratio of spend on healthier foods compared to less healthy foods is any different online. Young people aged under 18 in Britain are exposed to an estimated 15 billion online ads for foods high in sugar, salt and fat every year (nearly 500 adverts per second) (Bite Back 2030, 2021).



“Young people during lockdown – we just lived online lives. So while I’m doing online school I’m also seeing ads for Just Eat, Deliveroo, McDonalds, KFC next to me....so 100% it’s only gotten worse over lockdown.” **YOUNG FOOD AMBASSADOR**



IS POLICY SUPPORTING PROGRESS?

In recent years several new policies have been proposed or implemented which aim to reduce advertising for unhealthy food. This is positive, but as most policies in this space are quite recent, we have yet to see their impact.

In 2007 the government limited advertising of junk food on children’s TV channels and during TV programmes ‘directed to or of particular appeal to’ children. Since then the government has consulted on a 9pm watershed on broadcast TV (in 2019) and a total online ban for junk food

advertisements (in 2020). In the 2021 Queen’s Speech the government confirmed that they would be proceeding with both these policies, though formal responses to the two consultations have not yet been published. Some local areas have also taken action. In 2018 the Mayor of London announced that junk food advertising would be banned on the entire Transport for London (TfL) network from February 2019, and in early 2021 Bristol Council announced that they would be restricting advertising for junk food on council-owned spaces and on billboards.



“People can make the choice, but... depending on your income you’re not going to be able to make those (healthier) choices, so it’s trapping everyone into making the same food choices”

YOUNG FOOD AMBASSADOR



THEME:

Make healthier options more affordable

- **METRIC 2: THE AFFORDABILITY OF A HEALTHY DIET**

When we decide what to buy, we're influenced by what we can afford. Many people in the UK have insufficient incomes due to low or precarious wages, as well as high outgoing costs of housing and other essentials. This means that very little money is left over after bills are paid, with the food budget often the easiest one to cut. Skipping meals or opting for the cheapest, most filling options – which are often the least healthy – has to suffice.

- **METRIC 3: FOOD PRICES**

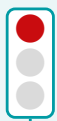
What we decide to buy is often influenced by price. Shoppers routinely say price is the most important factor driving their food choices (IGD, 2015). We need to ensure that people aren't incentivised to buy less healthy food because it is more affordable. We need to rebalance the relative cost of healthy and less healthy foods.

- **METRIC 4: WAGES**

Perhaps ironically, the people who work in the food industry are typically on very low wages. One in seven people had jobs in the food industry before Covid-19 (GOV.UK, 2020), but this sector has one of the highest rates of low paid jobs, in addition to having been heavily impacted by restrictions during the pandemic. Given how important the food industry is for the UK's economy, the people working in it deserve adequate pay.



“And I think even if we have cheaper food compared to the rest of the world, it's not really comparable, in a way because you have to think about what people can actually afford here.” VEG ADVOCATE



METRIC

02

Affordability of a healthy diet:

Ensure that a healthy diet is an affordable diet

AFFORDABILITY OF A HEALTHY DIET



The poorest fifth of UK households would need to spend 40% of their disposable income on food to meet Eatwell Guide costs. This compares to just 7% for the richest fifth.

Percentage of disposable income* used up if the cost of the Eatwell Guide was spent by all households, by income quintile

■ 2017/18 ■ 2018/19



*after housing costs. **Source:** Secondary analysis of the Family Resources Survey, 2017/18 and 2018/19

WHAT DID WE DO?

We used data on household income (Households Below Average Income) from the Family Resources Survey for 2018/19 to look at the affordability of the Eatwell Guide, comparing the data to preceding years. This is the government's official guidance on a healthy diet and includes those foods considered essential for a balanced and nutritious diet. The estimated cost of the Eatwell Guide (£5.99 per day) is based on optimisation modelling previously commissioned by Public Health England in 2016, with optimisation undertaken in order to minimise deviation from current dietary patterns (Scarborough *et al.*, 2016).

We then adjusted this cost based on household composition, as well as economies of scale that might affect the overall cost of food. The proportion of disposable income (after housing costs were removed) that would be used up by the recommended diet was then calculated, in line with previous methodology (Scott, Sutherland and Taylor, 2018). Data were analysed by income quintiles, which provide a more balanced view than income deciles. This is because the lowest income

WHAT'S HAPPENING?

A stark difference is still apparent between the share of disposable income that the lowest income groups must spend on a healthy diet compared to wealthier households. This year we calculate that the poorest fifth of households would have to spend 40% of their disposable income to meet the government's recommended diet, compared to 39% in last year's analysis. Simultaneously, the wealthiest fifth saw the proportion of disposable income which they would have to spend fall from 8% according to last year's analysis to 7% this year – a statistically significant drop. As we have looked at data up until 2019 for this year's report, it remains to be seen what impact the pandemic will have – something we will be exploring in next year's report.



“And I dunno about the rest of you but I’ve got a family and y’know I don’t have a high income but I moan constantly how much of my salary goes on food and y’know it’s a massive proportion...Personally I feel that half of the money I earn goes onto food.” **VEG ADVOCATE**

decile is made up of a diverse group of people, including some with little or no income as well as some in less precarious financial situations who may be between jobs or living on savings. Unfortunately, it is not possible to further segregate this group by socio-economic status. People who are homeless, sleeping rough or in institutional settings are not included in the Family Resources Survey.



IS POLICY SUPPORTING PROGRESS?

Several existing government schemes seek to make healthy food more accessible to those living on a low income. These include the Healthy Start scheme (Best Start Foods in Scotland), the School Fruit and Vegetable Scheme (England only), Free School Meals, and the Holiday Activities and Food programme (England only). Despite these measures, the data presented here show that a healthy diet remains out of reach of many. A major challenge is that the cost of a healthy and sustainable diet is not currently accounted for by the government when setting benefits levels and minimum wage levels.

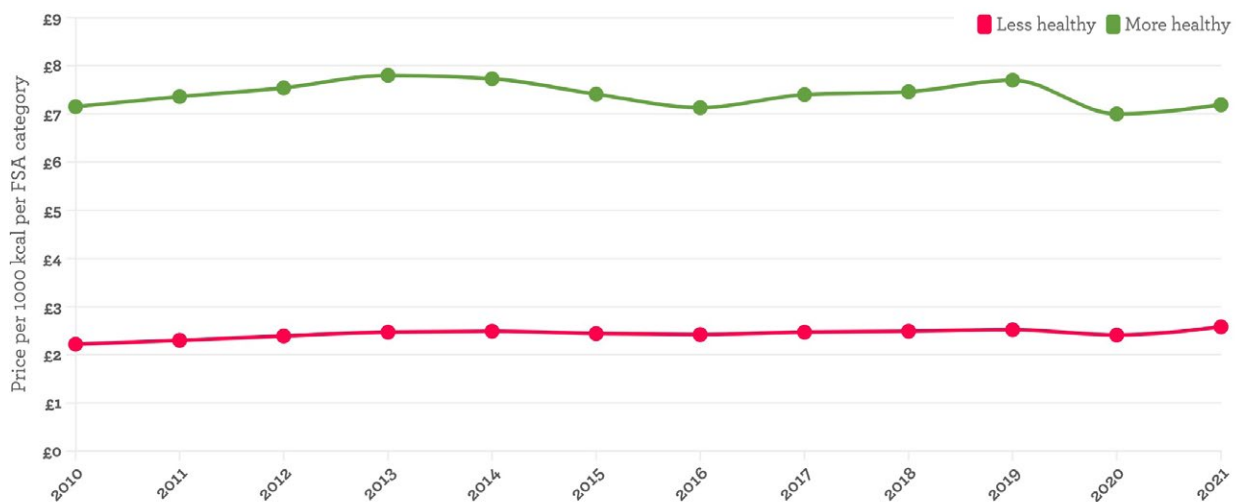


FOOD PRICES



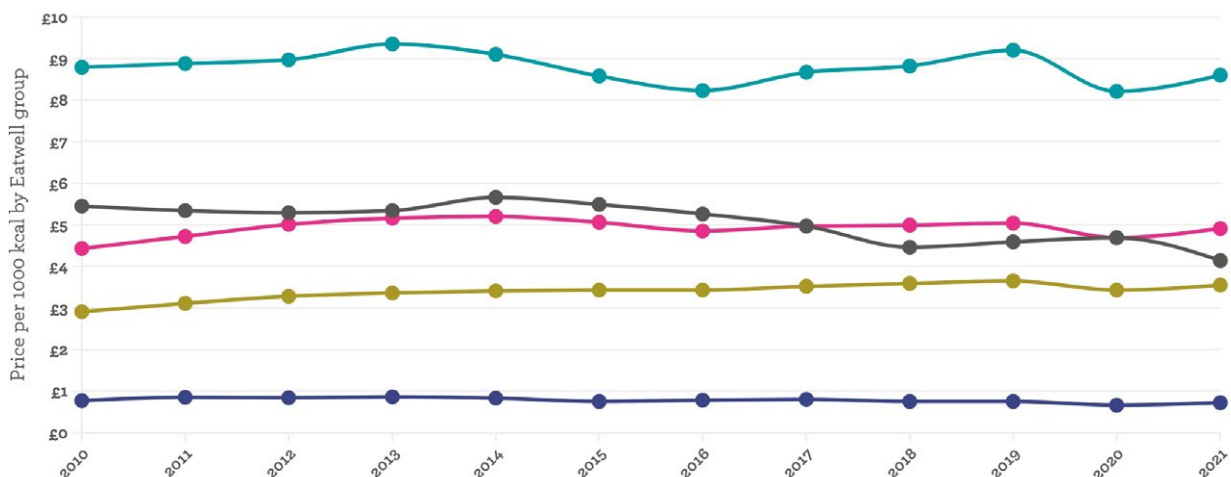
More healthy foods are nearly three times as expensive as less healthy foods calorie for calorie

Average price of foods per 1,000 calories using the Food Standards Agency's nutrient profiling score category



Average price of foods per 1,000 calories by Eatwell Guide food group

■ Bread, rice, potatoes, pasta ■ Food & drinks high in fat and/or sugar ■ Fruit and vegetables ■ Meat, fish, eggs, beans, other sources of non-dairy protein ■ Milk and dairy foods



Source: CEDAR analysis using Consumer Price Index (CPI) average retail price food indices, 2010–2021 (ONS). Please note all averages are unweighted means.

With thanks to
 CEDAR

WHAT DID WE DO?

The Centre for Diet and Activity Research (CEDAR) unit at the University of Cambridge built on food price research first conducted in 2014 (Jones *et al.*, 2014) and matched price data for the 79 food and drink items that have been continuously tracked by the Office for National Statistics' Consumer Price Index (CPI) between 2010–2021 to food and nutrient data from Public Health England's National Diet and Nutrition Survey. Each item was then assigned to a food group and categorised as either 'more healthy' or 'less healthy' using the nutrient profiling model developed by the Food Standards Agency (FSA). We also assigned each food in the CPI basket to one of the five Eatwell Guide food groups to better understand the relative cost of the different food categories. Using price per kilocalorie is a helpful way to understand the relative prices of foods which make up diets and meals, rather than comparing individual products within specific food categories.

