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Understanding food environments and portion size behaviours in Wales

Insights from a Time to Talk Public Health Survey

May 2026

Mae'r ddogfen yma ar gael yn y Gymraeg/
This document is available in Welsh

Authorship

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Acknowledgements

We are grateful to the participants from Wales who have given their time freely to take part in Time to Talk Public Health surveys. We would also like to thank the following colleagues for providing feedback and assistance in producing this report: Dr Hayley Janssen, Dr Louisa Petchey, Prof Jo Peden, Dr Sumina Azam, Nicola Rees, Sajan Glass.

This work was funded by Public Health Wales.

Cite this publication

Cite this publication: Sharp, CA., Dale, C., Welch, C., Hughes, K., & Johnson, I. (2026). Understanding food environments and portion size behaviour in Wales: insights from a Time to Talk Public Health Survey. Cardiff: Public Health Wales.

Competing interests

The authors have no competing interests to declare.

Contact information

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ISBN: 978-1-83766-843-4

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Summary

Implications for policy and practice:

1. **Young adults, males, people living in more deprived areas and people who perceived themselves to be a heavier weight are likely to be eating more food out-of-home and takeaways. These foods are often served in larger portions and are higher in calories, fat and salt, which increases the risk of living with overweight or obesity. More action is needed to address what drives these behaviours.**

2. **People report eating larger portion sizes and continuing to eat even when they feel full. Action is needed to shift perspectives and behaviours on what a healthy portion size looks like and to support changes in eating behaviours.**

3. **We need to better understand the environmental, social and behavioural factors that lead people to eat more than they need, both at home and out-of-home, in order to help shape policies that could tackle these wider influences and make opting for more healthy options in all settings easier.**

Background and methods:

- Overweight and obesity are preventable, complex chronic health conditions, and rates for both conditions are rising globally. The food environment plays a large role in driving this rise, as it is highly influential on what and how much people eat. We need to create healthier food environments, as we know that healthy lives start in our everyday places. However, to do this we need to understand eating behaviours in our population and which groups are most at risk of undertaking behaviours associated with obesity.

- This study presents findings from a cross-sectional survey of 1,460 people aged 16 years and over who live in Wales, conducted through the Time to Talk Public Health (TTPH) population panel. The sample was broadly representative of the population of Wales and was completed either online, face-to-face or by telephone in August 2024. The survey explored types of main meals eaten, lunchtime behaviours when away from home, meal finishing behaviours and portion size practices and attitudes. Data is presented for the full sample and by socio-demographics.

Results:

Eating a main meal made from scratch at home was common but not universal, with 73.9% of participants reporting having done this on five or more days in the last seven days.

Eating behaviours associated with obesity were prevalent; on two or more days in the last seven days, 21.6% of participants had eaten a ready meal, 11.6% a takeaway and 13.2% in a café or restaurant.

Of those who eat lunch out of the home (57.0%), the majority buy lunch on the go at least sometimes (60.0%).

Eating beyond satiety was highly prevalent; 52.9% of participants reported rarely leaving food on their plate even if they felt full, and a further 42.8% only sometimes leaving food on their plate if they felt full before finishing.

Whilst 62.3% of participants agreed they think about portion size when they prepare a meal, only 27.7% agreed they measure or weigh ingredients to get the right amount and nearly a quarter (23.8%) reported self-serving a large portion. The majority (58.9%) agreed they serve portions based on how they feel at the time.

Clear socio-demographic patterns emerged, with the sub-groups most likely to report behaviours associated with obesity already being at higher risk of poorer health outcomes.

The population groups most at risk were:

1. Younger adults (16 to 29 years)

This is a group that needs urgent intervention.

- Participants aged 16 to 29 years were most likely to report having eaten takeaways, ready meals and in cafés or restaurants as their main meal on two or more days in the last week. They were also more likely to have missed a main meal on two days or more.
- When they had lunch outside of their home, they were most likely to have bought it on the go at least sometimes.
- They were also most likely to report self-serving a large portion, choosing a large unhealthy snack and to agree that their portion size depends on how they feel at the time.

2. People who perceived themselves to be a heavier weight

- Compared with participants who perceived themselves to be about right or lighter weight, those who perceived themselves to be a heavier weight were less likely to report having eaten meals made from scratch at home on five or more days in the last week. Moreover, they were more likely to have eaten takeaways and ready meals on two or more days, and to have missed a main meal on two days or more.

- When they are outside of their home at lunchtime, they were more likely to buy their lunch on the go at least sometimes and less likely to prepare it. They were also more likely to miss a lunchtime meal at least sometimes.
- They were also more likely to report self-serving a large portion and choosing a large unhealthy snack. They were more likely to agree that they made extra food in case someone wanted more, that they serve large portions to ensure no one feels hungry, and that their portion sizes depend on their feelings. They were less likely to agree that they think about portion sizes or that they measure or weigh their food to serve the right amount.

3. People living in the most deprived areas

- Across deprivation quintiles, people living in the most deprived areas were least likely to report having eaten a main meal made from scratch at home on five or more days in the last week and were most likely to have eaten a takeaway on two or more days. They were also most likely to have missed a main meal on two or more days.
- They were most likely to report self-serving a large portion and choosing a large unhealthy snack. They were least likely to agree that they think about portion sizes when preparing a meal and most likely to agree that their portion sizes depend on how they feel.

4. Males

- Compared with females, males were more likely to report having eaten takeaways and ready meals on two or more days in the last week.
- A greater proportion of males than females reported rarely leaving food on their plate, even if they feel full before finishing.
- When outside of the home at lunchtime, males were more likely to report buying lunch on the go at least sometimes.
- They were more likely to self-serve a large portion and choose a large-sized snack. They were less likely to agree that they think about portion size and more likely to agree that they serve large portions to ensure no one feels hungry.

Conclusions:

Young adults, males, people living in more deprived areas, and people who perceived themselves to be a heavier weight are more likely to report undertaking eating behaviours associated with increased risk of living with overweight or obesity. Action is needed in Wales to create healthier food environments that support people to opt for healthier options. This requires consideration of the different environments that shape our eating behaviours, including both in-home and out-of-home settings. This new evidence indicates that food consumed in both contexts is contributing to rising obesity levels. Further work is needed to understand the environmental, social and behavioural factors associated with excess consumption. Taken together, this evidence would inform the design of targeted, equitable and effective interventions through practice and policy.

Introduction

Obesity is a complex chronic disease [1] and a major risk factor for a broad range of chronic health conditions, including cardiovascular disease, diabetes and some cancers [2]. It has been estimated that 3.7 million people worldwide die annually from living with obesity, and a further 15 million people die annually from two risk-related health conditions, high blood sugar and high blood pressure [3]. Despite the World Health Organization recognising obesity as a global epidemic nearly two decades ago in 1997, rates continue to increase, with no single country successfully mitigating the trends [4]. Globally, in 2023, self-report data showed that around one in five people were living with obesity, and around one in two people were living with obesity or overweight [5]. Between 1990 and 2022, it was estimated that obesity rates doubled among women and nearly tripled in men [6]. Latest data for Wales shows that more people are living with obesity or overweight than the global average. In 2024-2025, nearly two in three adults in Wales were living with overweight or obesity [7].

Obesity is an avertible health condition that is largely caused by consuming more calories than expended. While genes can influence a person's predisposition towards obesity, the scale of change in obesity rates illustrates that genes cannot be the driver of this increase. However, the environment in which people live and work has changed; therefore, the interaction between genes and environments has also changed. Specifically, the changing food environment has been widely recognised as a key determinant of obesity rates and is, therefore, of interest in reducing obesity levels [2]. A call to explore the drivers of obesity through a wider determinants lens has been made [8].

What people eat and how much they eat are significant behavioural drivers of obesity. Today's food environments are saturated with calorie-dense, ultra-processed and often 'one-size-fits-all' portions that exceed people's needs. These foods are strategically marketed using consumer psychology techniques, making it more difficult for people to opt for healthier options that are typically marketed less. In Great Britain, data from 2021 showed that 60% of people eat outside of their home at least once a week [9], and data from England has shown that participants consumed above recommended daily nutritional intake more often on days they ate out of the home compared to days they did not [10]. Portion sizes have been well-evidenced as a universal driver of increased calorie intake [11].

Understanding on what foods people in Wales are eating and in what quantities, both across the population and in different socio-demographic groups, is currently lacking. This knowledge gap limits the ability to fully support the effective delivery of Welsh Government's Healthy Weight: Health Wales strategy [12], which aims to prevent and reduce obesity in Wales by 2030. Clearer insight into eating behaviours in Wales specifically would help shape targeted interventions, highlight priority areas of future investigation and inform policy development.

This report examines eating behaviours of residents of Wales aged 16 years and over, specifically what meal types they had eaten over the past seven days, their lunchtime eating behaviours when away from the home, meal finishing behaviour, and portion size practices and attitudes. These areas are explored by age, sex, deprivation and perceived weight status to identify population groups most at risk of behaviours associated with increased obesity risk.

Method

Data for this report were collected using the Time to Talk Public Health (TTPH) August 2024 survey. TTPH is a population panel of people aged 16 years or over and living in Wales who broadly represent the population demographic of Wales. Data collection took place between 8th August and 6th September 2024. Panel members were invited to complete the survey through their selected method of online or by telephone. Targeted recruitment of 16 to 29 year olds through face-to-face interviews was also undertaken, along with social media advertising targeting discrete population groups to take part online.

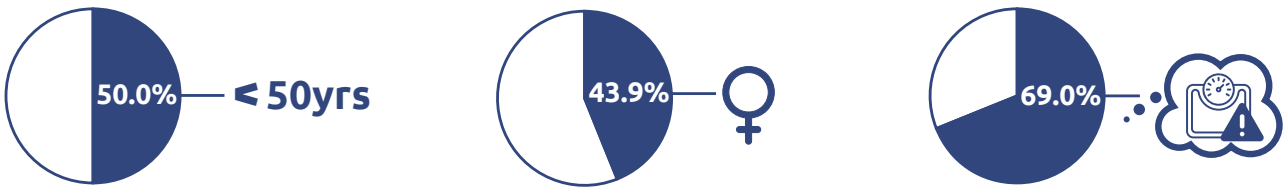
Survey questions, response options and data categorisation for the analyses in this report are presented in the Appendix (Table A1). Four socio-demographic measures were used: age, sex, deprivation quintile and perceived weight status. A final sample of 1,460 participants were included in the analysis (Table A2). All data tables are presented in the Appendix (Table A3-A19). Significant relationships were defined as those with a p-value of less than 0.05.

Further detail on TTPH, the sampling approach and sample is presented in the Appendix.

Results

1.1 Sample

Half (50.0%) of the sample were aged under 50 years and 43.9% were female. The proportions across deprivation quintiles ranged from 13.8% (quintile 1 – most deprived) to 24.2% (quintile 5 – least deprived). Two thirds of the sample (69%) perceived themselves to be heavier in weight than they felt they should be.



A full demographic breakdown and comparison to the population of Wales is presented in Table A2.

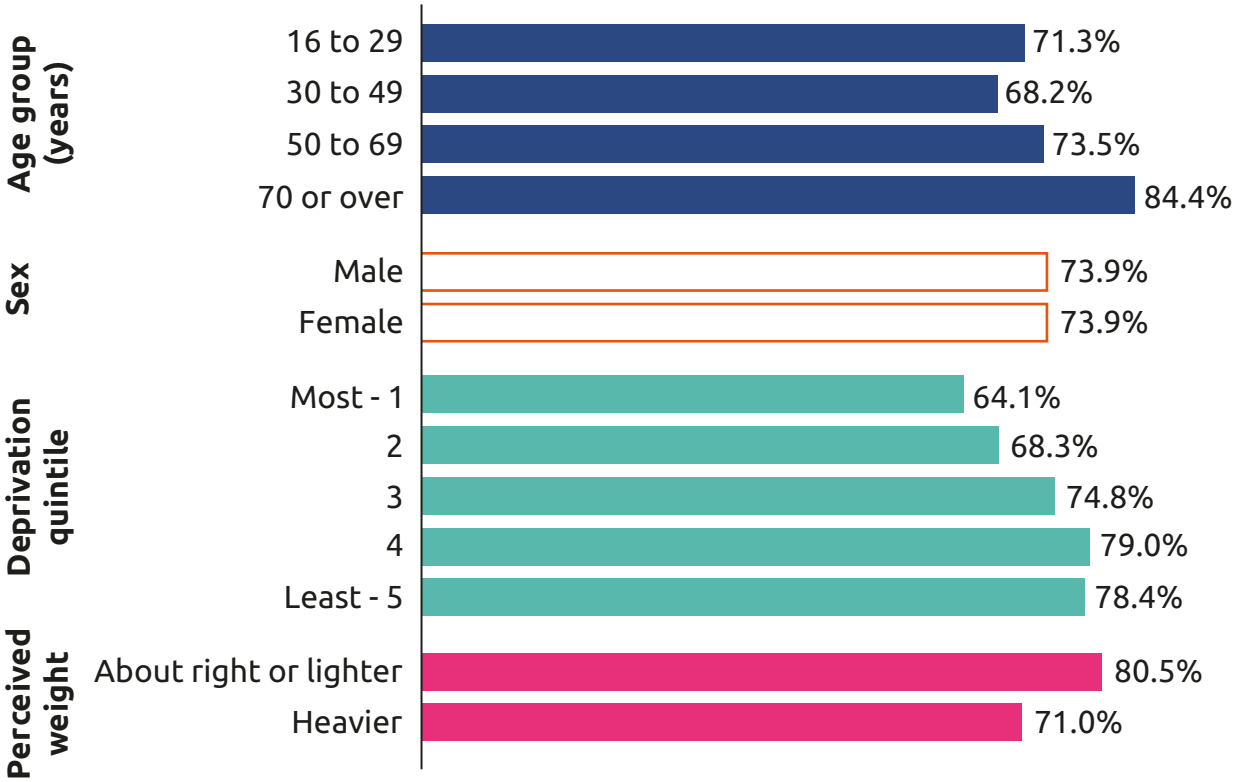
1.2 Types of main meals eaten

Participants were asked to recall the number of days in the last week, if any, on which they had eaten four types of main meals or missed a main meal.

Eaten meals made from scratch at home

Most participants (95.0%) had eaten a main meal made from scratch within the last seven days; 73.9% reported having done so on five or more days. Significant differences in the frequency of eating a main meal made from scratch were found by age, deprivation and perceived weight (Table A3). Figure 1 shows that those aged 70 years and over, living in the second least deprived quintile, and who perceived themselves to be about right or lighter weight ate the most of this meal type on five or more days.

Figure 1: Proportion who ate a main meal made from scratch at home on five days or more in the last seven days, by socio-demographics [see note]



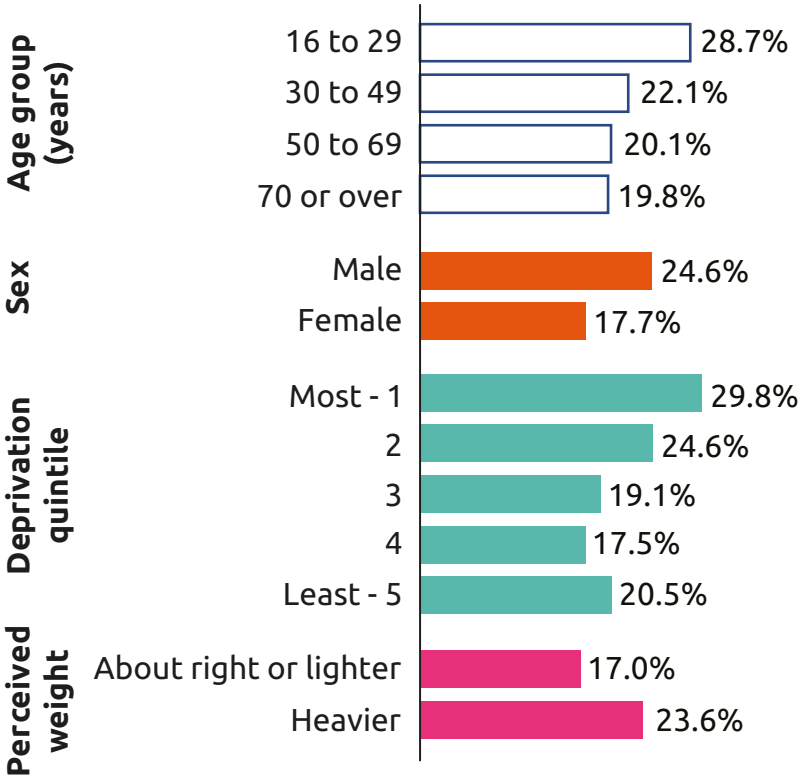
Note: Solid bars = significant relationship ($p<0.05$); outline only = non-significant relationship.

In multivariate analysis, age, deprivation and perceived weight were found to be independently associated with having eaten a meal made from scratch at home on five or more of the last seven days (versus zero to four days; Table A3). Compared with those aged 70 years and over, all younger age groups were significantly less likely to have eaten this meal type on five or more days (adjusted odds ratios [AORs] 0.43 to 0.56, all $p\leq0.003$); 30 to 49 year olds were the least likely. Those living in the most deprived and second most deprived quintiles were significantly less likely than those in the least deprived quintile (AORs 0.53 to 0.65, both $p\leq0.020$). Those who perceived themselves to be a heavier weight were less likely than those who perceived themselves to be about right or lighter weight (AOR 0.58, $p<0.001$).

Eaten ready meals

Two fifths of the sample (41.7%) had eaten a ready meal in the last week (21.6% on two or more days). Significant differences in the frequency of eating a ready meal were found by sex, deprivation and perceived weight (Table A4). Figure 2 shows that males, those living in the most deprived quintile, and those who perceived themselves to be a heavier weight were most likely to report having eaten ready meals on two or more days.

Figure 2: Proportion who ate a ready meal on two days or more in the last seven days, by socio-demographics [see note]



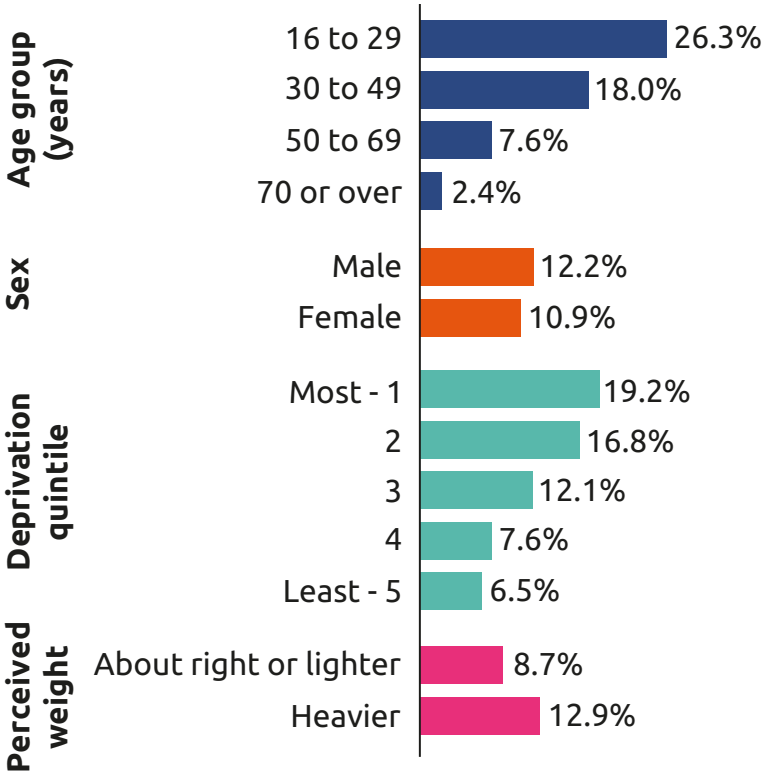
Note: Solid bars = significant relationship ($p<0.05$); outline only = non-significant relationship.

In multivariate analysis, having eaten a ready meal on two or more days in the last week (versus zero or one day) was independently associated with being male (compared with female; AOR 1.52, $p=0.002$) and who perceived themselves to be a heavier weight (compared with being about right or lighter weight; AOR 1.66, $p=0.001$; Table A5). There was no independent association with deprivation.

Eaten takeaways

Overall, 39.2% had eaten a takeaway in the last seven days, with 11.6% having done so on two or more days. Takeaway consumption varied significantly by age, sex, deprivation and perceived weight (Table A4). Figure 3 shows that those aged 16 to 29 years, males, those living in the most deprived quintile, and those who perceived themselves to be a heavier weight were most likely to report having eaten takeaways on two or more days.

Figure 3: Proportion who ate a takeaway on two days or more in the last seven days, by socio-demographics [see note]



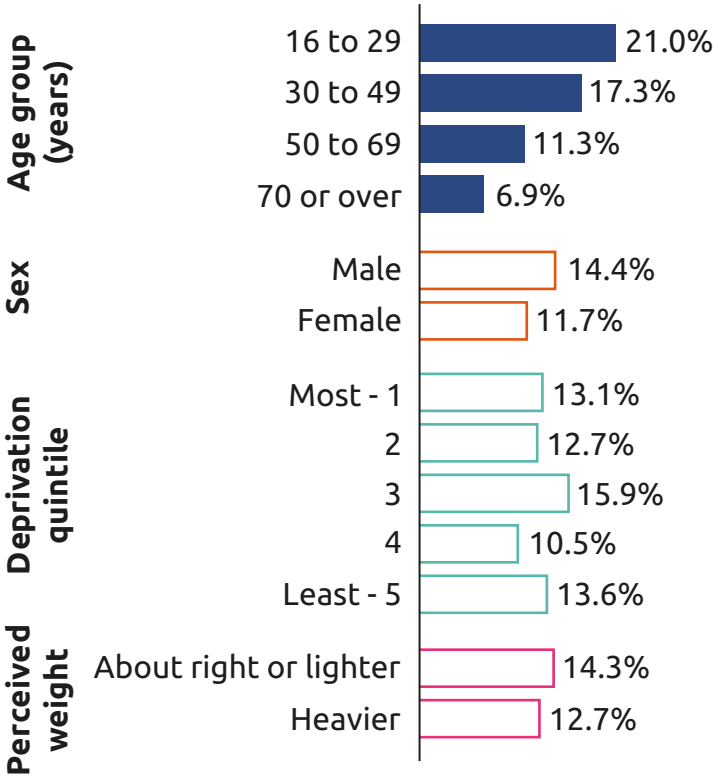
Note: Solid bars = significant relationship ($p<0.05$); outline only = non-significant relationship.

In multivariate analysis, having eaten a takeaway on two or more days (versus zero or one day) was found to be independently associated with age, deprivation and perceived weight. Compared with those aged 70 years and over, all younger age groups were significantly more likely to have eaten a takeaway on two or more days (AORs 2.92 to 15.22, all $p\leq0.010$); 16 to 29 year olds were the most likely. Participants living in the three more deprived quintiles were more likely than those in the least deprived quintile (AORs 2.03 to 2.46, all $p\leq0.013$). Those who perceived themselves to be a heavier weight were more likely than those who perceived themselves to be about right or lighter weight (AOR 2.23, $p<0.001$).

Eaten in a café or restaurant

Nearly half of participants (46.9%) had eaten a main meal in a café or restaurant at least once in the last seven days, with 13.2% having done so on two or more days. Only age showed a significant relationship with this meal type (Table A4). Those aged 16 to 29 years were most likely to report having eaten in a café or restaurant on two or more days, with the proportion decreasing with age (Figure 4).

Figure 4: Proportion who ate in a café or restaurant on two days or more in the last seven days, by socio-demographics [see note]



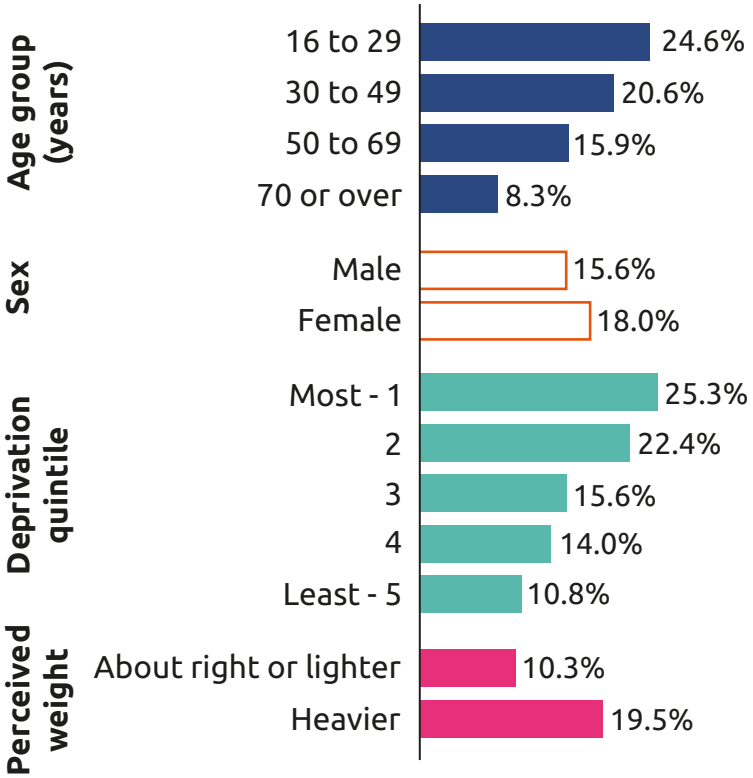
Note: Solid bars = significant relationship ($p<0.05$); outline only = non-significant relationship.

In multivariate analysis, having eaten in a café or restaurant on two or more days (versus zero or one day) was independently associated with age and sex (Table A5). Compared with those aged 70 years and over, all younger age groups were significantly more likely to have eaten in a café or restaurant on two or more days (AORs 1.76 to 3.93, all $p\leq0.035$); 16 to 29 year olds were the most likely. Males were more likely than females to have done so (AOR 1.39, $p=0.044$).

Missed a main meal

Nearly a third of participants (30.1%) had missed a main meal on at least one of the last seven days; 16.7% had missed a main meal on at least two days. Missing a main meal was significantly associated with age, deprivation and perceived weight (Table A4). Participants aged 16 to 29 years, those living in the most deprived quintile, and those who perceived themselves to be a heavier weight were most likely to have reported missing a main meal on two or more days (Figure 5).

Figure 5: Proportion that missed a main meal on two or more days, by socio-demographics [see note]



Note: Solid bars = significant relationship ($p<0.05$); outline only bars = non-significant relationship.

In multivariate analysis, having missed a main meal on two or more days (versus zero or one day) was independently associated with age and deprivation (Table A5). Compared to those aged 70 years and over, all younger groups were significantly more likely to have missed a main meal on two or more days (AORs 1.83 to 3.71, all $p\leq0.013$). Participants living in the two most deprived quintiles were more likely than those living in the least deprived quintile (AORs 2.15 to 2.48, both $p\leq0.001$). Perceived weight was not significantly independently associated.