The CPI data for Q2 of 2020 (April to June) included a very high number of missing values due to food products being temporarily out of stock during the first wave of pandemic, and as a result prices in the CPI index do not reflect the reality at the time. To deal with this missing data, basket prices for Q2 across all years analysed were removed from this year's analysis, as doing so did not materially affect annual prices of previous years.

**WHAT'S HAPPENING?**

Food price is a major determinant of food choice, with price rises disproportionately affecting lower income groups. The price of more healthy foods continues to remain much higher than less healthy foods, with little change in the cost of different food groups between 2019 and 2021. The FSA's nutrient profiling model reveals striking differences, with more healthy foods almost three times more expensive than less healthy foods for the equivalent number of calories. The mean cost of more healthy foods in 2020 per 1,000 kilocalories was £7.00, compared to £2.41 for less healthy foods. Breaking the data down into the government's five Eatwell Guide food categories tells a similar story. While the mean price of fruit and vegetables per 1,000 kilocalories was £8.21 in 2020 (rising to £8.60 during the first quarter of 2021), the average price per 1,000 kilocalories of food and drinks high in sugar and/or fat was just £3.42 – 40% of the cost of more healthy products.

Although these data show that the price of fruit and vegetables and other food groups fell during 2020, the CPI data do not reflect local differences in price. Perhaps more significantly, the CPI does not capture all price reductions from promotions. Data from the Institute of Fiscal Studies found the share of food transactions on promotion dropped by around 15% between March and May 2020 leading to grocery prices increasing by 3%, which is not reflected in the CPI prices (O'Connell and Jaravel, 2020).

**IS POLICY SUPPORTING PROGRESS?**

The government has introduced several new policies in recent years which may help to start rebalancing the cost of more healthy vs. less healthy foods, though more ambitious action is likely to be needed in future. In 2018 the government introduced a levy on sugary drinks (24p per litre of drink containing more than 8g of sugar per 100ml, and 18p per litre of drink containing between 5–8g of sugar per 100ml). In 2020 the government also confirmed that it will be regulating to restrict promotions of foods high in fat, salt and sugar (HFSS) by volume online and in store – prohibiting HFSS products to be offered as part of 'buy-one-get-one-free' and '3 for 2' offers, or similar. In 2021 the value of vouchers issued through the Healthy Start scheme was increased from £3.10 to £4.25, enabling low income pregnant women and care-givers of children under 4 to more easily afford healthier foods such as fruit, vegetables and pulses.



“When I tried to go get a salad, it cost three pounds, which I don't have, but I can go McDonald's and get a burger for a pound which fills me up very well.”

YOUNG FOOD AMBASSADOR



METRIC

04

Wages: Pay people working in the food sector a fair wage

WAGES

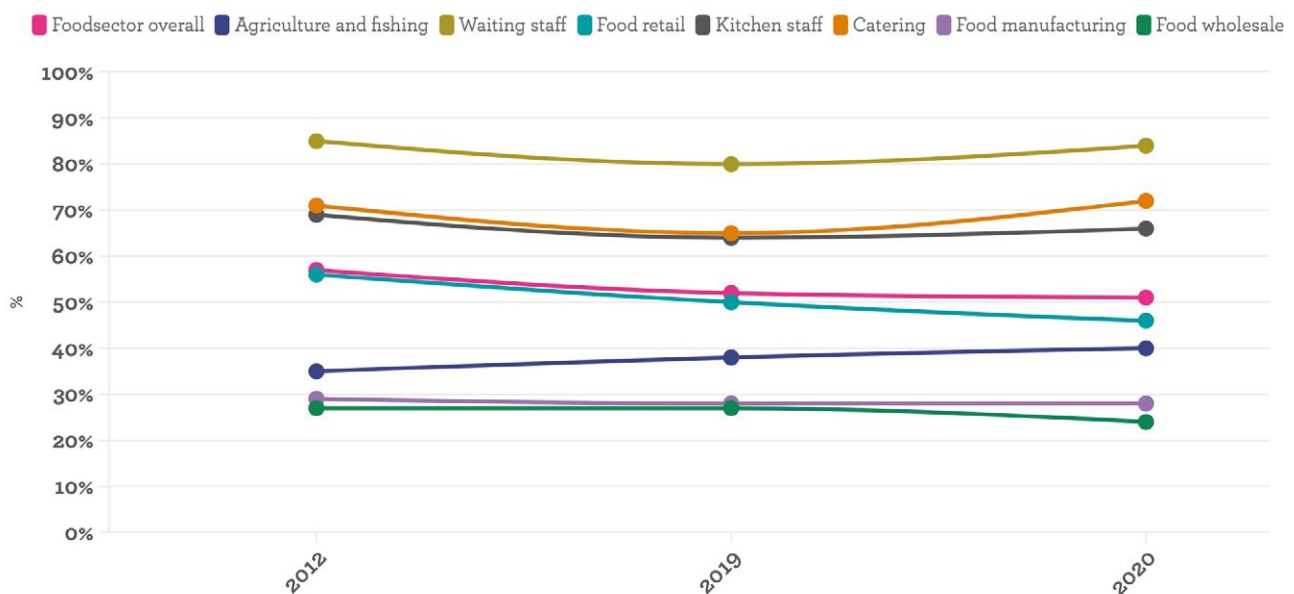


In 2020, 25% of workers in the food sector earned the minimum wage or below compared to 11% of workers across the UK.



Low paid = paid less than 2/3 of overall median hourly pay
Minimum wage or less = paid less than age-relevant minimum wage plus 1%
Real Living Wage = the London or Rest of UK rates were applied, depending on the location of the worker.

Proportion of employees in the UK paid below the real Real Living Wage by industry



Please note: We have used the following codes to extract trend data from the ASHE database: Industry groups (SIC 2007 codes): Agriculture and fishing: 1 excl 1.7; Food retail: 47.2 excl 47.26, 47.11 and 47.81; Food wholesale: 46.3 excl 46.35 and 46.17; Catering (bars and kitchens): 56. Occupation groups (SOC 2010 codes): Kitchen staff: 5434, 5435, 9272 Waiters & waitresses: 9273. A different process had to be used this year in obtaining the data which means there may have been slight differences in some of the cleaning and filtering processes used. Additionally, the ONS regularly revise and update their datasets, which means that there are some slight discrepancies between the percentages reported in this year's Broken Plate and last year's report.

Source: Resolution Foundation analysis of ONS, Annual Survey of Hours and Earnings, 2012-2020.

With thanks to

**Resolution
Foundation**

WHAT DID WE DO?

Using 2020 data from the Annual Survey of Hours and Earnings (ASHE) dataset (ONS, 2020), the largest survey of employees in the UK, the Resolution Foundation analysed the pay of people in the UK's food sector. We looked at the general picture for the sector overall, as well as pay for different industries, including agriculture and fishing, waiting staff, food retail, kitchen staff, catering, food manufacturing and food wholesale.

This year we followed the ONS's approach with these data, which is that the numbers include furloughed workers. This means it is quite hard to interpret the 2020 data; pay data is affected by some furloughed workers not having pay topped up, but also by a greater proportion of low paid workers losing their jobs and therefore dropping out of the dataset. It is therefore difficult to confidently identify trends as we do not yet know which of those factors is dominating. As a result, while we have compared the data from 2020 to 2019's data, we have also included 2012 data to provide some context in terms of longer-term trends.

WHAT'S HAPPENING?

With Covid-19 having led to prolonged restrictions for the hospitality industry throughout 2020, it is perhaps not surprising to see the Out of Home sector's 'annus horribilis' reflected in the data. While the proportion of workers paid the minimum wage or below increased across the UK economy in 2020, the increase was steeper among food sector workers. There was an 8 percentage point increase in the proportion of food sector workers paid at or below the minimum wage between 2019 and 2020 compared to a 4 percentage point increase for workers across the UK.

Research undertaken by the Food Foundation also found that levels of food insecurity among workers in the food sector were much higher than the population average during the pandemic, with 14% of food sector workers having experienced food insecurity in the six months to January 2020, compared to 9% of the general population (Food Foundation, 2021).



Although the percentage of those paid below the Real Living Wage (a voluntary wage rate that takes into account the cost of living and inflation) remained broadly stable in 2020, there are large differences at an industry level. 84% of waiting staff were paid below the Real Living Wage in 2020, a figure which has not moved much since 2012, compared to just under a quarter (24%)

of workers in food wholesale. More companies ought to be encouraged to pay the Real Living Wage, particularly those industries not so adversely affected by the pandemic – such as food retail. Certainly, data on the proportion of workers defined as low paid (paid less than 2/3 of the median hourly wage) demonstrates the differing impact of Covid-19 on food workers. While there was a fall in the proportion of low paid workers in food retail in 2020 – continuing the positive downward of the past eight years – and manufacturing and wholesale remained broadly stable, the same does not appear to be true for waiting and kitchen staff and those in catering where the numbers defined as low paid appear to have increased between 2019 and 2020.

**IS POLICY SUPPORTING PROGRESS?**

The government's National Living Wage (for workers over the age of 23) is currently set at £8.91 per hour and the National Minimum Wage (for workers age 21 and over) at £8.36 per hour. There is no higher weighting for London. Despite a recent increase,

this remains well below the Real Living Wage as calculated by the Living Wage Foundation, which is currently set at £9.50 per hour nationally and £10.85 in London, and is applicable for all workers over the age of 18.



"If you're busy, you've got kids, you want to get something quickly and get out the shop, I would say it takes a lot of time and effort to be able to go through all the nutritional content and decide which is going to be best. And not everyone has the time to be able to do that... you're just going to pick the first one off the shelf"

YOUNG FOOD AMBASSADOR



"If I think to last year when I was doing a lot of train travel... it used to drive me crazy trying to eat healthy.... y'know, between the combination of trains and platforms on the station and landing at some hotel it was so hard not to buy anything that wasn't beige. And wasn't really high in sugar. So even with the best will in the world you can take a packed lunch for your first train journey, but if you're away for 2 or 3 days umm it's pretty hard"

VEG ADVOCATE





THEME:

Make healthier and sustainable options more available

• METRIC 5: PLACES TO BUY FOOD

We're influenced by what's available in our local area. Living in areas with lots of takeaway outlets is linked to a greater likelihood of having obesity (Burgoine *et al.*, 2018). People are understandably more likely to eat food which is convenient and readily available, so we need to ensure that healthy food is included in this. It cannot be right that where people live affects their level of access to healthier food.

• METRIC 6: PRODUCTS WITH TOO MUCH SUGAR

Our choices are influenced by the options available, not all of which are healthy. Many products we routinely see on shelves are too high in fat, salt and sugar. If businesses reformulated the foods which they sold, there would be less onus on individuals having to seek out information (and decipher it) to determine whether what they are buying is harming their health or not.

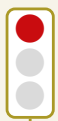
• METRIC 7: PRODUCTS WITH TOO LITTLE VEG

Many meal options available have a high impact on the environment as well as our health. Eating less meat and more veg can help to lower greenhouse gas emissions as well as having health benefits in high income countries (Scheelbeek *et al.*, 2020).



"I'm thinking of, at the top of our street, there's maybe three or four takeaways and a Sainsbury's, but when I was growing up on the same parade there was a bakery, a greengrocers and a fish mongers, they've just all gone now they're just replaced with fried chicken and Indian, burger places, y'know and I always think we're really missing a trick"

VEG ADVOCATE



METRIC

05

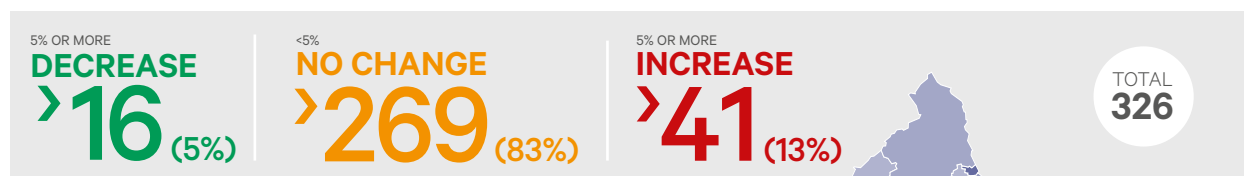
Places to buy food: Use local authority town planning powers to reduce the availability of unhealthy takeaways

PLACES TO BUY FOOD



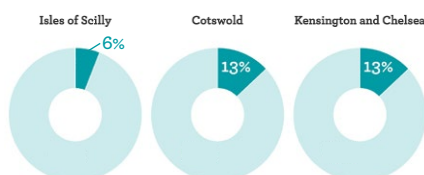
1 in 4 places to buy food are fast food outlets. The proportion of fast food outlets is higher in the most deprived local authorities compared to the least deprived.

Changes in proportion of food outlets that are fast food outlets from 2019 to 2020 (number of local authorities):

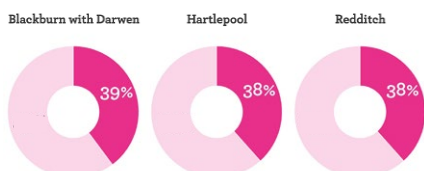


Proportion of food outlets that are fast food outlets:

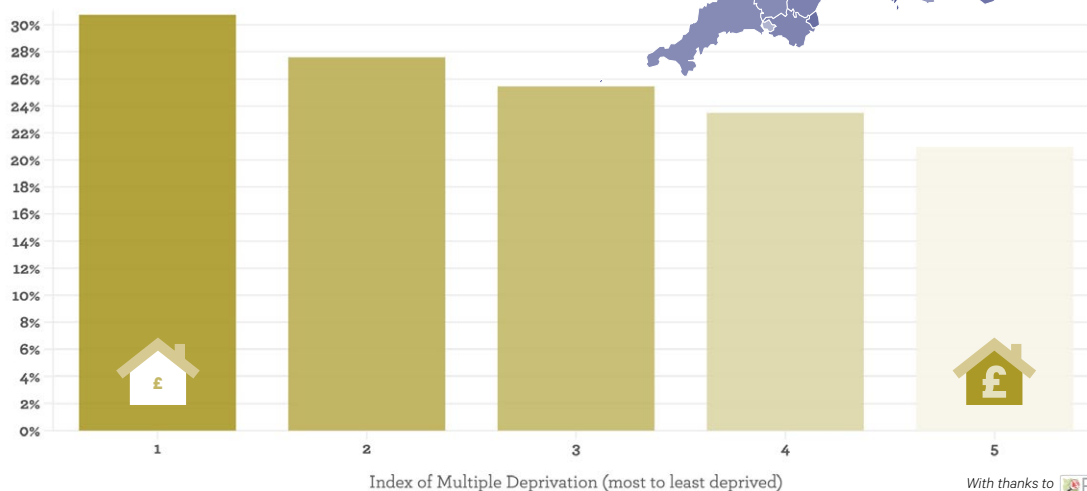
BEST
performing
areas



WORST
performing
areas



Proportion of all food outlets that are fast food outlets



Source: Crown copyright and database rights 2021 (Ordnance Survey, 100025252). This material includes data licensed from PointX Database Right/Copyright 2021

WHAT DID WE DO?

Working with the Food environment assessment tool (Feat) team from the University of Cambridge and using the same methodology as in previous years' *Broken Plate* reports, we extracted and analysed data on the location of food outlets from Ordnance Survey's Points of Interest dataset for June 2020. We then calculated takeaway food outlets as a proportion of all food outlets within local authorities in England.

WHAT'S HAPPENING?

The average proportion of fast food outlets in English local authorities has increased slightly to 26% from 25%, the level it stayed at for the previous two years. The highest percentage of takeaways (39%) and the lowest percentage of takeaways (6%) in any local authority has remained largely consistent since last year's report. However, 13% of local authorities have seen an increase in the proportion of fast food outlets since last year, while only 5% have seen a decrease.

This year we have looked more closely at inequalities in fast food availability. On average, there is a trend for more deprived local authorities to have a greater proportion of takeaway food outlets than less deprived local authorities. The least deprived fifth of local authorities have 20% of places to buy food that are defined as fast food outlets compared with 30% in the most deprived fifth of local authorities. This clearly illustrates that less healthy food is more readily available for people living in more deprived areas. As fast food consumption is closely linked with an increased risk of obesity, it is likely that this higher availability of fast food is a contributing factor to socio-economic health inequalities.

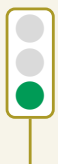


"If I go out with my friends after school, especially in the winter or in the colder times, it always has to revolve around, somewhere to be inside and sheltered, and that's often your Costa or Subway or all those places like that."

YOUNG FOOD AMBASSADOR

**IS POLICY SUPPORTING PROGRESS?**

Local authorities have some powers to shape their local food environments in order to promote healthy communities, including through the planning system. The National Planning Policy Framework places a responsibility on local authorities to promote healthy and safe communities. Additionally, the Health and Well-Being Planning Practice Guidance has encouraged local authorities since 2018 to use their planning decisions to restrict new fast food outlets if they are close to locations where children and young people congregate, if there are high levels of obesity in the local area, or if there is already a high concentration of outlets. Public Health England has produced guidance to share best practice and support local authorities in using the planning system in this way. Some local authorities have shown leadership on this issue but progress has been patchy (Keeble et al, 2019).

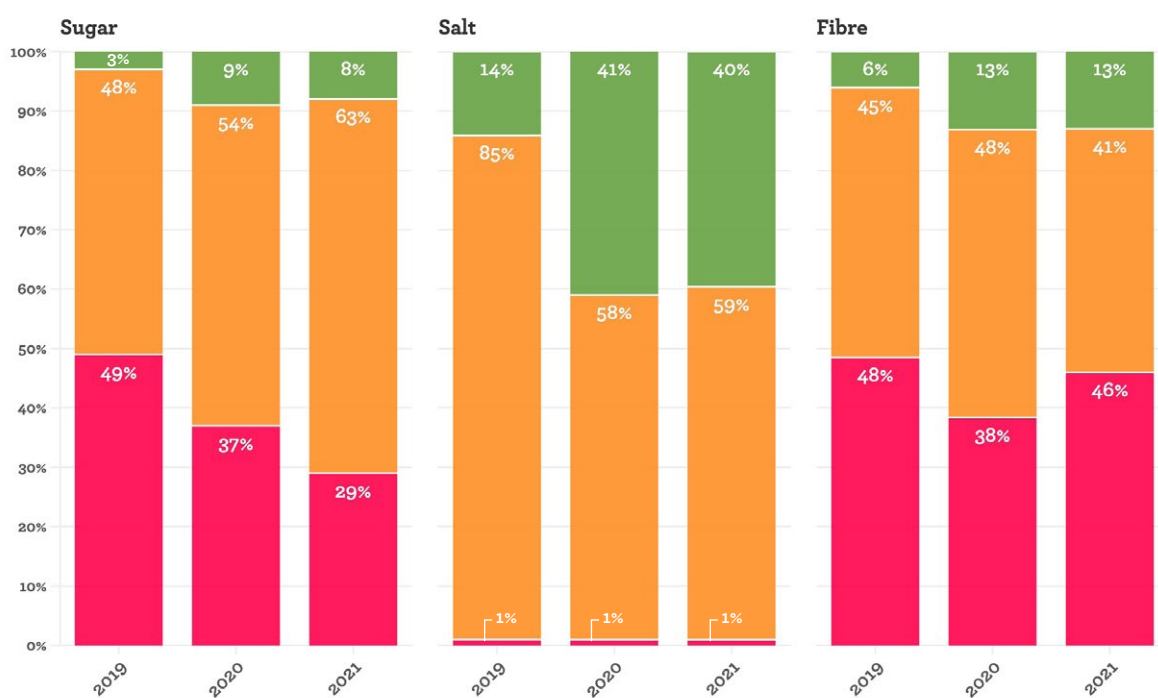


PRODUCTS WITH TOO MUCH SUGAR

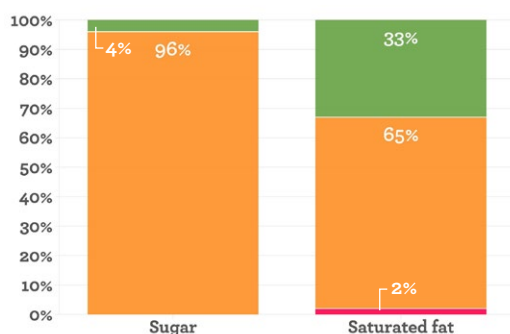


96% of yogurts and 92% of cereals marketed towards children contain high or medium levels of sugar.

The proportion of breakfast cereals marketed at children categorised as high, medium and low in sugar, salt and fibre, 2019-2021.



The proportion of yogurts marketed at children categorised as high, medium and low in sugar and saturated fat in 2021



Key: High (red), medium (amber) and low (green) colour coding for salt, sugar and saturated fat are based on the government's Front of Pack nutrition labelling guidance. High (green), medium (amber) and low (red) colour coding for fibre based on Action on Sugar's criteria

Colour coding source: Department of Health and Social Care. Guide to creating a front of pack (FoP) nutrition label for pre-packed products sold through retail outlets. 2013.

With thanks to



WHAT DID WE DO?

Between March and May 2021, Action on Salt and Action on Sugar collected data from nine major supermarkets (Aldi, Asda, the Co-operative, Lidl, Ocado – which covers Marks and Spencer's – Morrisons, Sainsbury's, Tesco, and Waitrose) to assess cereals and yogurts with child-friendly packaging. Due to pandemic restrictions, information was mostly collected online via retailer websites – only Aldi and Lidl were collected in store.

This time 126 breakfast cereals qualified, and 100 yogurts qualified. Products were then assessed against the government's Front of Pack nutrition labelling guidance. The data on cereals has been compared to data from previous *Broken Plate* reports to assess changes over time. Data on yogurt has not previously been included in *Broken Plate*, and so has been compared to research carried out by the University of Leeds between 2016 and 2019 (Moore et al., 2020).

WHAT'S HAPPENING?

Children's cereals: There have been some small improvements in making breakfast cereals with packaging that may appeal to children less unhealthy. Positively, the proportion of these cereals that are classified as high in sugar using the government's Front of Pack nutrition labelling guidance has decreased by 8 percentage points to 29%. However, the average content per 100g has only reduced very slightly from 18.4 grams in 2020 to 18.0 grams in 2021. Unfortunately, the proportion of cereals that are high or medium in salt has remained relatively unchanged (60%), and the proportion low in fibre has increased (from 38 to 46%).