1.3 Lunchtime eating behaviours when away from home

Participants were asked if they ever eat lunch away from their home, and if so, how often they buy lunch on the go, prepare lunch at home or miss a lunchtime meal.

More than half of participants (57.0%) reported they eat lunch away from their home (Table A6). This proportion decreased significantly as age increased, with more than twice as many 16 to 29 year olds reporting eating lunch away from home (75.1%) than those aged 70 years and over (34.0%). No significant differences were found by sex, deprivation quintile or perceived weight.

In multivariate analysis, age remained independently associated with eating lunch away from home (compared to not ever eating lunch away from home; Table A6). Compared with participants aged 70 years and over, all younger groups were more likely to eat lunch away from home (AORs 2.27 to 6.34, all $p<0.001$); 16 to 29 year olds were most likely.

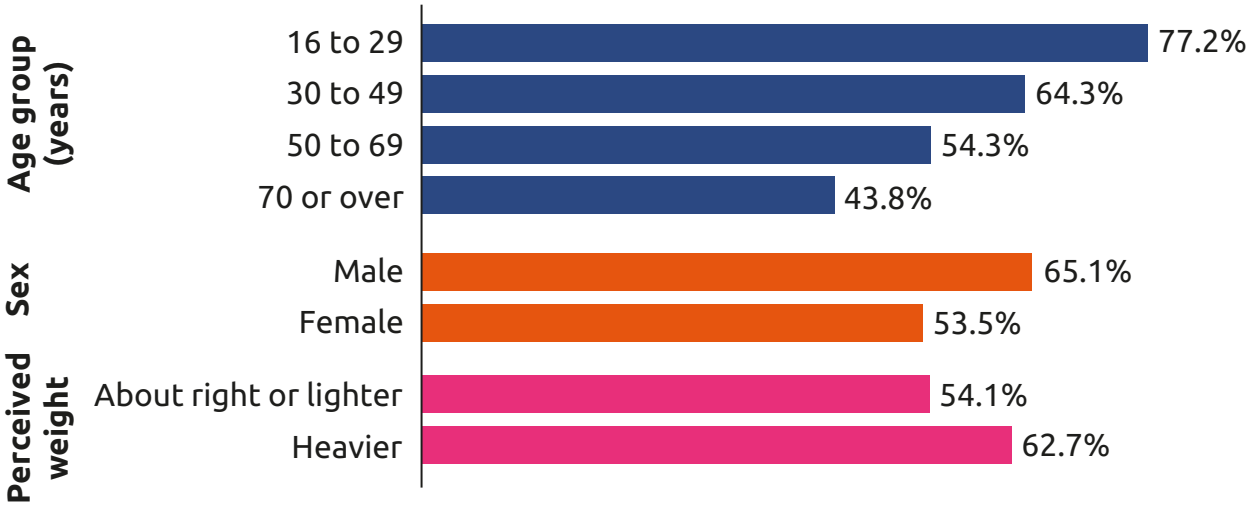
Of participants who reported eating lunch away from their home (n = 830; Tables A7-A9):

- 60.0% bought lunch on the go at least sometimes (23.7% often or always)
- 71.0% prepared lunch at home at least sometimes (41.4% often or always)
- 40.6% missed a lunchtime meal at least sometimes (12.8% often or always)

Buying lunch on the go

Of those who reported eating lunch away from their home, significant differences in the proportion that buy lunch on the go were found by age, sex and perceived weight (Table A7). Figure 6 shows that 16 to 29 year olds, males and those who perceived themselves to be a heavier weight were more likely to report buying on the go at least sometimes.

Figure 6: Proportion who bought lunch on the go at least sometimes by socio-demographics (only significant relationships are shown)

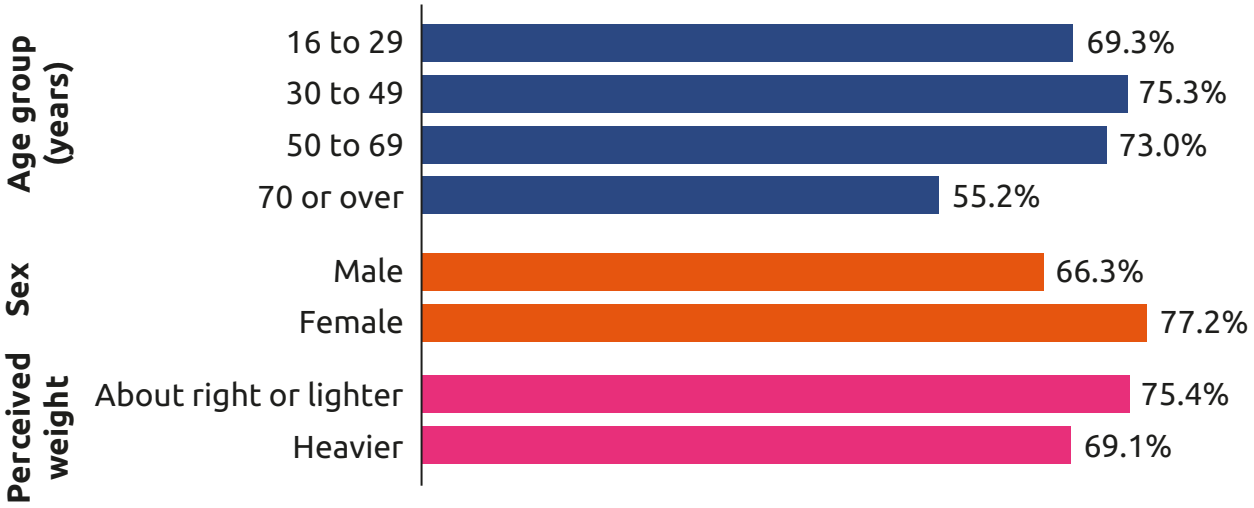


In multivariate analysis, age, sex and perceived weight remained independently associated with buying lunch on the go at least sometimes (versus never or rarely; Table A7). Compared with those aged 70 years and over, the two youngest groups were more likely to buy lunch on the go (AORs 2.44 to 5.39, both $p<0.001$). No significant difference was found with 50 to 69 year olds. Males were more likely than females (AOR 1.75, $p<0.001$) and those who perceived themselves to be a heavier weight were more likely than those who perceived themselves to be about right or lighter weight (AOR 1.83, $p<0.001$).

Preparing lunch at home

Of those who reported eating lunch away from their home, significant differences in preparing lunch at home to eat outside of the home were found by age, sex and perceived weight (Table A8). Participants aged 30 to 49 years, females and those who perceived themselves to be about right or lighter weight were more likely to report preparing lunch at home at least sometimes (Figure 7).

Figure 7: Proportion who prepared lunch at home at least sometimes when away from the home by socio-demographics (only significant relationships are shown)

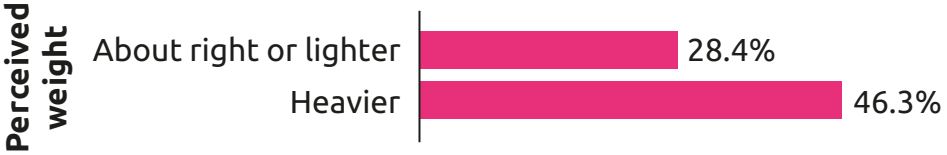


In multivariate analysis, age, sex, and perceived weight remained independently associated with preparing lunch at home when eating away from home at least sometimes (versus never or rarely) (Table A8). Participants aged 30 to 49 and 50 to 69 years were more likely to prepare lunch at home than those aged 70 years and over (AORs 2.36 to 2.45, p<0.001). No significant difference was found for 16 to 29 year olds. Males were less likely than females (AOR 0.58, p=0.001), and those who perceived themselves as a heavier weight were less likely than those who perceived themselves to be about right or lighter weight (AOR 0.68, p=0.032).

Missing a lunchtime meal

Of those who reported eating lunch away from their home, only perceived weight was significantly associated with frequency of missing a lunchtime meal (Table A9). Figure 8 shows that those who perceived themselves to be a heavier weight reported missing a lunchtime meal at least sometimes the most.

Figure 8: Proportion who missed a lunchtime meal at least sometimes when away from home, by socio-demographics (only significant relationships are shown)



Perceived weight remained independently associated with missing a lunchtime meal in multivariate analysis (Table A9). Participants who perceived themselves to be a heavier weight were more likely to miss a lunchtime meal than those who perceived themselves to be about right or lighter weight (AOR 2.01, p<0.001).

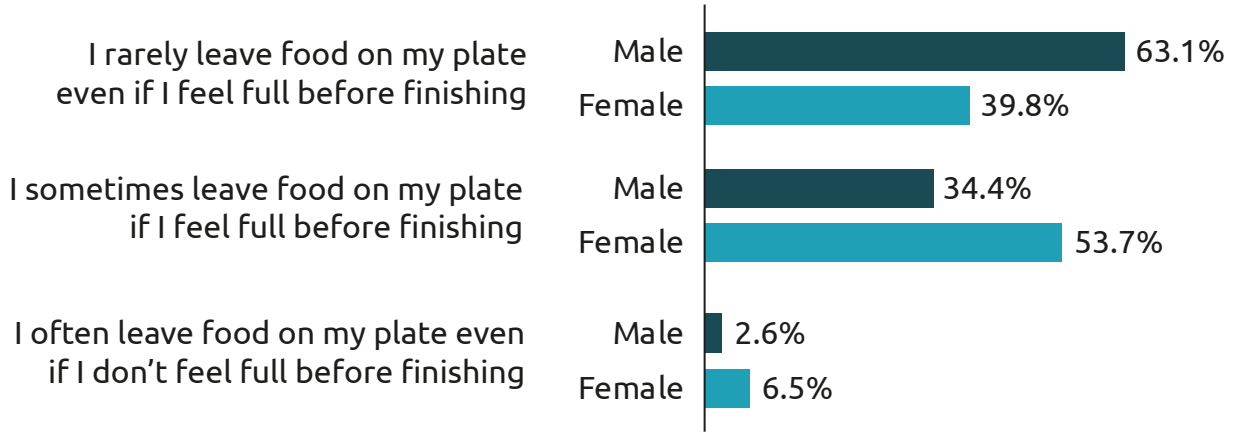
1.4 Meal finishing behaviour

Participants were asked to best describe how they finish a meal in relation to their level of fullness.

- 52.9% of participants reported that they rarely leave food on their plate, even if they are full before finishing.
- 42.8% reported that they sometimes leave food on their plate if they feel full before finishing.
- 4.3% reported often leaving food on their plate even if they do not feel full.

Only sex showed a significant relationship with meal finishing behaviour (Table A10). As shown in Figure 9, more males than females reported rarely leaving food on their plate even if they are full, while more females than males reported sometimes leaving food even if they are full and often leaving food even if they do not feel full before finishing.

Figure 9: Proportion of participants finishing the food on their plate in relation to level of fullness, by socio-demographics (only significant relationships are shown)

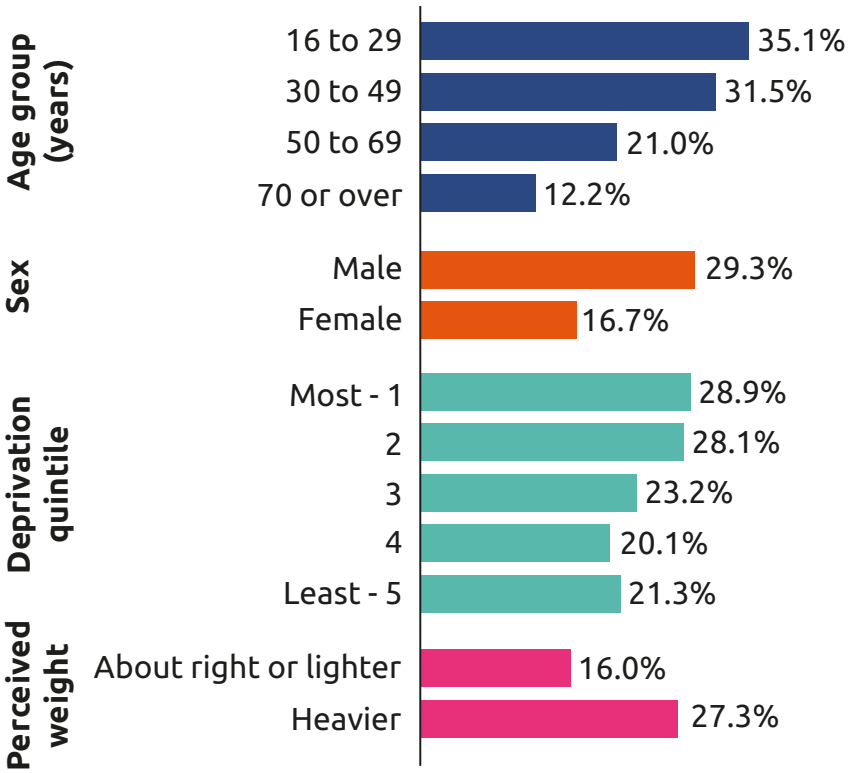


1.5 Portion size practices and attitudes

Participants were asked to describe the portion size they typically typically self-serve.

Nearly a quarter of participants (23.8%) reported typically self-serving a large portion, 67.9% a moderate portion, and 8.3% a small portion. Significant differences in portion size served were found by age, sex, deprivation and perceived weight (Table A11). Figure 10 shows that younger participants, males, those living in more deprived areas and those who perceived themselves to be a heavier weight were most likely to report self-serving a large portion.

Figure 10: Proportion self-serving a large portion by socio-demographics



In multivariate analysis, age, sex and perceived weight were found to be independently associated with self-serving a large portion (versus a small or moderate portion; Table A11). Compared to participants aged 70 years and over, all younger groups were more likely to self-serve a large portion (AORs 1.77 to 5.06, all p≤0.007); 16 to 29 year olds were most likely. Males were more likely than females (AOR 2.32, p=0.001), and those who perceived themselves to be a heavier weight were more likely than those who perceived themselves to be about right or lighter weight (AOR 2.42, p<0.001).

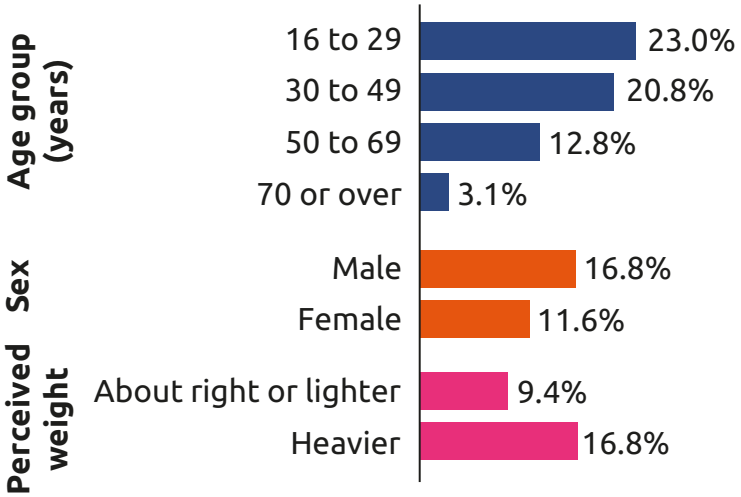
Participants were asked to describe the size of unhealthy snack, if any, they typically have.

Only 7.4% of participants responded that they do not eat unhealthy snacks, with most participants providing a typical unhealthy snack size (Table A12). Significant differences in the proportion eating unhealthy snacks (of any size) were found by age and perceived weight (Table A12). Figure 11 shows that participants aged 16 to 49 years and those who perceived themselves to be a heavier weight were more likely to report eating unhealthy snacks.

Figure 11: Proportion reporting that they eat unhealthy snacks, by socio-demographics (only significant relationships are shown)

Of those who eat unhealthy snacks (n=1,347), 14.6% reported they would typically choose a large snack, 54.7% a moderate snack, and 30.7% a small snack. Significant differences in snack size choice were found by age, sex and perceived weight (Table A13). Figure 12 shows that 16 to 29 year olds, males, and those who perceived themselves to be a heavier weight were most likely to choose a large snack.

Figure 12: Proportion choosing a large unhealthy snack, by socio-demographics (only significant relationships are shown)



In multivariate analysis, age, sex and perceived weight were independently associated with choosing a large snack (versus a small or moderate snack; Table A13). Compared to those aged 70 years and over, all younger groups were more likely to typically choose a large snack (AORs 4.25 to 11.92, all $p<0.001$); 16 to 29 year olds were most likely. Males were more likely than females (AOR 1.74, $p=0.001$), and those who perceived themselves to be a heavier weight were more likely than those who perceived themselves to be about right or lighter weight (AOR 2.39, $p<0.001$).

Participants were asked how much they agreed or disagreed with six statements on portion size when preparing a meal.

I think about portion size

Nearly two thirds of participants (62.3%) agreed that they think about portion size when they prepare a meal (16.8% disagreed; 20.9% neither agreed nor disagreed). This varied significantly by sex and perceived weight (Table A14). Figure 13 shows that females and those who perceived themselves to be about right or lighter weight were more likely to agree.

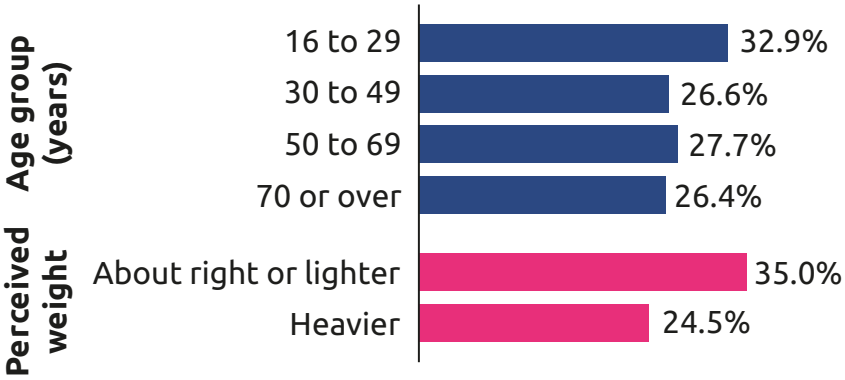
Figure 13: Proportion who agreed that they think about portion size when they prepare a meal, by socio-demographics (only significant relationships are shown)

In multivariate analysis, sex and perceived weight were independently associated with agreeing with thinking about portion size when preparing a meal (versus not agreeing; Table A14). Males were less likely to agree than females (AOR 0.65, p<0.001), and those who perceived themselves to be a heavier weight were less likely to agree than those who perceived themselves to be about right or lighter weight (AOR 0.63, p<0.001). While there was no overall association with deprivation, participants living in the two most deprived quintiles were less likely than those living in the least deprived quintile to think about portion size (AORs 0.64 to 0.66, p≤0.029).

I measure or weigh ingredients to prepare the right amount of food

Over a quarter of participants (27.7%) agreed that they measure or weigh ingredients to prepare the right amount of food (52.9% disagreed; 19.3% neither agreed nor disagreed). This varied significantly by age and perceived weight (Table A15). Figure 14 shows that those aged 16 to 29 years and those who perceived themselves to be about right or lighter weight were most likely to agree.

Figure 14: Proportion who agreed they measure or weigh ingredients, by socio-demographics (only significant relationships are shown)

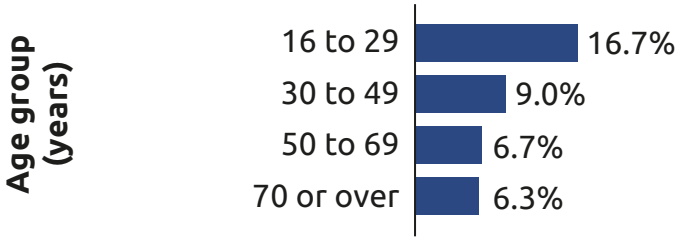


In multivariate analyses, only perceived weight was independently associated with agreeing with measuring or weighing ingredients to prepare the right amount of food (versus not agreeing; Table A15). Participants who perceived themselves to be a heavier weight were less likely to agree than those who perceived themselves to be about right or lighter weight (AOR 0.62, p<0.001).

I use the images on packets to give me an idea of how much food each person should have

Only 8.4% of participants agreed they use imagery on packets to inform portion size (70.5% disagreed; 21.1% neither agreed nor disagreed). This only varied significantly by age (Table A16). Figure 15 shows that those aged 16 to 29 years were most likely to agree they use of imagery.

Figure 15: Proportion who agreed that they use imagery on packets to inform portion size, by socio-demographics (only significant relationships are shown)

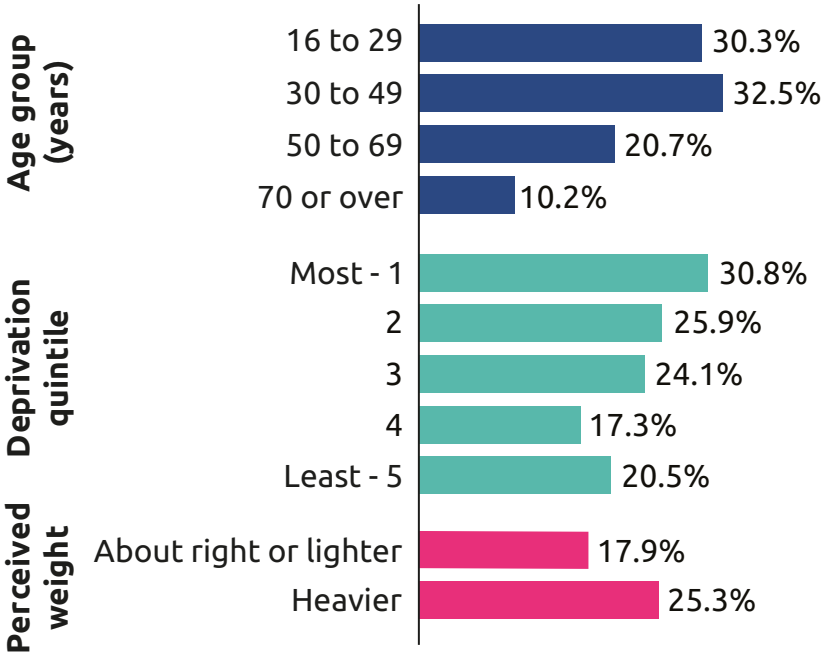


In multivariate analysis, age remained the only factor independently associated with agreeing with using images on packets to inform portion size (versus not agreeing; Table A16). Compared to those aged 70 years and over, only those aged 16 to 29 were more likely to agree they used images on packets (AOR 3.14, p=0.001). No significant differences were found with 30 to 49 year olds or 50 to 69 year olds.

I make extra food in case I or other people want more

Nearly a quarter of participants (23.0%) agreed that they make extra food in case someone wants more (57.4% disagreed; 19.6% neither agreed nor disagreed). This varied significantly by age, deprivation quintile and perceived weight (Table A17). Figure 16 shows that those aged 30 to 49 years, those living in the most deprived quintile, and those who perceived themselves to be a heavier weight were most likely to agree.

Figure 16: Proportion who agreed that they make extra food in case they or other people want more, by socio-demographics (only significant relationships are shown)

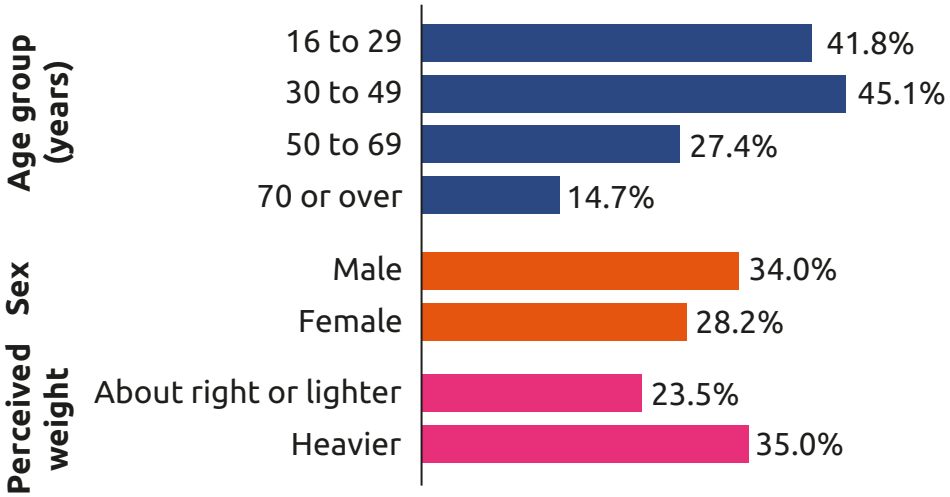


In multivariate analyses, age and perceived weight were independently associated with agreeing to making extra food in case someone wants more (versus not agreeing; Table A17). Compared with those aged 70 years and over, all younger groups were more likely to agree (AORs 2.16 to 4.00, $p \leq 0.001$); 30 to 49 year olds were most likely to agree. Participants who perceived themselves to be a heavier weight were more likely to agree than those who perceived themselves to be about right or lighter weight (AOR 1.70, $p<0.001$).

I tend to serve large portions at mealtimes to make sure no one ends up feeling hungry

Nearly a third of participants (31.5%) agreed that they serve large portions at mealtimes to make sure no one ends up feeling hungry (43.4% disagreed; 25.1% neither agreed nor disagreed). Significant differences were found by age, sex and perceived weight (Table A18). Figure 17 shows that those aged 30 to 49 year olds, males, and those who perceived themselves to be a heavier weight agreed the most.