Using the government's traffic light labelling system, which categorises nutrients into high (red), medium (amber) and low (green), the majority would fail to obtain a green rating: 92% failing for sugar, 60% failing for salt and 87% for fibre (using Action on Sugar's cut-offs for fibre).

Some retailers have taken action to remove cartoon characters on packaging of cereals – however, many of these cereals still use packaging that is clearly designed to appeal to children and so have been included in this analysis.

Children's yogurts: This year, we have also looked at the sugar content of children's yogurts. Like cereals, many parents give yoghurts to their children in the belief that they are a healthy option. However, only 4% of yogurts with packaging designed to appeal to children obtain a green rating for sugar content under the government's Front of Pack nutrition labelling guidance. Per serving, the average total sugar content was 7.2g, which equates to 38% of the recommended sugar intake for 4–6 year olds and 30% for 7–10 year olds. But things are moving in the right direction, with the average sugar content having decreased by 16% since 2016.

While the average fat content of yogurts is generally low (77% obtain a green rating for fat), the saturated fat content is less positive. 67% of yogurts with packaging appealing to children were either medium or high in saturated fat. As with sugar, this has improved slightly over the years showing a 10% reduction in average saturated fat content since 2016. Although dairy products naturally tend to be relatively high in saturated fat, it is interesting to observe that the two products with the highest saturated fat content were dairy-alternative products, which many believe to be healthier.

Unlike with children's cereals, there have been no commitments in removing cartoon characters on packaging.

**IS POLICY SUPPORTING PROGRESS?**

Two key government policies have been introduced to encourage businesses to reduce the levels of sugar in their products.

In 2016 the government challenged industry to voluntarily reduce sugar levels across a variety of product categories by 20% by 2020. By 2019 (the third year of the programme) an average reduction of just 3% across the relevant categories had been achieved (13% on breakfast cereals, yoghurts, fromage frais). The government indicated in their 2020 Obesity Strategy that they will continue to work with industry voluntarily but 'remain

committed to further action if results are not seen'.

In 2018 the voluntary reduction programme was followed by a new levy on sugary drinks (24p per litre of drink containing more than 8g of sugar per 100ml, and 18p per litre of drink containing between 5–8g of sugar per 100ml). This has been more successful – the amount of sugar purchased by households through soft drinks fell by 10% in the year following its introduction, due to manufacturers reformulating their products to avoid the levy and consumers switching to lower sugar alternatives (Pell et al., 2021) (CEDAR).

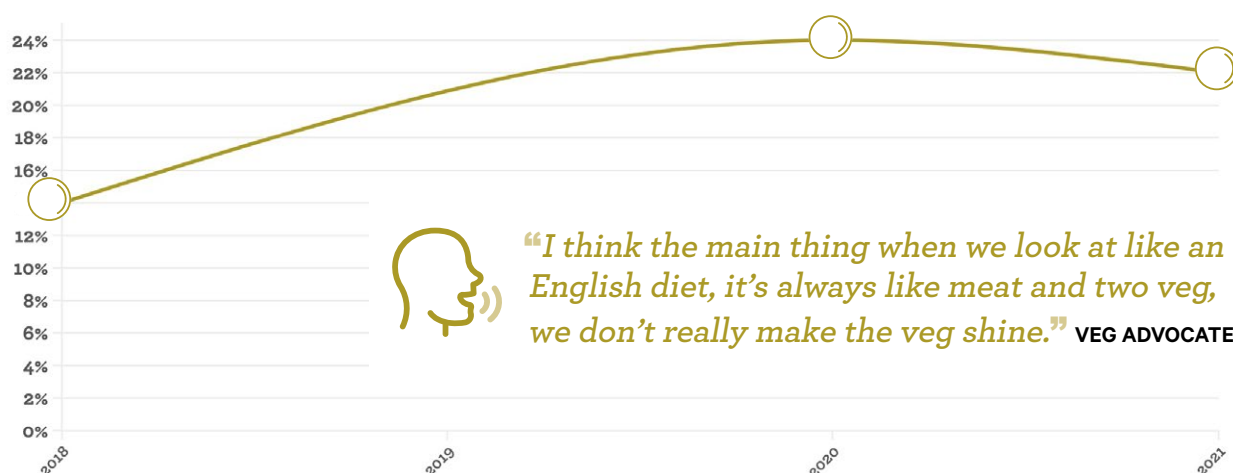


PRODUCTS WITH TOO LITTLE VEG

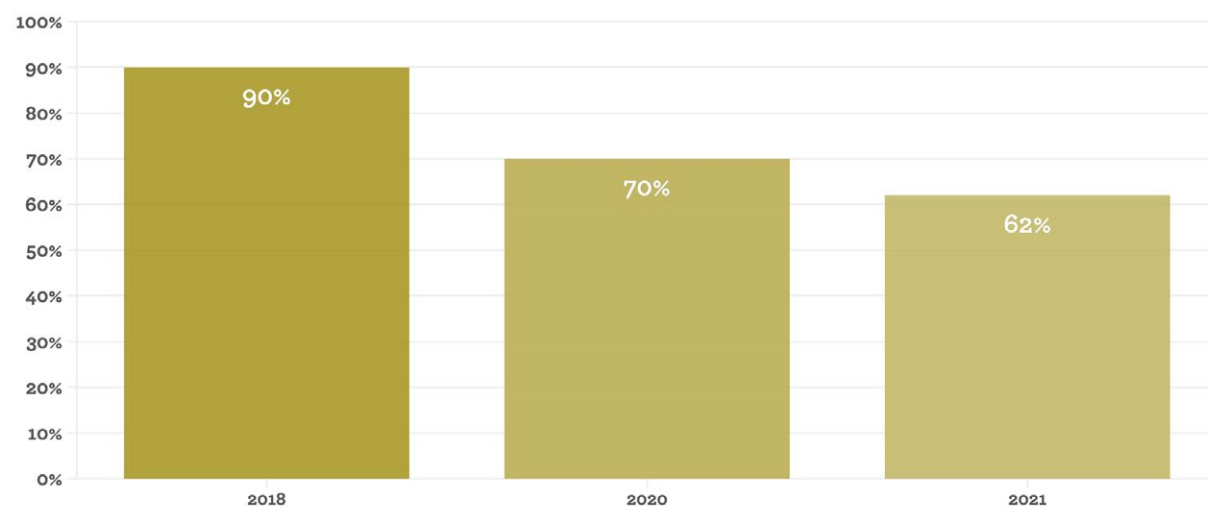


22% of ready meals are vegetarian or plant-based, with a welcome drop in price for vegetarian and plant-based meals since last year's survey.

The proportion of ready meals that are vegetarian or plant-based

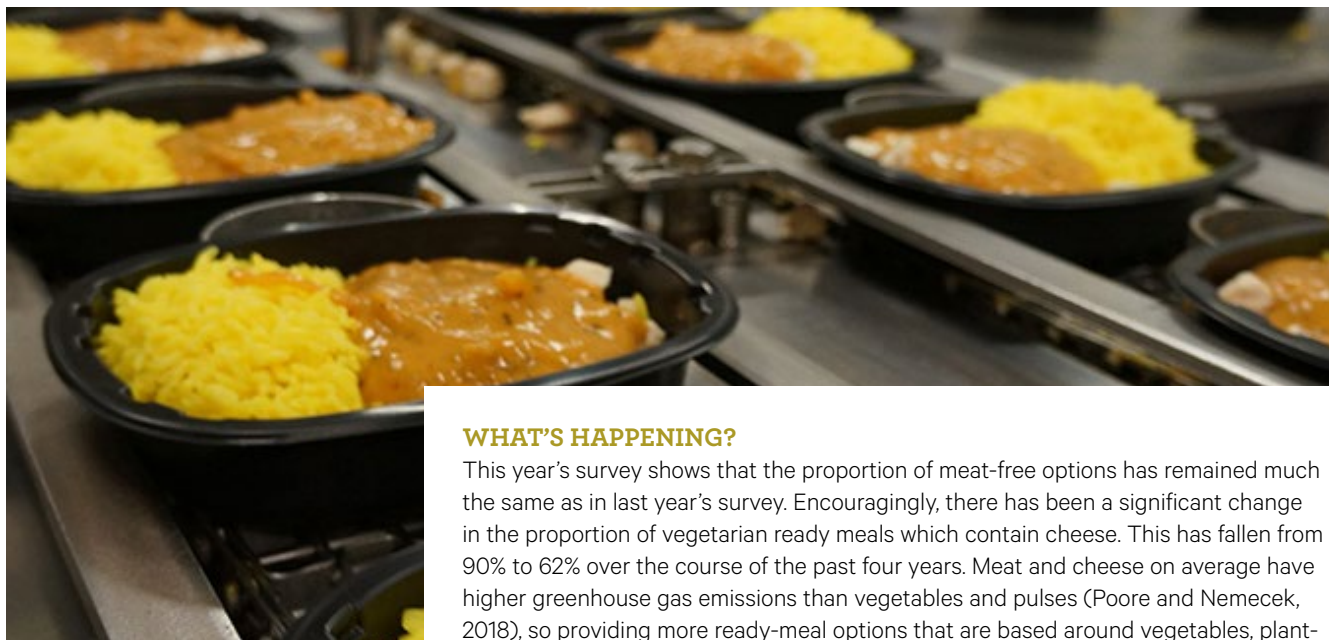


The proportion of vegetarian meals containing cheese



Source: Eating Better ready meal survey, 2018; 2020; 2021

With thanks to Eating Better foodDB



WHAT DID WE DO?

Working with the University of Oxford's foodDB team, Eating Better surveyed 2,318 ready meals in 10 UK supermarkets (including Tesco, Asda, Ocado, Sainsbury's and Morrisons) during March 2021. The survey includes meals sold as a hot main dish, including both own-brand and branded meals, and chilled and frozen options. The ingredient text for each ready meal was analysed to see which products contained meat or fish or could be categorised as either vegetarian or plant-based (vegan). The results were then compared to Eating Better's 2018 and 2020 surveys on ready meals.

These data have been compared against both the 2018 and 2020 survey results, rather than just 2020's, to more accurately identify any changes over time. Given that this is a snapshot survey, small year-on-year changes could be due to a number of things, for example seasonality or temporary supply issues.

WHAT'S HAPPENING?

This year's survey shows that the proportion of meat-free options has remained much the same as in last year's survey. Encouragingly, there has been a significant change in the proportion of vegetarian ready meals which contain cheese. This has fallen from 90% to 62% over the course of the past four years. Meat and cheese on average have higher greenhouse gas emissions than vegetables and pulses (Poore and Nemecek, 2018), so providing more ready-meal options that are based around vegetables, plant-based proteins or meat alternatives, and legumes can lessen the impact of food on the environment. However, despite the progress made over the past four years, three-quarters of ready meals still contained meat or fish.