Figure 17: Proportion who agreed that they serve large portion sizes at mealtimes, by socio-demographics (only significant relationships are shown)

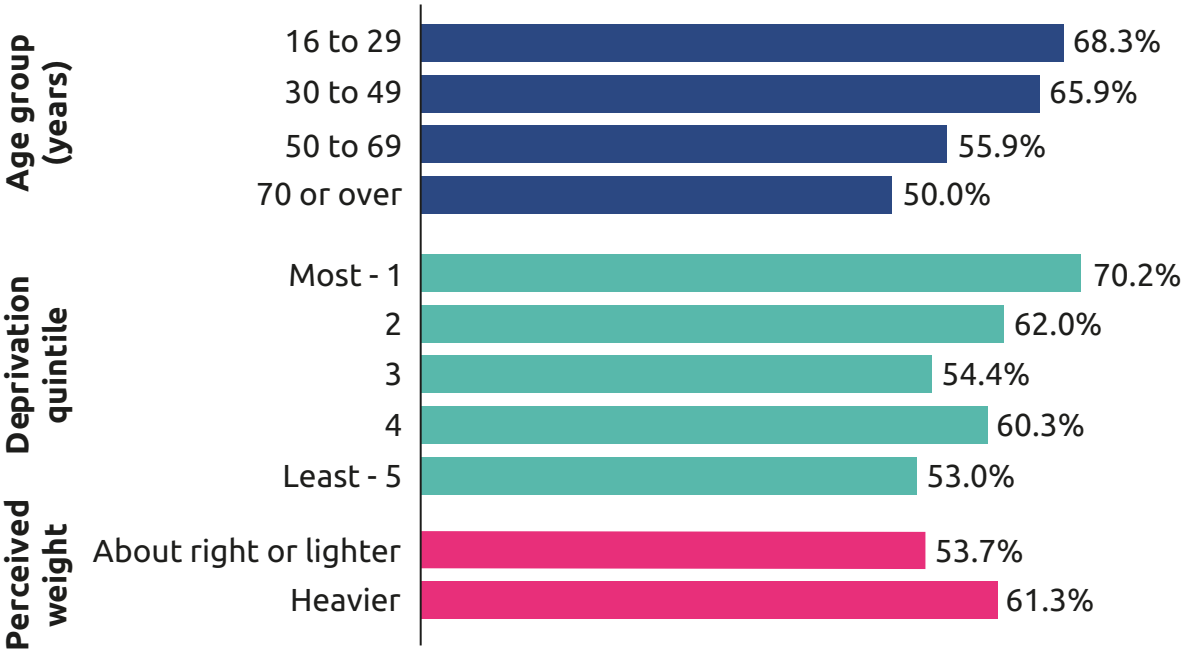


In multivariate analyses, age, sex and perceived weight remained independently associated with agreeing with serving large portions at mealtimes to make sure no one ends up feeling hungry (Table A18). Compared with participants aged 70 years and over, all younger age groups were more likely to agree (AORs 2.04 to 4.92, $p \leq 0.001$); 30 to 49 year olds were most likely. Males were more likely to agree than females (AOR 1.46, $p=0.002$), and those who perceived themselves to be a heavier weight were more likely to agree than those who perceived themselves to be about right or lighter weight (AOR 2.04, $p<0.001$).

My portion sizes depend on how I feel at the time

Over half of participants (58.9%) agreed that their portion sizes depend on how they feel at the time (21.8% disagreed; 19.2% neither agreed nor disagreed). This varied significantly by age, deprivation and perceived weight (Table A19). Figure 18 shows that participants aged 16 to 29 years, those living in the most deprived quintile, and those who perceived themselves to be a heavier weight agreed the most.

Figure 18: Proportion who agreed that their portion sizes depend on how they feel at the time, by socio-demographics (only significant relationships are shown)



In multivariate analysis, age, deprivation quintile and perceived weight were found to be independently associated with agreeing that portion sizes were dependent on feelings (versus not agreeing; Table A19). Compared with participants aged 70 years and over, the two younger age groups were more likely to agree (AORs 1.89 to 2.12, $p<0.001$); no significant difference was found for 50 to 69 year olds. Those living in the most deprived quintile and the second least deprived quintile were more likely than those living in the least deprived quintile to agree (AORs 1.38 to 1.82, $p\leq0.043$). Participants who perceived themselves to be a heavier weight were more likely to agree than those who perceived themselves to be about right or lighter weight (AOR 1.50, $p=0.001$).

Discussion

The food environment plays a large role in rising population-level obesity rates [2,8], as it is highly influential on what and how much people eat. The findings in this report reinforce the need to create healthier food environments, both inside and outside the home, as we know that healthy lives start in our everyday places. This means creating environments that make healthier food the easier option for people in terms of portion size, accessibility and availability. Identifying the population groups potentially more at risk of obesity based on their eating behaviours is imperative to enable the design of interventions that can be targeted, equitable and impactful [12]. Such interventions can be at an individual level, seeking to change people's behaviours, but also at a structural level through policy changes (e.g. advertisement, planning, transport) to protect people from the calorie-dense and sedentary environments.

This report contributes to our understanding of eating behaviours at both a population level and by socio-demographic groups in Wales, helping to inform the implementation of Welsh Government's Healthy Weight: Healthy Wales strategy [12]. While eating a meal made from scratch at home was widespread, with 73.9% of participants reporting having done so on five or more days in the last week, eating food prepared outside of the home was common across most population groups. Clear socio-demographic patterning emerged, with the sub-groups that reported behaviours associated with obesity already being at higher risk of poorer health outcomes.

Who is most at risk of living with obesity based on their eating behaviours?

Within each socio-demographic group, there was a sub-group who reported higher engagement in eating behaviours associated with living with obesity. The sub-groups are presented in the order of priority for intervention based on the range of risky behaviours reported.

1. Age: Younger adults (aged 16 to 29 years)

The behaviours reported by younger adults (aged 16 to 29 years) in this study suggest they are a high-urgency group for intervention. Results showed they were more likely than other age groups to report having eaten a ready meal, a takeaway and in a café or restaurant on two or more of the last seven days. Additionally, they were the most likely to report having missed a main meal on two or more days.

Younger adults were also most likely to report eating lunch out of the home and, when doing so, most likely to buy lunch on the go and least likely to prepare it at home. They were the age group most likely to self-serve a large portion, and of those who eat an unhealthy snack, they were the most likely to choose a large-sized snack. They were the age group most likely to agree that their portion sizes depend on how they feel at the time, that they measure their food to prepare the right amount and that they use images on packets to inform portion size.

2. Perceived weight: Perceived themselves to be a heavier weight

Participants who perceived themselves to be a heavier weight were less likely to have eaten meals made from scratch on five or more days in the last week, and more likely to have eaten ready meals and takeaways on two or more days (compared with those who perceived themselves to be about right or lighter weight). They were also more likely to buy lunch on the go at least sometimes and less likely to prepare lunch at home. This sub-group were more likely to report having missed a main meal on two or more of the last seven days, and missing lunchtime meals at least sometimes.

Those who perceived themselves to be a heavier weight were more likely to self-serve large portions and choose large-sized unhealthy snacks. They were less likely to agree that they think about portion size or that they measure or weigh their food to serve the right amount. Additionally, they were more likely to agree they make extra food in case someone wanted more, that they would serve large portions to ensure no one feels hungry, and that their portion sizes depend on their feelings.

3. Deprivation: Living in more deprived areas

Across deprivation groups, participants who lived in the most deprived areas (quintile 1) were least likely to have eaten meals made from scratch at home on five or more days in the last week, and most likely to report having had takeaways on two or more days. However, they were also most likely to report they had missed a main meal on two or more days. They were the group least likely to agree that they think about portion size when preparing a meal, and most likely to agree that their portion sizes depend on how they feel.

4. Sex: Males

Males were more likely than females to report having eaten ready meals and takeaways on two or more days in the last week. When eating lunch out of the home, they were also more likely to buy lunch on the go and less likely to prepare lunch at home. In terms of finishing a meal, males more commonly reported rarely leaving food on their plate, even if they feel full before finishing. Males were more likely to serve themselves a large portion and choose a large-sized snack. They were less likely to agree that they think about portion size but more likely to agree that they tend to serve large portions to ensure no one feels hungry.

How do these findings connect to what is already known?

The 'UK National Diet and Nutrition Survey' highlighted a decade ago that adults under 30 years were the highest consumers of meals eaten out of the home and takeaways [13]. Although the most recent iteration of this survey has not presented age breakdowns for these data, our findings show that younger adults remain a key at-risk group in Wales. Evidence from the 'The Food & You Survey' 2018 showed levels of ready meals consumption across Wales, England and Northern Ireland (25% at least once a week) similar to those identified in this study (27%), along with higher consumption among males than females [14]. However, the most recent survey iteration has not continued to capture ready meal consumption, limiting up-to-date comparison [15].

It is not surprising that people who live in more deprived areas eat more takeaways, given that fast food outlets are often concentrated in areas of deprivation [16, 17]. This increases exposure to these often calorific foods and makes takeaways a readily available and accessible meal choice. In this

study, a substantial proportion of participants bought lunch on the go, and meal deals have been found to be a popular option [18]. Evidence has shown that three-quarters of meal deals exceed the recommended calorie intake for lunchtime [19].

For these meal types (e.g. takeaways, ready meals, buying lunch on the go), the concern is not solely on their calorie content, but also on their nutritional composition as they are typically higher in fat and salt [20,21]. The 'Food (Promotion and Presentation) (Wales) Regulations' policy was implemented in 2025 and was designed to restrict "promotions that can encourage over-consumption" [22]. An additional source of calorie intake not considered in this study is drinks. Evidence has shown those who consume sugar-sweetened drinks buy less healthy foods and more sweet snacks [23]. While the UK soft drink industry levy has supported reduction of sugar content in sugar sweetened drinks, and subsequently reduced sugar intake from drinks [23], understanding drivers of drink consumption in Wales is also important to provide a fuller picture as the measures need to change behaviour for drinks may be different to those for food.

Portion size has been consistently linked to energy intake, with larger portions resulting in increased energy intake [11]. As there is no universally appropriate portion size – given that nutritional needs vary according to the daily behaviours of individuals – many people struggle to determine how much food they should eat or know if they are having too much. In this study, nearly a quarter of participants (23.8%) reported serving themselves large portions, highlighting how portion sizes being inflated may have become normalised over time. Evidence indicates that reducing portion sizes within the environment can help reset people's expectations of what constitutes a 'normal' amount of food, ultimately leading to lowered energy intake [11]. Reversing the trend of eating large portions represents an important opportunity for improving dietary behaviours at a population level.

Connected to portion sizes is the learned behaviour of eating to empty a plate instead of using internal satiety signals. More than half the sample (52.9%) reported rarely leaving food on their plate despite feeling full. This can lead to increased energy intake. Changing social norms around portion size serving and when to finish eating will be important.

Implications for policy and practice

The Healthy Weight: Healthy Wales Strategy [12] sets out that by 2030 *"we will create food environments where healthier food and drink is widely available, appealing and affordable, making the healthier choice the easy choice"*. Young adults, males, people living in more deprived areas, and people who perceived themselves to be a heavier weight are at risk of living with overweight and obesity. Action is needed in Wales to create healthier food environments that support people to opt for healthier options. This requires consideration of the different environments that shape our eating behaviours, including both in-home and out-of-home settings. While all population groups would benefit from intervention, the distinct differences in eating behaviours across socio-demographic groups shows that the scale and intensity of intervention needed for some groups is greater (e.g. proportionate universalism).

This new evidence indicates that food consumed in both contexts is contributing to rising obesity levels. Further work is needed to understand the environmental, social and behavioural factors of excess consumption. Key messages to inform next steps are as follows:

1. **Young adults, males, people living in more deprived areas, and people who perceive themselves to be a heavier weight are likely to be eating more food out-of-home and takeaways. These foods are often served in larger portions and are higher in calories, fat and salt, which increases the risk of living with overweight or obesity. More action is needed to address what drives these behaviours.**

2. **People report eating larger portion sizes and continuing to eat even when they feel full. Action is needed to shift perspectives and behaviours on what a healthy portion size looks like and to support changes in eating behaviours.**

3. **We need to better understand the environmental, social and behavioural factors that lead people to eat more than they need, both at home and out-of-home, in order to help shape policies that could tackle these wider influences and make opting for more healthy options in all settings easier.**

References

1. Government Office for Science. Reducing obesity: obesity system map. 2007. https://www.gov.uk/government/publications/reducing-obesity-obesity-system-map.
2. World Health Organization. WHO acceleration plan to stop obesity. 2023. Geneva. https://iris.who.int/server/api/core/bitstreams/ea789198-6336-45e3-adfd-7abb4b147b69/content.
3. Our World in Data. Deaths by risk factor, world, 2023. 2026. https://ourworldindata.org/grapher/number-of-deaths-by-risk-factor.
4. GBD 2021 Adult BMI Collaborators. Global, regional, and national prevalence of adult overweight and obesity, 1990–2021, with forecasts to 2050: a forecasting study for the Global Burden of Disease Study 2021. 2025. The Lancet, 405(10481). doi: 10.1016/S0140-6736(25)00355-1.
5. OECD. Health at a Glance 2025: OECD Indicators. OECD Publishing, Paris. doi: 10.1787,8f9e3f98-en.
6. NCD Risk Factor Collaboration. Worldwide trends in underweight and obesity from 1990 to 2022: a pooled analysis of 3663 population-representative studies with 222 million children, adolescents, and adults. 2024. The Lancet, 403(10431). doi: 10.1016/S0140-6736(23)02750-2.
7. Welsh Government. National Survey for Wales headline results: April 2024 to March 2025. 2025. https://www.gov.wales/national-survey-wales-headline-results-april-2024-march-2025.
8. Mulvihill C, Aswani N. Overweight and obesity management: summary of updated NICE guidance. 2025. BMJ Practice, 391. doi: 10.1136/bmj.r2286.
9. Mariani E, Chacko A, Stewart I, Hadley M, Sleeman C, Byatt LB et al. How eating out contributes to our diets. 2024. NESTA. https://media.nesta.org.uk/documents/How_eating_out_contributes_to_our_diets_Nesta_Report.pdf.
10. Garbutt J, Townsend N, Johnson L, Jones A, O'Flaherty M, Colombet Z et al. The contribution of the out-of-home food (OOHF) sector to the national diet: a cross-sectional survey with repeated 24-hour recalls of adults in England (2023-2024). Pre-print. doi: 10.1101/2025.06.30.25330369.
11. Robinson E, Haynes A. The problem of large portion sizes: a norm-comparison theory explaining the psychological influence and public health implications of food portion size. 2025. Physiology & Behaviour, 300(115038). doi: 10.1016/j.physbeh.2025.115038.
12. Welsh Government. Healthy Weight: Healthy Wales strategy. 2023. https://www.gov.wales/healthy-weight-strategy-healthy-weight-healthy-wales.
13. Adams J, Goffe L, Brown T, Lake A, Summerbell C, White M et al. Frequency and socio-demographic correlates of eating meals out and take-away meals at home: cross-sectional analysis of the UK national diet and nutrition survey, waves 1–4 (2008–12). 2015. International Journal of Behavioural Nutrition and Physical Activity, 51. doi: 10.1186/s12966-015-0210-8.
14. Food Standards Agency. The food and you survey – wave 5; combined report for England, Wales and Northern Ireland. 2018. NatCen Social Research. https://www.food.gov.uk/sites/default/files/media/document/food-and-you-wave-5-combined-report.pdf.
15. Food Standards Agency. Food and you 2: Wave 10 key findings. 2025. https://www.food.gov.uk/sites/default/files/media/document/Food%20and%20You%202%20Wave%2010%20Key%20Findings%20v10%20final%20edit_0.pdf.
16. The Health Foundation. Inequalities in concentration of fast food outlets. 2024. https://www.health.org.uk/evidence-hub/surroundings/inequalities-in-concentration-of-fast-food-outlets.