What's more, over half (51%) of those ready meals with meat contained red or processed meat. As well as health organisations globally recommending a reduction of red and processed meat consumption in high income countries, there are also environmental implications of diets high in red meat. The livestock sector accounts for 35% of total cropland use and 14.5% of greenhouse gas emissions globally (Garnett *et al.*, 2017; FAO and LEAP, 2019) with 46% of all UK methane emissions coming from livestock farming (Department for Business Energy and Industrial Strategy, 2021).

Perhaps most encouraging is the fall in the average price for vegetarian and plant-based ready meals observed in this year's survey. Per portion, vegetarian meals were on average the most affordable option of those surveyed, with plant-based ready meals no longer the most expensive option at any of the supermarkets surveyed (as they were in 2020's survey).



IS POLICY SUPPORTING PROGRESS?

Government action to date to encourage businesses to reformulate their products has focussed on encouraging the reduction of salt, sugar and calories. There has not yet been much focus on encouraging businesses to increase the healthier components of their food products, including fruit and vegetables. Policies to increase vegetable consumption have tended to be restricted to public health educational campaigns ('5-a-day' messaging), support for low income households (the Healthy Start scheme), school food (School Fruit and Vegetable Scheme, School Food Standards) and public procurement (the Government Buying Standard and 'balanced scorecard'). Third sector campaigns such as *Peas Please* have advocated for the inclusion of more veg in products such as ready meals.



“My brother, he’s like nine. He started putting on quite a lot of weight during lockdown. And when he went back to school, people started taking the piss out of him, bullying him a lot.... I think that kind of relates to the wider stigma about it. Cause if he’s only nine as well, it’s really hard to tell him he’s got a problem, and he hasn’t really got a problem. It’s just, he’s got a lack of options and a lack of opportunities.” **YOUNG FOOD AMBASSADOR**





THEME:

Act now and address inequalities so that everyone has the chance of a longer healthier life

- **METRIC 8: CHILDHOOD OBESITY**

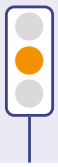
Levels of childhood obesity are greatest in those living in the most deprived areas. Obesity in childhood can cause long term health problems, as well as impacting on self-esteem and mental health. We need to create food environments that reduce these health inequalities and give all children the best chance in life.

- **METRIC 9: CHILD GROWTH**

Whether children reach their full height potential or not is influenced by how deprived the community they live in is. Short stature can indicate chronically poor nutritional status and lead to inadequate development. This is not a situation we should be seeing in the world's sixth largest economy.

- **METRIC 10: DIABETES**

Adult health is also affected by our food environment, with complications from type 2 diabetes continuing to rise. Complications arising from obesity and diet-related disease have a huge impact on an individual's quality of life, especially in lower income groups, and come at a cost to our healthcare system. We need to change the food environment so that people don't reach the stage where they are suffering from the preventable complications of diet-related disease.



Childhood obesity: Obesity among children continues to be greater among the most deprived communities compared to the least deprived and there has been little improvement in reducing these inequalities

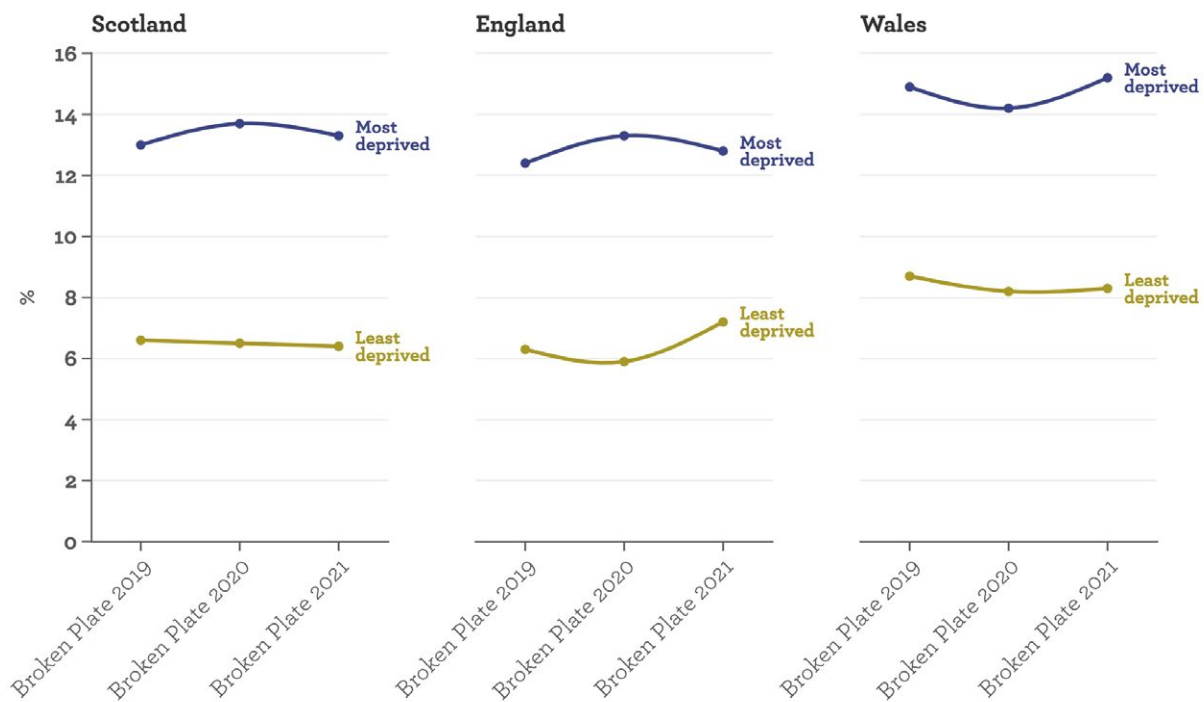
CHILDHOOD OBESITY



Children in the most deprived fifth of households are almost twice as likely to have obesity as those in the least deprived fifth of households by age 4–6.

Percentage of children with obesity

■ Most deprived ■ Least deprived



Sources:

ENGLAND: National Child Measurement Programme 2017/18, 2018/19 and 2019/20.
Age group – Reception (4-6-year-olds).

SCOTLAND: Child Health Surveillance Programme 2017/18, 2018/19 and 2019/20.
Age group – Primary 1 (4.5-6.5-year-olds).

WALES: Child Measurement Programme 2016/17, 2017/18 and 2018/19.
Age group – 4-5-year-olds.

WHAT DID WE DO?

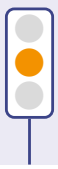
We gathered data collected by the various child measurement programmes across Scotland, Wales and England on child obesity in 4–6-year-olds. Northern Ireland uses a different definition of obesity and we were therefore unable to compare it to the other three nations. The most deprived quintile (fifth) has been compared with the least deprived quintile.

Due to school closures as a result of the Covid-19 pandemic in March 2020, it was not possible for as many children as usual to be measured. However, the data are still nationally representative and comparable to previous years.

WHAT'S HAPPENING

The percentage of children with obesity has only changed marginally over the past three years. There are different trends appearing across the three nations. In Scotland, levels of obesity have remained relatively consistent across both the most and least deprived groups. However, in Wales the gap between least and most deprived has increased as obesity in children in the most deprived quintile has risen, while remaining stable in the least deprived quintile. In England, the gap is narrowing but this is due to obesity in the least deprived group increasing, as opposed to being due to an improvement in the most deprived groups.





CHILD GROWTH

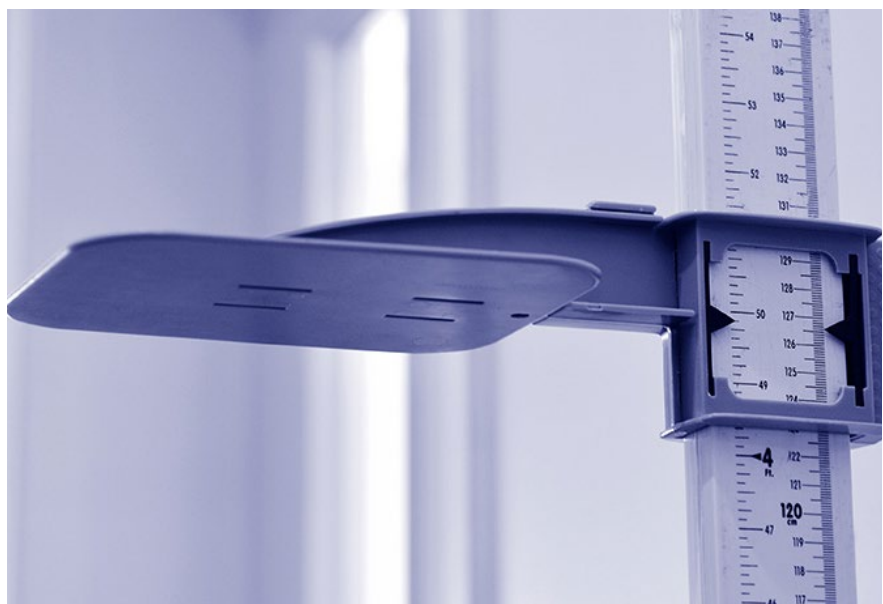


Children in the UK are on average shorter than children in other comparable high income countries. In England, children living in deprived communities are on average shorter than children living in wealthier communities by the time they reach age 11.

WHAT DID WE DO?

Working with Public Health England, we used National Child Measurement Programme data from the 2019/20 academic year to calculate the average height of children in Year 6 (aged 10–11 years) by deprivation group using the Income Deprivation Affecting Children Index (IDACI). The data were analysed by ethnic group, as there are some natural differences in average height by the time children reach puberty across ethnic groups. We have shown the data for White British ethnicities here but further assessment of other ethnicities is required. We conducted linear regression analysis across deprivation deciles for each gender in each year to test whether the gradient has changed over time.

This year we have also reported data comparing the average height of children aged 5 in the UK with other high income western countries. This data is from a recent Lancet report (Rodriguez-Martinez *et al.*, 2020) that pooled studies from 200 countries to explore the high variability in height of school-aged children. The study grouped together high income countries in the Global North within the category 'high income western countries'.



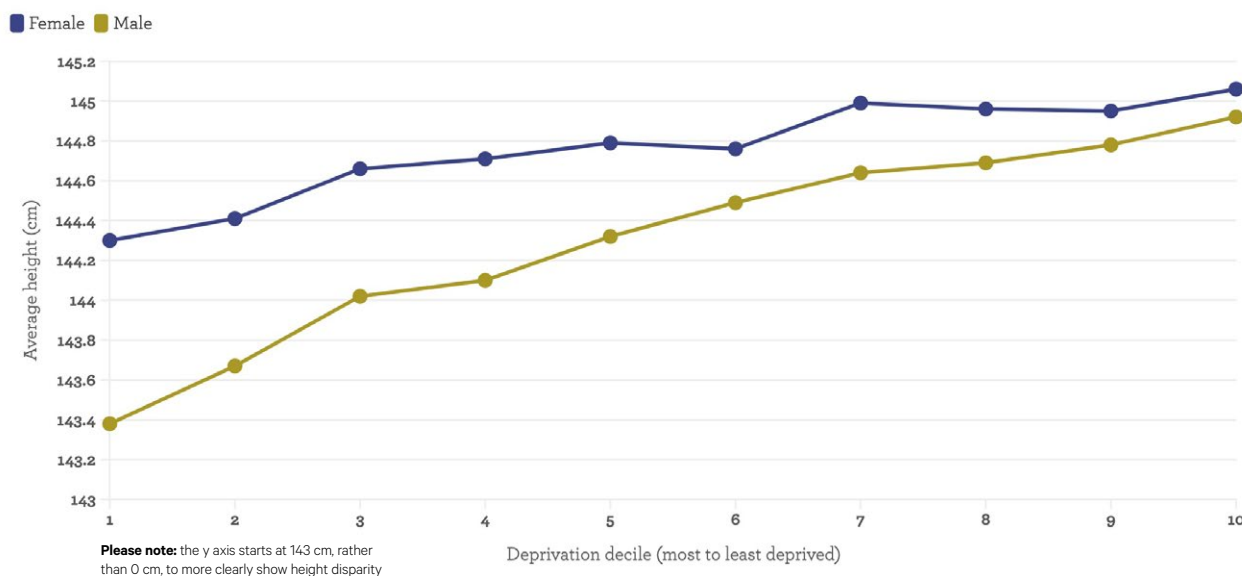
WHAT'S HAPPENING?

We would not expect the average height of White British children to have changed in such a short time frame, so unsurprisingly we see a very similar pattern as in previous *Broken Plate* reports: there continues to be a concerning deprivation gradient whereby children in the most deprived groups are on average shorter than their peers in the least deprived groups. The analysis revealed a slight reduction in the inequality gradient for girls in the most recent year, and no improvement for boys. Due to school closures as a result of the Covid-19 pandemic in March 2020, the National Child Measurement Programme was unable to measure as many children as usual. However, sufficient numbers of children were measured for the data to be nationally representative.

The international data reveals that children in the UK are on average shorter than those in nearly all other high income countries by age 5. Height up to age 5 is largely influenced by environments and nutrition, rather than genes or ethnicity (Jelenkovic *et al.*, 2016). Child growth is therefore an important indicator of our food system, as whether children reach their full growth potential is an indicator of both nutritional status and the environment in which they are growing up in. The UK data therefore raise questions about the nutritional quality of food that our children are able to access, in addition to wider socio-economic forces that shape the conditions for the optimal growth of young children during their first few years.

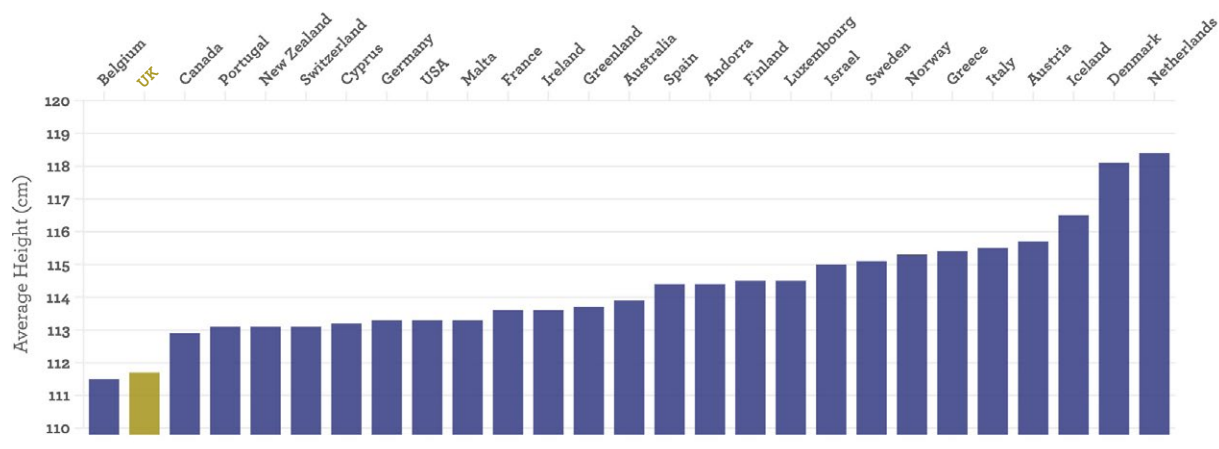
Average height of White British children aged 10-11, by deprivation group

Source: Analysis of National Child Measurement Programme, 2019-20.

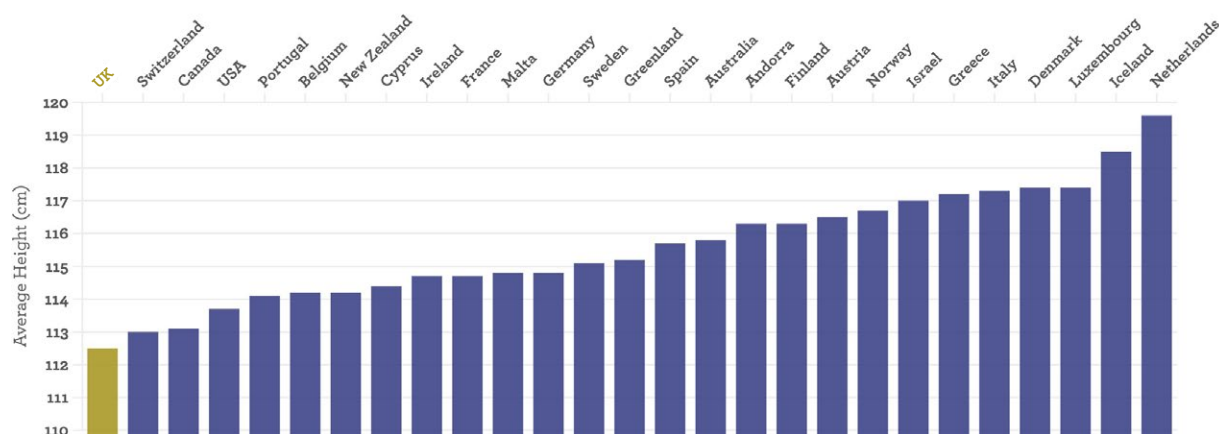


INTERNATIONAL COMPARISON:

Average height in high income western countries: female, aged 5, 2019



Average height in high income western countries: male, aged 5, 2019



Source: NCD RiSc, 2020



METRIC

10

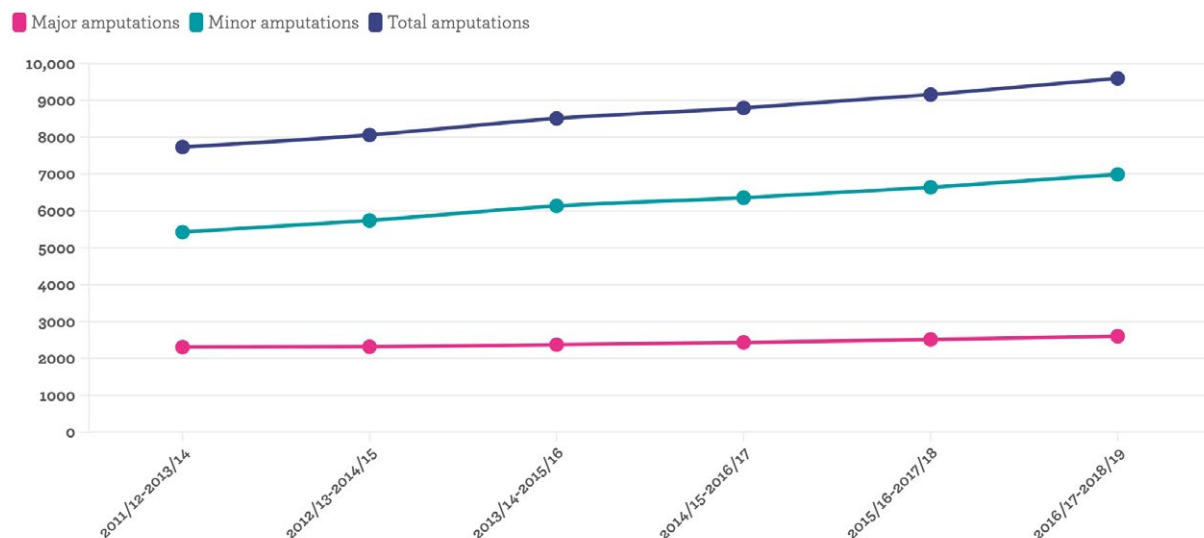
Diabetes: Ensure that the food environment isn't conducive to diet-related disease and its serious complications

DIABETES



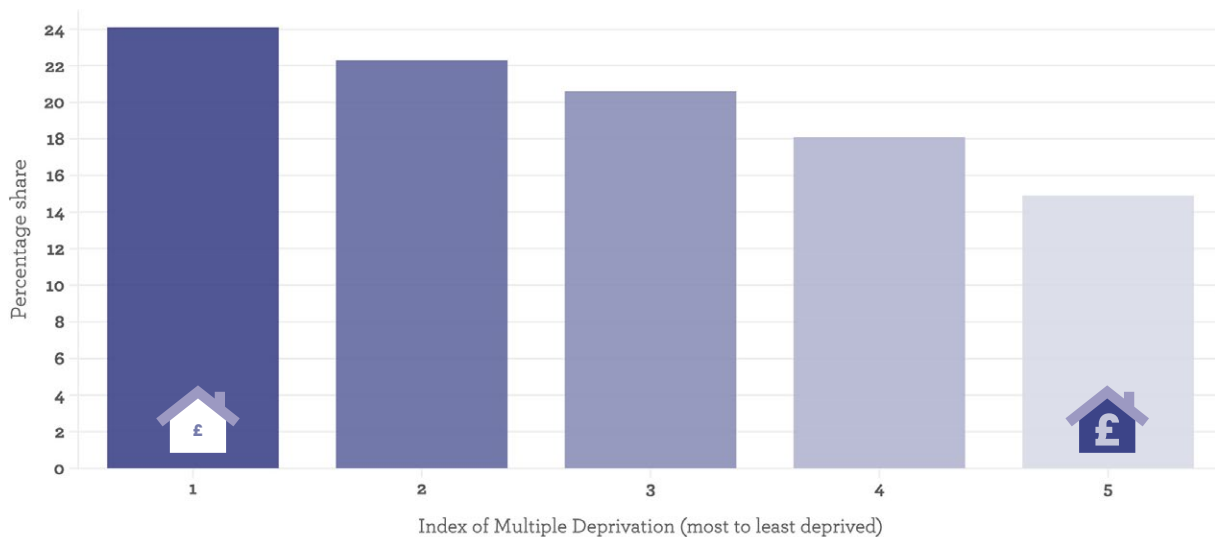
There are almost 10,000 diabetes-related amputations carried out on average per year, an increase of 24% in the past five years.

The average annual number of individuals requiring diabetes-related amputations, 2011-2019



Source: Public Health England's Diabetes Foot Care Profiles, 2011/12 – 2018/19

Share of individuals with type 2 diabetes in each quintile of deprivation



Source: National Diabetes Audit, 2020-21

WHAT DID WE DO?