17. Janssen HG, Davies IG, Richardson LD, Stevenson L. Determinants of takeaway and fast food consumption: a narrative review. Nutr Res Rev. 2018 Jun;31(1):16-34. doi: 10.1017/S0954422417000178.
18. Rogers NT, Cummins S, Jones CP, Mytton O, Rayner M, Rutter H, White M, Adams J. Estimated changes in free sugar consumption one year after the UK soft drink industry levy came into force: controlled interrupted time series analysis of the National Diet and Nutrition Survey (2011-2019). 2023. Journal of Epidemiology & Community Health, 78(9). doi: 10.1136/jech-2023-221051.
19. Natural Source Waters Association (NSWA). Written evidence Q & A (FDO0070). 2024. https://committees.parliament.uk/writtenevidence/129459/html/Price promotion landscape in the US and UK: Depicting retail practice to inform future research agenda - ScienceDirect.
20. Huang Y, Burgoine T, Essman M, Theis D, Bishop T, Adams J. Monitoring the Nutrient Composition of Food Prepared Out-of-Home in the United Kingdom: Database Development and Case Study. JMIR Public Health Surveill 2022;8(9):e39033. doi: 10.2196/39033.
21. Hillier SE, Nunn O, Lorrain-Smith K. An analysis of the nutritional value of UK supermarket ready meals. Proceedings of the Nutrition Society. 2020;79(OCE3):E794. doi:10.1017/S0029665120007806.
22. Welsh Statutory Instruments. The Food (Promotion and Presentation) (Wales) Regulations 2025. 2025. https://www.legislation.gov.uk/wsi/2025/395/contents/made.
23. Berger N, Cummins S, Allen A, Smith RD, Cornelsen L (2020) Patterns of beverage purchases amongst British households: A latent class analysis. PloS Med 17(9): e1003245. doi.org/10.1371/journal.pmed.1003245.

Appendices

Appendix 1: Methods and limitations

Methods

Data for this report were collected using Time to Talk Public Health (TTPH). TTPH is a population panel of residents in Wales aged 16 years and over established by Public Health Wales to enable regular engagement with the public to capture opinions and behaviours to inform policy and practice. The panel maintains a membership of around 2,500 people, with minimum survey sample targets of 1,000 people. Survey samples aim to be broadly representative of the population of Wales based on age, sex, deprivation quintile (as determined by the Welsh Index of Multiple Deprivation; WIMD; (WIMD)) and ethnicity, based on mid-2020 population estimates (ONS; see limitations). A market research company (MRC) is responsible for panel management and collecting survey data. Participants are recruited to participate through a multi-method, multi-step approach (telephone, face-to-face, social media advertising), and asked to select if they would like to take part online or by telephone in subsequent surveys. The development and sampling framework for establishing and implementing the panel is available online (TTPH protocol).

Demographic data (e.g. age, sex, deprivation quintile) were collected for each participant at the point of recruitment (November 2022-September 2024) and reconfirmed annually for accuracy. Age was collected as date of birth, and deprivation quintile was collected as a post code and coded into deprivation quintiles using the WIMD 2019 by the MRC. The food environments, portion size and perceived weight status data were collected between 8th August and 6th September 2024 as part of the August 2024 survey. The topic was one of six topics in a broader survey. All answers were self-reported. The included topic questions, response options and data categorisation for regression analysis are presented in Table A1.

The questionnaire asked participants about:

- **The types of main meals they had eaten over the past seven days**
- **Lunchtime eating behaviours when away from home**
- **Meal finishing behaviour**
- **Portion size practices and attitudes**

All panel members were invited to complete the survey via their pre-selected method (online or telephone). Reminder emails and calls were also undertaken to fill demographic gaps. To increase representation of 16 to 29-year-olds, a target of an additional 100 face-to-face interviews was set where individuals could participate in this survey, with the option of joining the panel for future surveys. Additionally, targeted social media advertising was conducted to increase representation of young people, males, and people of other than white ethnicity in the survey sample (and panel).

Of existing panel participants (N=2,832) at the time of survey launch, 841 completed the survey (29.7%). A further 115 participants completed the survey through face-to-face interview, and 525 people completed it online through social media advertising. A total of 1,481 people completed the

August 2024 survey. Participants were required to have provided responses to the demographic and perceived weight measures to be included in this study. This resulted in a final sample of 1,460 participants. Analyses were conducted in SPSS v.24.

Chi-square tests were used to measure bivariate relationships between outcome measures and participant socio-demographics. Independent relationships between outcome measures and participant socio-demographics were assessed using binary logistic regression (enter method). Findings from the regressions are presented as adjusted odds ratios (AORs) with 95% confidence intervals (95% CIs) and p-values with significance levels set as $p<0.05$.

Limitations

The findings of this study should be considered in the context of their limitations. A quota sampling approach was used and participation was voluntary, and as such the sample is non-randomised and subject to self-selection bias. While the study sought to achieve a nationally representative sample, young adults and those living in more deprived areas were underrepresented. The outcome questions were designed by members of the research team and while they were informed by existing literature, they were not subject to testing before fieldwork. Participants were asked to self-report their eating behaviours and their responses may have been subject to confirmation bias. Further context and objective measurements of participants' eating behaviours would be advantageous to triangulate with the subjective measures. For example, participants were asked to subjectively report their portion size without insight on their intake needs or what size portion they categorise as large.

Appendix 2: Tables

Table A1: Survey questions with responses and variable coding used in analysis

Question	Items	Response options	Coding
Over the last 7 days, on how many days did you do each of the following for your main meal?	Prepare and eat a main meal from scratch (using ingredients) at home Eat a main meal prepared by someone else from scratch (using ingredients) at home	0 days 1 day 2 days 3 days 4 days 5 days 6 days 7 days	0 to 4 days 5 or more days
Over the last 7 days, on how many days did you do each of the following for your main meal?	Eat a ready meal Eat a takeaway that I or someone else collected Eat a takeaway that was delivered Eat in a café or restaurant Missed a main meal	0 days 1 day 2 days 3 days 4 days 5 days 6 days 7 days	0 to 1 days 2 or more days
Do you ever eat your lunch away from your home?		Yes No	
(Of those who said yes to eating lunch away from their home) **If you are away from home for your lunchtime meals, how often do you do the following?**	Buy lunch on the go Have a lunch that was prepared at home Not eat a lunchtime meal	Always Often Sometimes Rarely Never	Always or often Sometimes Rarely or never

Question	Items	Response options	Coding
Which of the following best describes how you finish a meal?		I often leave food on my plate even if I don't feel full before finishing I sometimes leave food on my plate if I feel full before finishing I rarely leave food on my plate, even if I feel full before finishing	
To what extent do you agree with the following statements? **When I prepare a meal…**	I think about portion size I measure or weigh ingredients to prepare the right amount of food I use the images on packets to give me an idea of how much food each person should have I make extra food in case I or other people want more I tend to serve large portions at mealtimes to make sure I or other people do not end up feeling hungry My portion sizes depend on how I feel at the time	Strongly agree Agree Neither agree nor disagree Disagree Strongly disagree	Strongly agree or agree Neither agree nor disagree, disagree, or disagree strongly
Which of the following most applies to the portion size you typically serve yourself?		I serve small portions I serve moderate portions I serve large portions	Small or moderate Large
If you were to have an unhealthy snack or treat, what size snack would you typically have? A moderate size snack would be a single regular packet of crisps or two biscuits.		Small snack Moderate snack Large snack I don't eat treat/unhealthy snacks (such as crisps or chocolate)	Small or moderate Large

Table A2: Participant demographics and national population comparison

		Sample		National population
		n	%	%
All		1,460	100.0%	
Age group (years)	16 to 29	169	11.6%	21%
	30 to 49	404	27.7%	29%
	50 to 69	599	41.0%	31%
	70 or older	288	19.7%	19%
Sex	Male	819	56.1%	49%
	Female	641	43.9%	51%
Deprivation quintile	(Most) 1	201	13.8%	19%
	2	273	18.7%	20%
	3	317	21.7%	21%
	4	316	21.6%	21%
	(Least) 5	353	24.2%	20%
Ethnicity	White (including ethnic minority white)	1,426	97.7%	95%
	Ethnic minority groups	34	2.3%	5%
Perceived weight	About right or lighter	453	31.0%	
	Heavier	1,007	69.0%	
Participation method	Online	1,245	85.3%	
	Telephone	101	6.9%	
	Face-to-face	114	7.8%	

Table A3: Proportion of days participants ate a meal made from scratch at home over a 7-day period, by participant socio-demographics, and adjusted odds ratios (AORs) for eating a meal made from scratch on 5 or more days.

		Days eaten a main meal made from scratch at home (%)			5 days or more in the last week	
		0	1 to 4	5 or more	AOR (95% CI)	*p*
All (n=1,446)*		5.0%	21.1%	73.9%		
Age group (years)	16 to 29	3.6%	25.1%	71.3%	0.48 (0.30-0.78)	0.003
	30 to 49	6.0%	25.8%	68.2%	0.43 (0.29-0.63)	<0.001
	50 to 69	5.2%	21.3%	73.5%	0.56 (0.39-0.81)	0.002
	70 or older	3.8%	11.8%	84.4%	REF	<0.001
	χ^2			25.887		
	p			<0.001		
Sex	Male	5.0%	21.0%	73.9%	0.99 (0.78-1.26)	0.925
	Female	4.9%	21.2%	73.9%	REF	
	χ^2			0.018		
	p			0.991		
Deprivation quintile	(Most) 1	7.6%	28.3%	64.1%	0.53 (0.35-0.79)	0.002
	2	7.1%	24.6%	68.3%	0.65 (0.48-0.93)	0.020
	3	2.9%	22.3%	74.8%	0.84 (0.59-1.21)	0.355
	4	4.8%	16.2%	79.0%	1.02 (0.70-1.49)	0.902
	(Least) 5	4.0%	17.6%	78.4%	REF	0.004
	χ^2			26.602		
	p			0.001		
Perceived weight	About right or lighter	4.3%	15.2%	80.5%	REF	
	Heavier	5.3%	23.7%	71.0%	0.58 (0.44-0.77)	<0.001
	χ^2			15.119		
	p			0.001		

*14 participants were excluded due to invalid responses to this question set. REF = Reference category.

Table A4: Proportion of days participants ate three different meal types and missed a main meal over a 7-day period, by participant socio-demographics

		Days eaten a ready meal			Days eaten a takeaway			Days eaten in a café or restaurant			Days missed a main meal		
		0	1	2 or more	0	1	2 or more	0	1	2 or more	0	1	2 or more
All (n=1,446)*		58.4%	20.1%	21.6%	60.8%	27.6%	11.6%	53.1%	33.7%	13.2%	69.9%	13.4%	16.7%
Age group (years)	16 to 29	52.1%	19.2%	28.7%	42.5%	31.1%	26.3%	45.5%	33.5%	21.0%	66.5%	9.0%	24.6%
	30 to 49	59.1%	18.8%	22.1%	50.4%	31.6%	18.0%	46.4%	36.3%	17.3%	64.4%	15.0%	20.6%
	50 to 69	58.3%	21.6%	20.1%	62.8%	29.6%	7.6%	54.1%	34.6%	11.3%	69.1%	15.0%	15.9%
	70 or older	61.1%	19.1%	19.8%	81.6%	16.0%	2.40%	64.9%	28.1%	6.9%	81.3%	10.4%	8.3%
	χ^2			7.816			129.712			39.337			35.740
	p			0.252			<0.001			<0.001			<0.001
Sex	Male	54.9%	20.5%	24.6%	56.9%	30.9%	12.2%	53.5%	32.1%	14.4%	72.1%	12.3%	15.6%
	Female	62.9%	19.4%	17.7%	65.7%	23.4%	10.9%	52.6%	35.7%	11.7%	67.1%	14.8%	18.0%
	χ^2			12.006			12.242			3.389			4.184
	p			0.002			0.002			0.184			0.123
Deprivation quintile	(Most) 1	50.5%	19.7%	29.8%	50.0%	30.8%	19.2%	59.1%	27.8%	13.1%	58.1%	16.7%	25.3%
	2	60.4%	14.9%	24.6%	53.4%	29.9%	16.8%	54.9%	32.5%	12.7%	66.0%	11.6%	22.4%
	3	58.9%	22.0%	19.1%	58.3%	29.6%	12.1%	47.1%	36.9%	15.9%	71.7%	12.7%	15.6%
	4	62.4%	20.1%	17.5%	66.9%	25.5%	7.6%	56.1%	33.4%	10.5%	72.3%	13.7%	14.0%
	(Least) 5	57.1%	22.4%	20.5%	69.3%	24.1%	6.5%	51.1%	35.2%	13.6%	75.9%	13.4%	10.8%
	χ^2			19.249			44.518			11.370			31.915
	p			0.014			<0.001			0.182			<0.001
Perceived weight	About right or lighter	65.8%	17.2%	17.0%	67.1%	24.2%	8.7%	53.9%	31.8%	14.3%	79.2%	10.5%	10.3%
	Heavier	55.1%	21.3%	23.6%	58.0%	29.1%	12.9%	52.8%	34.5%	12.7%	65.8%	14.7%	19.5%
	χ^2			14.934			11.648			1.383			27.807
	p			0.001			0.003			0.501			<0.001

*14 participants were excluded due to invalid responses to this question set.