We used data from Public Health England's Diabetes Foot Care Profiles, which are based on data from Hospital Episode Statistics, the National Diabetes Audit, and the Quality and Outcomes Framework. These data are reported for 3-year periods, from which we took a yearly average. Amputations due to both type 1 and type 2 diabetes are included within these data, although type 2 diabetes is strongly associated with obesity and deprivation and comprises the majority (90%) of diabetes cases in the UK. There is therefore a real need for better data to be made available to be able to distinguish between type 1 and type 2 diabetes-related amputations, as the risk of developing type 2 diabetes can be modified by improving diets and food environments, while type 1 diabetes cannot. With the prevalence of diabetes in the UK having doubled between 1998 and 2018, and with an estimated 2 million people in England at risk of developing type 2 diabetes in 2020 (Diabetes UK, 2018; NHS England, 2020), more disaggregated data on diabetes should be made publicly available.

Data on amputations are not available broken down by deprivation group. Instead, we used data from the National Diabetes Audit on the proportion of individuals registered with type 2 diabetes (and other types of diabetes excluding type 1) in each quintile of deprivation as defined by the Index of Multiple Deprivation.

WHAT'S HAPPENING?

Amputations are a major complication resulting from severe cases of diabetes that can seriously impact people's quality of life. There were 9,594 diabetes-related amputations on average per year for the period 2016/17 to 2018/19. This has increased by 1,861 amputations (24%) over five years. Moreover, 27% of the amputations in 2016/17 to 2018/19 were major amputations (above the ankle). Although England's population grew by 6% between 2011 and 2019 with a growing proportion of people aged 65 and over, which will likely have impacted on the absolute numbers seen here, this is still a shockingly large increase in diabetes-related amputations, which continue to rise.

There are currently approximately 3.2 million people in England diagnosed with type 2 diabetes, with a much higher proportion of these being in more deprived groups (NHS Digital, 2021). 24% of type 2 diabetes registrations are among people in the most deprived quintile compared with 15% in the least deprived quintile. This once again demonstrates that people in more deprived groups are disproportionately affected by diet-related illness.



THE CURRENT AND FUTURE HEALTH OF CHILDREN BORN IN 2021

Modelling the health of this year's birth cohort

WHAT DID WE DO?¹

We calculated the projected health implications of current diets for children born in England in 2021. The trajectory was modelled using projected figures based on current trends, thus showing us what the rates of overweight, obesity and diet-related disease will be for these children if things continue as they are. These diseases are not exclusively related to overweight and obesity, but there is a strong association between having a high BMI and being at an increased risk of several diet-related chronic diseases. It is also worth noting that some individuals will have multiple comorbidities, living with several of the conditions on our trajectory showing the future health outcomes for 2021's birth cohort.



¹ For further information on the methodology and sources used in these infographics please see our technical report on the Food Foundation website.

What's the future for every 100 children born in 2021 if nothing changes?

Trajectory for children born in 2021

● Overweight ● Obesity ● Severe obesity ● Dead

AT AGE 5/RECEPTION: FORECAST 2026



AT AGE 11/YEAR 6: FORECAST 2031



AT AGE 21: FORECAST 2041



AT AGE 65: FORECAST 2086



AT AGE 65: IN DETAIL

- Dental decay
- People who've lost all teeth
- Dead

AT AGE 65: DIABETES T1+T2



AT AGE 65: CARDIOVASCULAR DISEASE



AT AGE 65: CANCERS*



AT AGE 65: OSTEOPOROSIS



AT AGE 65: TOOTH DECAY



Note: Overweight is defined as a BMI of 25 - 29.9, obesity (excluding severe obesity) is defined as a BMI of 30-39.9, and severe obesity as a BMI of 40 or higher. For children at age 5 and 11, we used the UK90 reference charts, defining overweight and obesity at the 85th and 95th centile cut-offs, and the 99th centile for severe obesity.

* a third of cancers are now estimated to be a result of poor diets and low levels of physical activity, with 13 forms of cancer associated with obesity (Cancer Research UK, 2021) (WCRF)

What's the future for low income children born in England in 2021 compared to their wealthier peers?

The situation is worse if you are on a low income across virtually all measures of health, with poorer children more likely to have both overweight and obesity in Reception than wealthier children – a gap that only continues to widen as children age. Of particular concern is the trajectory for severe obesity, defined as a BMI of 40 and over in adults, and above the 996th percentile in children.

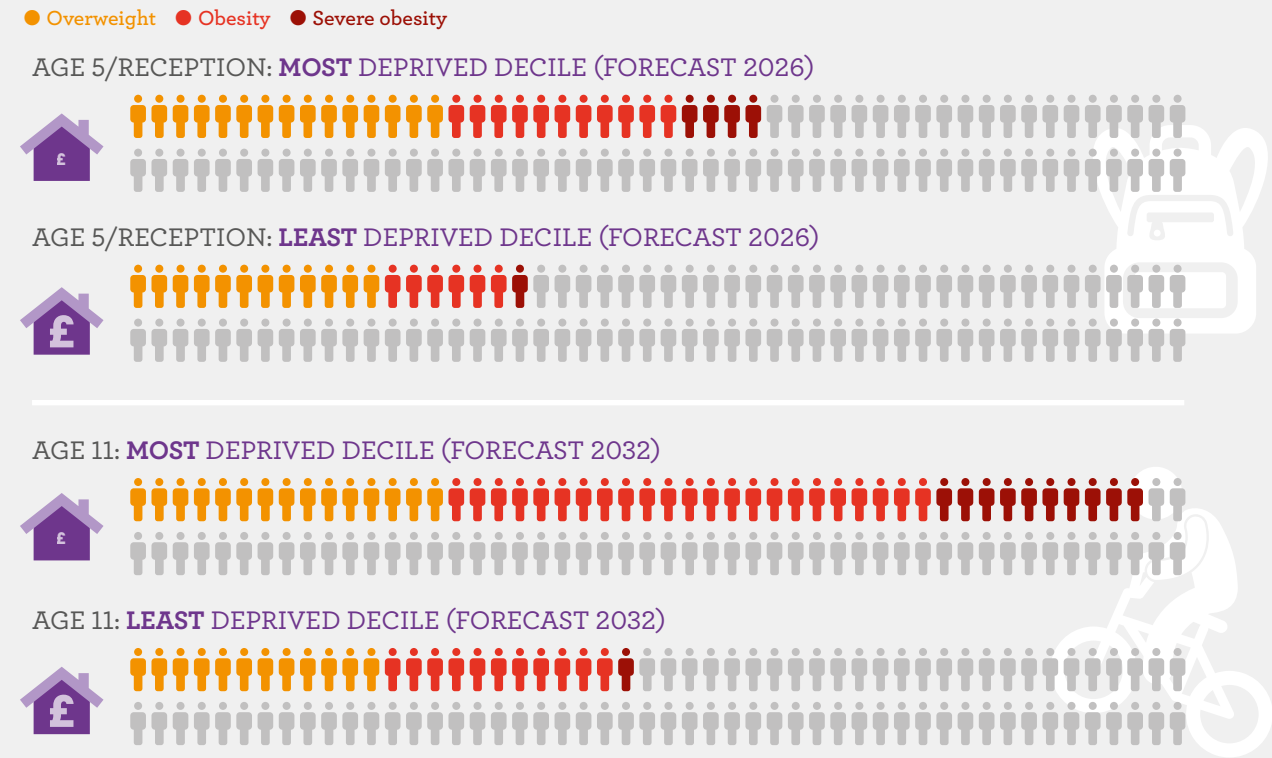
The risk of negative health outcomes rises sharply once BMI is this high (Flegal *et al*, 2013) and our infographic clearly demonstrates the disparity in levels of severe obesity between children in more and less deprived households.

Those born in 2021 in the poorest 10% of households will be ten times more likely to be living with severe

obesity at age 11 than the richest 10% if things continue as they are.

Although life expectancy is influenced by a number of factors, and not only related to diet, it is a substantial contributing factor. Once again, this demonstrates the gap in healthy outcomes between the most and least deprived citizens in our communities.

For every 100 children born



	 MOST deprived decile	 LEAST deprived decile	
 AGE 65-69 (FORECAST 2086)			
Life expectancy (male): average number of additional years likely to live	17.3 years	27.1 years	
Life expectancy (female): average number of additional years likely to live	15.0 years	28.2 years	

WHAT ARE WE EATING COMPARED TO GOVERNMENT RECOMMENDATIONS?

Dietary recommendations from the government provide guidance on the quantities of foods that are needed as part of a healthy diet. Unfortunately, a large proportion of the population across all ages in the UK are not meeting these recommendations. When we look at the metrics across this report, we can see why it can be hard for people to meet these recommendations for a healthy diet, and why it is that our current intakes of so many nutrients are either too high or too low, as the figures below demonstrate.

Vitamins and minerals are nutrients that are essential for the body to work properly, and deficiencies can increase the risk of developing disease. Fruit and vegetables provide a number of these micronutrients, as well as fibre, which has a host of beneficial health effects including reducing the risk of cardiovascular disease and type 2 diabetes (Reynolds *et al.*, 2019). Most people are familiar with the 5-a-day recommendation but very few manage to meet it. Conversely, many people

over consume foods that are high in fat, salt and sugar (HFSS), which can all increase the risk of diseases such as obesity, high blood pressure and type 2 diabetes (WHO, 2018).

Given the crucial role that vitamins A and D play in supporting the immune system, and general health and development of young children, it is concerning that 11% of children aged 4–10 years are not consuming enough vitamin A. Moreover, the proportion of children with low levels of vitamin D rises sharply as they enter adolescence, despite vitamin D playing an important role in ongoing bone formation and development. Across all age groups not enough people are meeting the 5-a-day recommendation, with just 12% of adolescents eating enough fruit and veg. Conversely, just 2% of children aged 4–10 years old are staying within the recommended amount of free sugars, with 89% exceeding the recommendations for saturated fat.

Micronutrients: The proportion (%) of people with intakes below the lowest recommended levels for vitamins A and D (LRNI)²



	Low vitamin D levels	Low vitamin A intake
Age 4-10	2	11
Age 11-18	19	18
Age 19-64	16	10
Age 65+	13	8

Macronutrients: The proportion (%) of people not meeting the 5-a-day recommendation and exceeding the recommended amounts of free sugars and saturated fat

	Not meeting 5-a-day fruit and vegetables recommendation	Exceeding free sugar recommendations	Exceeding saturated fat recommendations
Age 4-10	No recommendation	98	89
Age 11-18	88	93	82
Age 19-64	67	83	75
Age 65+	65	84	83

² Please note that the vitamin D data reported in the NDNS is a measure of low circulating levels in the blood of vitamin D, not intake, and these data could therefore be impacted by factors other than diet alone.

TIME FOR CHANGE

The statistics in our *Broken Plate* report demonstrate that drastic action is required to transform our food system to deliver health, sustainability and equity. Once again not only is positive change failing to be delivered, but for several of the metrics, the situation has actually deteriorated. Just one metric has shown improvement, with six non-movers, and three having worsened. These shocking statistics have real-life health implications for millions of people.

Just as the air we breathe is determined by our environment, so too are our diets influenced and shaped by the world around us. Businesses and governments must act to support everyone in being able to access and afford a healthy and sustainable diet.

Although the narrative when it comes to health and weight remains heavily focused on emphasising personal and individual responsibility over systemic change, we hope *Broken Plate* shows exactly why it is that we must change the food environment and the conditions in which we all live if we are to tangibly improve the nation's health.