Table A5: Adjusted odds ratios (AORs) for eating the three different meal types and missing a main meal on 2 or more days per week by participant socio-demographics

		Eaten a ready meal on 2 or more days a week		Eaten a takeaway on 2 or more days a week		Eaten in a café or restaurant on 2 or more days a week		Missed a main meal on 2 or more days a week	
		AOR (95% CI)	*p*	AOR (95% CI)	*p*	AOR (95% CI)	*p*	AOR (95% CI)	*p*
Age group (years)	16 to 29	1.65 (1.03-2.63)	0.036	15.22 (6.51-35.60)	<0.001	3.93 (2.13-7.23)	<0.001	3.71 (2.09-6.60)	<0.001
	30 to 49	1.13 (0.77-1.65)	0.541	8.25 (3.71-18.32)	<0.001	3.01 (1.77-5.10)	<0.001	2.55 (1.56-4.17)	<0.001
	50 to 69	0.95 (0.66-1.36)	0.765	2.92 (1.29-6.58)	0.010	1.76 (1.04-2.98)	0.035	1.83 (1.13-2.95)	0.013
	70 or older	REF	0.071		<0.001		<0.001		<0.001
Sex	Male	1.52 (1.16-1.97)	0.002	1.22 (0.87-1.73)	0.251	1.39 (1.01-1.91)	0.044	0.84 (0.63-1.12)	0.230
Deprivation quintile	(Most) 1	1.47 (0.97-2.21)	0.069	2.46 (1.38-4.37)	0.002	0.73 (0.43-1.25)	0.250	2.48 (1.54-4.01)	<0.001
	2	1.19 (0.81-1.76)	0.368	2.34 (1.65-4.05)	0.002	0.77 (0.48-1.25)	0.293	2.15 (1.37-3.38)	0.001
	3	0.92 (0.63-1.36)	0.688	2.03 (1.16-3.55)	0.013	1.17 (0.76-1.81)	0.475	1.51 (0.95-2.39)	0.080
	4	0.84 (0.57-1.25)	0.395	1.27 (0.69-2.33)	0.450	0.73 (0.45-1.18)	0.199	1.41 (0.88-2.25)	0.156
	(Least) 5	REF	0.094		0.005		0.200		0.001
Perceived weight	Heavier	1.66 (1.23-2.25)	0.001	2.23 (1.47-3.39)	<0.001	0.97 (0.69-1.36)	0.837	2.46 (1.71-3.55)	<0.001

*14 participants were excluded due to invalid responses to this question set. REF = Reference category. REF = females, and those who perceived themselves to be about right or lighter weight.

Table A6: Proportion who eat lunch away from their home by participant socio-demographics, and adjusted odds ratios (AORs) for those who eat lunch away from home

		Yes	No	Yes, eat lunch away from the home	
				AOR (95% CI)	*p*
All (n=1,460)		57.0%	43.0%		
Age group (years)	16 to 29	75.1%	24.9%	6.34 (4.07-9.86)	<0.001
	30 to 49	70.3%	29.7%	4.77 (3.44-6.63)	<0.001
	50 to 69	53.9%	46.1%	2.27 (1.69-3.05)	<0.001
	70 or older	34.0%	66.0%	REF	<0.001
	χ^2		116.166		
	p		<0.001		
Sex	Male	57.3%	42.7%	1.13 (0.91-1.41)	0.266
	Female	56.6%	43.4%	REF	
	χ^2		0.059		
	p		0.808		
Deprivation quintile	(Most) 1	58.7%	41.3%	0.89 (0.61-1.30)	0.544
	2	58.6%	41.4%	0.98 (0.70-1.36)	0.883
	3	55.5%	44.5%	1.02 (0.74-1.40)	0.906
	4	59.5%	40.5%	1.27 (0.92-1.75)	0.143
	(Least) 5	53.8%	46.2%	REF	0.385
	χ^2		3.064		
	p		0.547		
Perceived weight	About right or lighter	58.3%	41.7%	REF	
	Heavier	56.4%	43.6%	1.04 (0.82-1.33)	0.725
	χ^2		0.447		
	p		0.504		

REF = Reference category.

Table A7: Proportions of frequency participants bought lunch on the go when away from home by participant socio-demographics, and adjusted odds ratios (AORs) for those who bought lunch on the go at least sometimes

		Never or rarely	Sometimes	Often or always	Bought lunch on the go at least sometimes	
					AOR (95% CI)	*p*
All (n=1,446)*		40.0%	36.3%	23.7%		
Age group (years)	16 to 29	22.8%	40.2%	37.0%	5.39 (2.92-9.93)	<0.001
	30 to 49	35.7%	36.7%	27.6%	2.44 (1.51-3.94)	<0.001
	50 to 69	45.7%	35.7%	18.6%	1.45 (0.91-2.31)	0.116
	70 or older	56.1%	31.6%	12.2%	REF	<0.001
	χ^2			40.920		
	p			<0.001		
Sex	Male	35.0%	36.5%	28.6%	1.72 (1.28-2.31)	<0.001
	Female	46.5%	36.0%	17.5%	REF	
	χ^2			17.464		
	p			<0.001		
Deprivation quintile	(Most) 1	32.2%	40.7%	27.1%	1.19 (0.72-1.98)	0.492
	2	37.5%	32.5%	30.0%	1.07 (0.68-1.67)	0.775
	3	39.1%	36.8%	24.1%	1.19 (0.77-1.83)	0.437
	4	43.6%	37.2%	19.1%	1.02 (0.67-1.56)	0.911
	(Least) 5	44.2%	35.3%	20.5%	REF	0.916
	χ^2			10.627		
	p			0.224		
Perceived weight	About right or lighter	45.8%	35.2%	18.9%	REF	
	Heavier	37.3%	36.7%	26.0%	1.83 (1.33-2.54)	<0.001
	χ^2			7.159		
	p			0.028		

*2 participants were excluded due to invalid responses to this question set. REF = Reference category.

Table A8: Proportions of frequency participants who ate a lunch prepared at home when away from home by participant socio-demographics, and adjusted odds ratios (AORs) for those who prepared a lunch at least sometimes

		Never or rarely	Sometimes	Often or always	Prepared a lunch at least sometimes	
					AOR (95% CI)	*p*
All (n=830)*		28.9%	29.6%	41.4%		
Age group (years)	16 to 29	30.7%	33.1%	36.2%	1.61 (0.90-2.86)	0.108
	30 to 49	24.7%	29.7%	45.6%	2.45 (1.50-4.00)	<0.001
	50 to 69	27.0%	28.9%	44.1%	2.36 (1.46-3.79)	<0.001
	70 or older	44.9%	27.6%	27.6%	REF	0.001
	χ^2			18.738		
	p			0.005		
Sex	Male	33.7%	29.6%	36.7%	0.58 (0.42-0.79)	0.001
	Female	22.7%	29.6%	47.6%	REF	
	χ^2			14.420		
	p			0.001		
Deprivation quintile	(Most) 1	28.0%	31.4%	40.7%	0.96 (0.56-1.64)	0.869
	2	28.8%	33.8%	37.5%	0.86 (0.53-1.40)	0.542
	3	32.8%	27.0%	40.2%	0.70 (0.44-1.11)	0.133
	4	29.3%	25.0%	45.7%	0.84 (0.53-1.33)	0.449
	(Least) 5	25.8%	32.1%	42.1%	REF	0.627
	χ^2			6.305		
	p			0.613		
Perceived weight	About right or lighter	24.6%	26.5%	48.9%	REF	
	Heavier	30.9%	31.1%	38.0%	0.68 (0.48-0.97)	0.032
	χ^2			8.883		
	p			0.012		

*2 participants were excluded due to invalid responses to this question set. REF = Reference category.

Table A9: Proportion of frequency participants missed a lunchtime meal by particpant socio-demographics, and adjusted odds ratios (AORs) for missing a lunchtime meal at least sometimes

		Never or rarely	Sometimes	Often or always	Missed a lunchtime meal at least sometimes	
					AOR (95% CI)	*p*
All (n=830)*		59.4%	27.8%	12.8%		
Age group (years)	16 to 29	70.9%	19.7%	9.4%	0.64 (0.36-1.15)	0.134
	30 to 49	56.9%	29.0%	14.1%	0.98 (0.61-1.58)	0.941
	50 to 69	57.8%	29.8%	12.4%	0.91 (0.57-1.45)	0.696
	70 or older	57.1%	28.6%	14.3%	REF	0.334
	χ^2			8.692		
	p			0.192		
Sex	Male	57.4%	29.2%	13.4%	1.21 (0.90-1.61)	0.202
	Female	62.0%	26.0%	11.9%	REF	
	χ^2			1.864		
	p			0.394		
Deprivation quintile	(Most) 1	61.0%	22.9%	16.1%	1.01 (0.62-1.64)	0.983
	2	54.4%	30.0%	15.6%	1.25 (0.81-1.94)	0.316
	3	59.8%	30.5%	9.8%	0.99 (0.65-1.51)	0.955
	4	62.2%	26.6%	11.2%	0.89 (0.58-1.35)	0.579
	(Least) 5	59.5%	27.9%	12.6%	REF	0.660
	χ^2			6.488		
	p			0.593		
Perceived weight	About right or lighter	71.6%	19.7%	8.7%	REF	
	Heavier	53.7%	31.6%	14.7%	2.01 (1.45-2.78)	<0.001
	χ^2			23.889		
	p			<0.001		

*2 participants were excluded due to invalid responses to this question set. REF = Reference category.

Table A10: Proportion of meal finishing behaviour by participant socio-demographics

		I rarely leave food on my plate, even if I feel full before finishing	I sometimes leave food on my plate if I feel full before finishing	I often leave food on my plate even if I don't feel full before finishing
All (n=1,447)*		52.9%	42.8%	4.3%
Age group (years)	16 to 29	53.6%	42.2%	4.2%
	30 to 49	52.8%	43.8%	3.5%
	50 to 69	54.1%	41.0%	4.9%
	70 or older	50.0%	45.8%	4.2%
	χ^2			2.787
	p			0.835
Sex	Male	63.1%	34.4%	2.6%
	Female	39.8%	53.7%	6.5%
	χ^2			79.883
	p			<0.001
Deprivation quintile	(Most) 1	49.7%	44.7%	5.5%
	2	49.8%	44.2%	5.9%
	3	55.1%	41.4%	3.5%
	4	52.9%	44.3%	2.9%
	(Least) 5	55.0%	40.7%	4.3%
	χ^2			6.759
	p			0.563
Perceived weight	About right or lighter	51.1%	44.4%	4.5%
	Heavier	53.6%	42.2%	4.2%
	χ^2			0.786
	p			0.675

*13 participants were excluded due to invalid responses to this question item.

Table A11: Proportion of different portion sizes self-served by participant socio-demographics, and adjusted odds ratios for self-serving a large portion

		Small portion	Moderate portion	Large portion	Self-serving a large portion	
					AOR (95% CI)	*p*
All (n=1,450*)		8.3%	67.9%	23.8%		
Age group (years)	16 to 29	6.0%	58.9%	35.1%	5.06 (3.04-8.41)	<0.001
	30 to 49	6.8%	61.8%	31.5%	3.60 (2.35-5.51)	<0.001
	50 to 69	7.6%	71.5%	21.0%	1.77 (1.17-2.67)	0.007
	70 or older	13.3%	74.5%	12.2%	REF	<0.001
	χ^2			55.523		
	p			<0.001		
Sex	Male	4.4%	66.3%	29.3%	2.32 (1.77-3.04)	<0.001
	Female	13.2%	70.1%	16.7%	REF	
	χ^2			58.187		
	p			<0.001		
Deprivation quintile	(Most) 1	7.5%	63.7%	28.9%	1.13 (0.74-1.72)	0.576
	2	9.6%	62.2%	28.1%	1.21 (0.82-1.78)	0.334
	3	8.6%	68.2%	23.2%	1.12 (0.76-1.64)	0.569
	4	4.8%	75.1%	20.1%	0.96 (0.65-1.42)	0.840
	(Least) 5	10.5%	68.2%	21.3%	REF	0.790
	χ^2			18.742		
	p			0.016		
Perceived weight	About right or lighter	11.1%	72.8%	16.0%	REF	
	Heavier	7.0%	65.7%	27.3%	2.42 (1.77-3.30)	<0.001
	χ^2			25.175		
	p			<0.001		

*10 participants were excluded due to invalid responses to this question item. REF = Reference category.