We need to make healthier options more available, affordable and accessible if we are to ensure that everyone in the UK – regardless of income, age or ethnicity – has a fair chance of a healthy diet. This will need more than just information campaigns; instead requiring structural actions that reshape the food environment. A recent review of government public health strategies on obesity (Theis et al., 2021) identified 689 different policies that have been designed to reduce obesity over the past 30 years, yet we have barely moved the needle on levels of overweight and obesity, and nutrition-related chronic disease prevalence continues to rise. The review found the largest proportion of interventions were focused on individual agency (43%) with only 19% of strategies set up to reduce health inequalities from the start.

Moreover, with two-thirds of children now suffering from negative body image and with the incidence of eating disorders rising (Women and Equalities Committee – House of Commons, 2021), the focus should be squarely on health-promoting environments rather than a narrow focus on individual weight and information provision.

Bold action will be required but is not impossible. Now is the time to act if we are to revamp our food environment so that it delivers for the next generation.

The Food Foundation



“Improving healthy eating requires, at the minimum, an understanding of influences on nutrition and its consequences; and monitoring of progress. Broken Plate does both of these admirably, and fulfils an urgent national need.”

PROFESSOR SIR MICHAEL MARMOT



METHODS

Further detail and more information on the sources, data and methodologies used to calculate *Broken Plate*'s metrics can be found in our *Broken Plate* technical report, available from the Food Foundation's website.

REFERENCES

- ASA (2018) *Children's exposure to TV ads for gambling, alcohol and high fat, salt and sugar foods: 2018 update*. Available at: <https://www.asa.org.uk/news/children-s-exposure-to-tv-ads-2018-update.html> (Accessed: 3 June 2021).
- Bell, T. (2020) *Worse for some • Resolution Foundation*. Available at: <https://www.resolutionfoundation.org/comment/worse-for-some/> (Accessed: 19 May 2021).
- Bite Back 2030 (2021) *New Analysis: End Junk Food Marketing Online*. Available at: <https://www.biteback2030.com/real-story/new-analysis-end-junk-food-marketing-online> (Accessed: 3 June 2021).
- Burgoine, T. *et al.* (2018) 'Examining the interaction of fast-food outlet exposure and income on diet and obesity: Evidence from 51,361 UK Biobank participants', *International Journal of Behavioral Nutrition and Physical Activity*. BioMed Central Ltd., 15(1), pp. 1–12. doi: 10.1186/s12966-018-0699-8.
- Cancer Research UK (2021) *Does obesity cause cancer?* Available at: <https://www.cancerresearchuk.org/about-cancer/causes-of-cancer/obesity-weight-and-cancer/does-obesity-cause-cancer>
- Critchlow, N. *et al.* (2020) 'Awareness of marketing for high fat, salt or sugar foods, and the association with higher weekly consumption among adolescents: a rejoinder to the UK government's consultations on marketing regulation'. doi: 10.1017/S1368980020000075.
- Department for Business Energy and Industrial Strategy (2021) *Final UK greenhouse gas emissions national statistics - data.gov.uk*. Available at: <https://data.gov.uk/dataset/9568363e-57e5-4c33-9e00-31dc528fcc5a/final-uk-greenhouse-gas-emissions-national-statistics> (Accessed: 8 June 2021).
- Diabetes UK (2018) *Number of people living with diabetes doubles in twenty years | Diabetes UK*. Available at: https://www.diabetes.org.uk/about_us/news/diabetes-prevalence-statistics (Accessed: 9 June 2021).
- Emarketer (2020a) *UK's Sharp Declines in Traditional Media Will Drag Down Total Ad Spend*. Available at: <https://www.emarketer.com/content/uk-sharp-declines-across-traditional-media-will-drag-total-ad-spend-down-by-7-5-2020> (Accessed: 3 June 2021).
- Emarketer (2020b) *UK Digital Ad Spending by Industry 2020*. Available at: <https://www.emarketer.com/content/uk-sharp-declines-across-traditional-media-will-drag-total-ad-spend-down-by-7-5-2020> (Accessed: 3 June 2021).
- FAO; LEAP (2019) *Water use in livestock production systems and supply chains, Livestock Environmental Assessment and Performance (LEAP) Partnership*.
- Flegal, K. M. *et al.* (2013) 'Association of all-cause mortality with overweight and obesity using standard body mass index categories: a systematic review and meta-analysis', *JAMA - Journal of the American Medical Association*. American Medical Association, pp. 71–82. doi: 10.1001/jama.2012.113905.
- Food Foundation (2021) *A CRISIS WITHIN A CRISIS*.
- Garnett, T. *et al.* (2017) 'Grazed and confused? Ruminating on Cattle, Grazing Systems, Methane, Nitrous Oxide, the Soil Carbon Sequestration Question-and what it All Means for Greenhouse Gas Emissions', *Food Climate Research Network*, pp. 1–127. Available at: https://tabledebates.org/sites/default/files/2020-10/fcrn_gnc_report.pdf
- GOV.UK (2020) *Food Statistics in your pocket: Summary*. Available at: <https://www.gov.uk/government/statistics/food-statistics-pocketbook/food-statistics-in-your-pocket-summary> (Accessed: 3 June 2021).
- IGD (2015) *Store choice vs product choice: the influence of price*. Available at: <https://www.igd.com/articles/article-viewer/t/store-choice-vs-product-choice-the-influence-of-price/i/15839> (Accessed: 8 June 2021).
- Jelenkovic, A. *et al.* (2016) 'Genetic and environmental influences on height from infancy to early adulthood: An individual-based pooled analysis of 45 twin cohorts', *Sci Rep* 6, 28496. <https://doi.org/10.1038/srep28496>.
- Jones, N. R. V. *et al.* (2014) 'The growing price gap between more and less healthy foods: Analysis of a novel longitudinal UK dataset', *PLoS ONE*. Public Library of Science, 9(10), p. 109343. doi: 10.1371/journal.pone.0109343.
- Keeble, M. *et al.* (2019). 'How does local government use the planning system to regulate hot food takeaway outlets? A census of current practice in England using document review'. *Health & Place*. doi: 10.1016/j.healthplace.2019.03.010
- Moore, E. *et al.* (2020) 'Sugar Reduction in Yogurt Products Sold in the UK between 2016 and 2019', *Nutrients*, 12(1):171.
- NHS Digital (2021) *National Diabetes Audit*. Available at: <https://digital.nhs.uk/data-and-information/publications/statistical/national-diabetes-audit> (Accessed: 4 June 2021).
- NHS England (2020) *Record high two million people at risk of Type 2 Diabetes*. Available at: <https://www.england.nhs.uk/2020/02/record-high-two-million-people-at-risk-of-type-2-diabetes> (Accessed: 9 June 2021).
- O'Connell, M. and Jaravel, X. (2020) *Inflation spike and falling product variety during the Great Lockdown*. doi: 10.1920/BN.IFS.2020.BN0292.
- Office for National Statistics. Annual Survey of Hours and Earnings (ASHE). <https://www.ons.gov.uk/surveys/informationforbusiness/businesssurveys/annualsurveyofhoursandearningsashe>. Published 2021
- Pell, D. *et al.* (2021) 'Changes in soft drinks purchased by British households associated with the UK soft drinks industry levy: Controlled interrupted time series analysis', *The BMJ*. BMJ Publishing Group, 372. doi: 10.1136/bmj.n254.
- Poore, J. and Nemecek, T. (2018) 'Reducing food's environmental impacts through producers and consumers', *Science*. American Association for the Advancement of Science, 360(6392), pp. 987–992. doi: 10.1126/science.aag0216.
- Public Health England (2020a) *Disparities in the risk and outcomes of COVID-19*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908434/Disparities_in_the_risk_and_outcomes_of_COVID_August_2020_update.pdf (Accessed: 19 May 2021).
- Public Health England (2020b) *National Diet and Nutrition Survey Rolling programme Years 9 to 11 (2016/2017 to 2018/2019)*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/943114/NDNS_UK_Y9-T1_report.pdf (Accessed: 19 May 2021).
- Resolution Foundation (2021) *Poor neighbourhoods, powerful firms and missing research on race*. Available at: <https://www.resolutionfoundation.org/comment/poor-neighbourhoods-powerful-firms-and-missing-research-on-race/>
- Reynolds, A. *et al.* (2019) 'Carbohydrate quality and human health: a series of systematic reviews and meta-analyses', *The Lancet*. Lancet Publishing Group, 393(10170), pp. 434–445. doi: 10.1016/S0140-6736(18)31809-9.
- Rodriguez-Martinez, A. *et al.* (2020) 'Height and body-mass index trajectories of school-aged children and adolescents from 1985 to 2019 in 200 countries and territories: a pooled analysis of 2181 population-based studies with 65 million participants', *The Lancet*. Lancet Publishing Group, 396(10261), pp. 1511–1524. doi: 10.1016/S0140-6736(20)31859-6.
- Scarborough, P. *et al.* (2016) 'Eatwell Guide: Modelling the dietary and cost implications of incorporating new sugar and fibre guidelines', *BMJ Open*. BMJ Publishing Group, p. e013182. doi: 10.1136/bmjopen-2016-013182.
- Scheelbeek, P. *et al.* (2020) 'Health impacts and environmental footprints of diets that meet the Eatwell Guide recommendations: analyses of multiple UK studies', *BMJ open*. NLM (Medline), 10(8), p. e037554. doi: 10.1136/bmjopen-2020-037554.
- Scott, C., Sutherland, J. and Taylor, A. (2018) *Affordability of the UK's Eatwell Guide • Food Foundation*. Available at: https://foodfoundation.org.uk/wp-content/uploads/2018/10/Affordability-of-the-Eatwell-Guide_Final_Web-Version.pdf (Accessed: 13 June 2021).
- Theis, D. *et al.* (2021). 'Is Obesity policy in England fit for purpose? Analysis of government strategies and policies, 1992–2020'. *The Milbank Quarterly*. <https://doi.org/10.1111/1468-0009.12498>
- WHO (2018) Evaluating implementation of the WHO set of recommendations on the marketing of foods and non-alcoholic beverages to children. Progress, challenges and guidance for next steps in the WHO European Region. Available at: https://www.euro.who.int/_data/assets/pdf_file/0003/384015/food-marketing-kids-eng.pdf
- Women and Equalities Committee - House of Commons (2021) *Changing the perfect picture: an inquiry into body image*. Available at: <https://publications.parliament.uk/pa/cm5801/cmselect/cmwomeq/274/27402.htm> (Accessed: 3 June 2021).
- World Cancer Research Fund UK (no date) *Who we are*. Available at: <https://www.wcrf-uk.org/uk/about-us/who-we-are> (Accessed: 8 June 2021).
- Yau, A. *et al.* (2021) 'Sociodemographic differences in self-reported exposure to high fat, salt and sugar food and drink advertising: A cross-sectional analysis of 2019 UK panel data', *BMJ Open*. BMJ Publishing Group, 11(4), p. 48139. doi: 10.1136/bmjopen-2020-048139.
-



Food Foundation CIO
c/o Spayne Lindsay & Co LLP,
55 Strand, WC2N 5LR

T: +44(0)20 3086 9953
foodfoundation.org.uk
[@Food_Foundation](https://www.instagram.com/Food_Foundation)