Table A12: Proportion who eat unhealthy snacks by participant socio-demographics

		Eat unhealthy snacks	Do not eat unhealthy snacks
All (n=1,454*)		92.6%	7.4%
Age group (years)	16 to 29	97.6%	2.4%
	30 to 49	97.3%	2.8%
	50 to 69	89.9%	10.1%
	70 or older	88.9%	11.1%
	χ^2		30.931
	p		<0.001
Sex	Male	92.9%	7.1%
	Female	92.3%	7.7%
	χ^2		0.198
	p		0.656
Deprivation quintile	(Most) 1	95.0%	5.0%
	2	91.5%	8.5%
	3	94.9%	5.1%
	4	89.6%	10.4%
	(Least) 5	92.9%	7.1%
	χ^2		8.982
	p		0.062
Perceived weight	About right or lighter	89.8%	10.2%
	Heavier	93.9%	6.1%
	χ^2		7.837
	p		0.005

*6 participants were excluded due to invalid responses to this question item.

Table A13: Proportion of unhealthy snack size typically eaten by participant socio-demographics, and adjusted odds ratios for large snack portions.

		Small	Moderate	Large	Typically selecting a large unhealthy snack	
					AOR (95% CI)	*p*
All (n=1,347*)		30.7%	54.7%	14.6%		
Age group (years)	16 to 29	28.5%	48.5%	23.0%	11.92 (5.26-27.00)	<0.001
	30 to 49	22.1%	57.1%	20.8%	8.60 (4.05-18.26)	<0.001
	50 to 69	30.4%	56.8%	12.8%	4.25 (2.00-9.01)	<0.001
	70 or older	46.1%	50.8%	3.1%	REF	<0.001
	χ^2			74.785		
	p			<0.001		
Sex	Male	31.8%	51.3%	16.8%	1.74 (1.25-2.41)	0.001
	Female	29.3%	59.1%	11.6%	REF	
	χ^2			10.669		
	p			0.005		
Deprivation quintile	(Most) 1	32.1%	50.0%	17.9%	1.01 (0.61-1.69)	0.965
	2	27.8%	54.0%	18.1%	1.09 (0.68-1.74)	0.730
	3	31.8%	56.5%	11.7%	0.83 (0.51-1.35)	0.458
	4	30.0%	56.9%	13.1%	0.97 (0.60-1.57)	0.888
	(Least) 5	31.8%	54.4%	13.8%	REF	0.881
	χ^2			8.182		
	p			0.416		
Perceived weight	About right or lighter	37.6%	53.0%	9.4%	REF	
	Heavier	27.8%	55.5%	16.8%	2.39 (1.59-3.58)	<0.001
	χ^2			19.729		
	p			<0.001		

*Sample limited to those who answered yes to the previous question (n = 1,347). REF = Reference category.

Table A14. Proportion who agree or disagree that they think about portion size when they prepare a meal by particpant socio-demographics, with adjusted odds ratios (AORs) for agreeing.

		Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree	Agreeing they think about portion size	
					AOR (95% CI)	*p*
All (n=1,447)*		62.3%	20.9%	16.8%		
Age group (years)	16 to 29	62.4%	21.2%	16.4%	0.85 (0.56-1.29)	0.445
	30 to 49	62.3%	20.0%	17.8%	0.87 (0.63-1.21)	0.412
	50 to 69	60.7%	21.5%	17.8%	0.87 (0.65-1.18)	0.368
	70 or older	65.7%	20.6%	13.6%	REF	0.800
	χ^2			3.325		
	p			0.767		
Sex	Male	57.9%	22.2%	20.0%	0.65 (0.52-0.81)	<0.001
	Female	68.0%	19.2%	12.8%	REF	
	χ^2			18.364		
	p			<0.001		
Deprivation quintile	(Most) 1	57.2%	22.2%	20.6%	0.66 (0.46-0.96)	0.029
	2	56.8%	22.5%	20.7%	0.64 (0.46-0.89)	0.008
	3	62.3%	22.5%	15.2%	0.78 (0.57-1.08)	0.133
	4	64.0%	18.5%	17.5%	0.83 (0.60-1.15)	0.252
	(Least) 5	67.9%	19.6%	12.5%	REF	0.073
	χ^2			14.605		
	p			0.067		
Perceived weight	About right or lighter	69.4%	16.1%	14.5%	REF	
	Heavier	59.2%	23.0%	17.8%	0.63 (0.50-0.81)	<0.001
	χ^2			14.402		
	p			0.001		

*13 participants were excluded due to invalid responses to this question item. REF = Reference category.

Table A15: Proportion who agree or disagree that they measure or weigh ingredients to prepare the right amount of food by particpant socio-demographics, with adjusted odds ratios (AORs) for agreeing.

		Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree	Agreeing they measure or weight ingredients to prepare the right amount	
					AOR (95% CI)	*p*
All (n=1,443)*		27.7%	19.3%	52.9%		
Age group (years)	16 to 29	32.9%	17.7%	49.4%	1.33 (0.86-2.05)	0.209
	30 to 49	26.6%	14.9%	58.5%	1.05 (0.74-1.49)	0.783
	50 to 69	27.7%	19.1%	53.3%	1.15 (0.83-1.59)	0.393
	70 or older	26.4%	27.1%	46.5%	REF	0.571
	χ^2			20.096		
	p			0.003		
Sex	Male	26.4%	20.9%	52.7%	0.86 (0.68-1.09)	0.205
	Female	29.4%	17.3%	53.2%	REF	
	χ^2			3.614		
	p			0.164		
Deprivation quintile	(Most) 1	24.6%	16.9%	58.5%	0.73 (0.48-1.10)	0.133
	2	25.6%	22.2%	52.2%	0.79 (0.55-1.13)	0.200
	3	25.9%	19.9%	54.1%	0.82 (0.58-1.15)	0.251
	4	30.8%	16.7%	52.6%	1.02 (0.73-1.42)	0.916
	(Least) 5	30.0%	20.3%	49.7%	REF	0.340
	χ^2			8.245		
	p			0.410		
Perceived weight	About right or lighter	35.0%	16.8%	48.2%	REF	
	Heavier	24.5%	20.5%	55.1%	0.62 (0.48-0.79)	<0.001
	χ^2			17.122		
	p			<0.001		

*17 participants were excluded due to invalid responses to this question item. REF = Reference category.

Table A16: Proportion who agree or disagree that they use the imagery on packets to inform portion size by particpant socio-demographics, with adjusted odds ratios (AORs) for agreeing.

		Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree	Agreeing they use imagery on packets to inform portion size	
					AOR (95% CI)	*p*
All (n=1,444)*		8.4%	21.1%	70.5%		
Age group (years)	16 to 29	16.7%	21.0%	62.3%	3.14 (1.62-6.08)	0.001
	30 to 49	9.0%	17.9%	73.1%	1.48 (0.82-2.68)	0.194
	50 to 69	6.7%	20.7%	72.6%	1.04 (0.58-1.85)	0.898
	70 or older	6.3%	26.7%	67.0%	REF	0.001
	χ^2			25.791		
	p			<0.001		
Sex	Male	8.7%	22.0%	69.3%	1.11 (0.76-1.63)	0.589
	Female	8.0%	20.0%	72.0%	REF	
	χ^2			1.262		
	p			0.532		
Deprivation quintile	(Most) 1	12.2%	25.9%	61.9%	1.35 (0.74-2.47)	0.332
	2	7.1%	22.4%	70.5%	0.83 (0.45-1.56)	0.568
	3	7.0%	19.6%	73.4%	0.93 (0.51-1.67)	0.798
	4	9.6%	19.1%	71.3%	1.35 (0.78-2.34)	0.291
	(Least) 5	7.4%	20.6%	71.9%	REF	0.395
	χ^2			11.435		
	p			0.178		
Perceived weight	About right or lighter	7.9%	19.8%	72.4%	REF	
	Heavier	8.6%	21.7%	69.7%	1.37 (0.89-2.10)	0.158
	χ^2			1.071		
	p			0.585		

*16 participants were excluded due to invalid responses to this question item. REF = Reference category.

Table A17: Proportion who agree or disagree that they make extra food in case someone wants more by particpant socio-demographics, with adjusted odds ratios (AORs) for agreeing.

		Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree	Agreeing they make extra food in case someone wants more	
					AOR (95% CI)	*p*
All (n=1,444)*		23.0%	19.6%	57.4%		
Age group (years)	16 to 29	30.3%	20.0%	49.7%	3.93 (2.32-6.66)	<0.001
	30 to 49	32.5%	20.3%	47.3%	4.00 (2.57-6.23)	<0.001
	50 to 69	20.7%	17.7%	61.6%	2.16 (1.40-3.34)	0.001
	70 or older	10.2%	22.5%	67.4%	REF	<0.001
	χ^2			59.337		
	p			<0.001		
Sex	Male	21.3%	21.0%	57.7%	0.84 (0.65-1.09)	0.190
	Female	25.1%	17.9%	57.0%	REF	
	χ^2			4.001		
	p			0.135		
Deprivation quintile	(Most) 1	30.8%	20.5%	48.7%	1.49 (0.98-2.25)	0.062
	2	25.9%	20.4%	53.7%	1.18 (0.80-1.73)	0.411
	3	24.1%	20.0%	55.9%	1.19 (0.82-1.73)	0.362
	4	17.3%	19.5%	63.3%	0.82 (0.55-1.22)	0.317
	(Least) 5	20.5%	18.2%	61.3%	REF	0.083
	χ^2			18.377		
	p			0.019		
Perceived weight	About right or lighter	17.9%	19.9%	62.2%	REF	
	Heavier	25.3%	19.5%	55.3%	1.70 (1.26-2.30)	<0.001
	χ^2			9.920		
	p			0.007		

*16 participants were excluded due to invalid responses to this question item. REF = Reference category.

Table A18: Proportion who agree or disagree that they tend to serve large portions to ensure no one feels hungry by particpant socio-demographics, with adjusted odds ratios (AORs) for agreeing.

		Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree	Agreeing they tend to serve large portions to ensure no one feels hungry	
					AOR (95% CI)	*p*
All (n=1,444)*		31.5%	25.1%	43.4%		
Age group (years)	16 to 29	41.8%	25.5%	32.7%	4.78 (2.98-7.69)	<0.001
	30 to 49	45.1%	21.2%	33.7%	4.92 (3.33-7.27)	<0.001
	50 to 69	27.4%	26.2%	46.4%	2.04 (1.39-2.97)	<0.001
	70 or older	14.7%	28.1%	57.2%	REF	<0.001
	χ^2			88.442		
	p			<0.001		
Sex	Male	34.0%	26.8%	39.2%	1.46 (1.15-1.86)	0.002
	Female	28.2%	22.9%	48.9%	REF	
	χ^2			13.758		
	p			0.001		
Deprivation quintile	(Most) 1	40.5%	22.6%	36.9%	1.39 (0.94-2.05)	0.098
	2	35.1%	26.2%	38.7%	1.16 (0.81-1.65)	0.431
	3	29.9%	25.8%	44.3%	1.06 (0.75-1.50)	0.744
	4	28.0%	25.5%	46.5%	1.03 (0.73-1.47)	0.854
	(Least) 5	28.1%	24.7%	47.2%	REF	0.516
	χ^2			14.702		
	p			0.065		
Perceived weight	About right or lighter	23.5%	24.4%	52.0%	REF	
	Heavier	35.0%	25.4%	39.6%	2.04 (1.55-2.69)	<0.001
	χ^2			23.932		
	p			<0.001		

*14 participants were excluded due to invalid responses to this question item. REF = Reference category

Table A19: Proportion who agree or disagree that their portion sizes depend on how they feel at the time by particpant socio-demographics, with adjusted odds ratios (AORs) for agreeing.

		Strongly agree or agree	Neither agree nor disagree	Strongly disagree or disagree	Agreeing that their portion sizes depend on how they feel at the time	
					AOR (95% CI)	*p*
All (n=1,451)*		58.9%	19.2%	21.8%		
Age group (years)	16 to 29	68.3%	16.2%	15.6%	2.12 (1.39-3.22)	<0.001
	30 to 49	65.9%	16.7%	17.4%	1.89 (1.38-2.59)	<0.001
	50 to 69	55.9%	19.5%	24.7%	1.18 (0.88-1.57)	0.265
	70 or older	50.0%	24.1%	25.9%	REF	<0.001
	χ^2			27.308		
	p			<0.001		
Sex	Male	60.2%	19.8%	20.0%	1.16 (0.94-1.44)	0.170
	Female	57.3%	18.5%	24.2%	REF	
	χ^2			3.620		
	p			0.164		
Deprivation quintile	(Most) 1	70.2%	16.7%	13.1%	1.82 (0.25-2.66)	0.002
	2	62.0%	18.1%	19.9%	1.32 (0.95-1.83)	0.102
	3	54.4%	22.8%	22.8%	1.04 (0.76-1.41)	0.823
	4	60.3%	15.6%	24.1%	1.38 (1.01-1.89)	0.043
	(Least) 5	53.0%	21.7%	25.4%	REF	0.011
	χ^2			24.410		
	p			0.002		
Perceived weight	About right or lighter	53.7%	21.2%	25.2%	REF	
	Heavier	61.3%	18.4%	20.4%	1.50 (1.18-1.90)	0.001
	χ^2			7.581		
	p			0.023		

*9 participants were excluded due to invalid responses to this question item. REF = Reference category

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ISBN 978-1-83766-843-4