

# Exploring food behaviours in the UK student population: Interim findings

Area of research interest: [Behaviour and perception](#)

Planned completion: 10 January 2023

Project status: Completed

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Conducted by: Food Standards Agency and Food Standards Scotland

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## Food behaviours in the UK student population: executive summary

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Area of research interest: [Behaviour and perception](#)

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### Introduction

Given the lack of evidence on this topic, co creation sessions were held with university students to identify key issues and inform the development of a nationally representative online survey.

This report presents the main findings from the co-creation sessions and headline findings from the online survey. The full analysis, which will include results from image coding using the citizen science platform [Zooniverse \(Opens in a new window\)](#), will be published at a later date.

## Methodology

Sixteen university students took part in co-creation sessions (held between July and December 2021) to inform the development of an online survey. The online survey was conducted between the 2nd and 28th of February 2022. A nationally representative sample of 2,921 undergraduate university students were recruited across England, Wales, Northern Ireland, and Scotland. The survey included a range of themes including knowledge, attitudes, and behaviour, relating to food safety, food security, diet, and other food-related topics.

## Key findings

- a third (33%) of respondents reported that they do not always wash their hands immediately after handling raw meat, poultry, or fish, and 54% of respondents reported that they do not always wash their hands after handling frozen chicken products
- over half (54%) of respondents' report washing raw chicken at least occasionally
- many respondents store their food in an allocated area in their fridge, with 48% storing food on an allocated shelf or 13% using an allocated drawer. Over a quarter (28%) of respondents store food wherever there is space, and only 21% store different types of food in specific areas of the fridge (for example, ready-to-eat foods on the top shelf)
- around two-thirds (65%) of respondents reported that their fridge had contained food past the use-by date, 64% reported leftovers that had been left for more than two days, and 37% reported uncovered (cooked or raw) meats
- some respondents stored food at room temperature in their bedroom or non-kitchen area, which should be kept in a fridge (9%), or freezer (6%).
- almost 4 in 10 (37%) respondents reported that they have got food from the bins or waste area of a supermarket or shop
- over 4 in 10 (44%) respondents were classified as food insecure, with the highest levels (60%) noted amongst students at Universities based in the North West of England.

## Conclusion

This research explored the knowledge, attitudes and behaviours of university students relating to food safety, food security, diet and other food related behaviours, and identified experiences and challenges faced by this group. We have identified that students:

- find it difficult to maintain cleanliness in shared kitchens, with many students not following recommended food safety and hygiene behaviours, and some students engaging in food-related behaviours in non-kitchen areas.
- lack adequate fridge space, with often an 'one shelf per person' allocation,
- access food from the bins or waste area of a supermarket or shop (37%).
- have relatively high levels of food insecurity (44%), compared to the most recent national statistic from [Food and You 2](#) (Wave 4, 18%, for adults in England, Wales and Northern Ireland), particularly amongst students at Universities based in the North West of England (60%).

# Food behaviours in the UK student population: background and methodology

## Background

The Food Standards Agency (FSA) works to protect public health and consumers' wider interests in relation to food in England, Wales and Northern Ireland. The FSA's goal and vision is to ensure that 'food is safe', 'food is what it says it is', and 'food is healthier and more sustainable'. Food Standards Scotland (FSS) has similar responsibility in Scotland, and aims to ensure that 'food is safe and authentic' and 'consumers have healthier diets'. Since consumers are responsible for the safe preparation and storage of food in their home, the FSA and FSS gives practical guidance and recommendations to consumers on food safety and hygiene.

FSA research shows that younger adults are less worried about food safety and hygiene compared to older consumers ([Generation Z \(Opens in a new window\)](#)), and are less likely to follow recommended food practices ([COVID-19 Consumer Tracker](#)). Our flagship survey, Food and You 2 (a source of official statistics on household food security) has for example, shown that students are less likely to cook food until it is steaming hot and cooked all the way through, less likely to store raw meat/poultry away from cooked foods, or to always wash their hands immediately after handling raw meat, poultry or fish compared to some occupational groups ([Food and You 2: Wave 4](#)). Whilst FSA surveys include university students, the sample size is limited, meaning we are not able to explore differences in sub-groups or generalise to the wider student population. Additionally, the sample we do reach will not be representative of the student population because communal establishments, including halls of residence, are not included in sampling frames for our surveys (e.g., Food and You 2, Consumer Insights Tracker).

The move to university is a significant life change for many, providing autonomy of food choice and behaviours, as such, this transition has been identified as a key moment of change: a disruption to established behavioural routines and habits which can influence long lasting changes in relation to a range of food behaviours ([‘Moments of Change’ and Food-Related Behaviours](#)). Research suggests that this ‘moment’ can lead to the consumption of poor quality, high cost and low nutrient diets which can impact body weight, long-term eating habits and health (Racette et al., 2005) ([footnote 1](#)). The UK 2021 Census reports the 15-24 population as 6.9m ([Population and household estimates, England and Wales: Census 2021, Table P01 \(Opens in a new window\)](#)), with 2.7m higher education enrolments in the 2020/21 academic year (HESA 20/21 [footnote 2](#)) students make up a significant proportion of this age group, suggesting that many young adults may be in this ‘moment’ ([footnote 3](#)).

Recent data shows that 18% of adults across England, Wales and Northern Ireland are food insecure. Whilst this data suggested that full-time students were more likely to be food insecure than those in many occupational groups ([Food and You 2: Wave 4](#)), given the limited sample of this group the prevalence of food insecurity in the wider university student population is unknown.

The National Student Money Survey (Brown, 2022 [footnote 4](#)) note a rise in UK students living costs by 14% since the 2021 survey, compared to a 2.3% and 4.5% increase in the maximum Maintenance loan for students in England and Scotland respectively. The average student's Maintenance loan therefore falls short of covering living costs by £439 each month. In line with this, the survey found that 1 in 10 (10%) of students had used a food bank in the last year and 82% are worried about making ends meet. Almost half (47%) of the students surveyed reported that their diet has suffered due to financial worries.

There is little academic research exploring food safety behaviours amongst UK students. However, a small-scale study demonstrated that students lack food safety knowledge and frequently self-report food safety malpractice when preparing food (Evans, 2016). International research has evidenced poor food safety practices in non-UK student populations. For example, in the UAE, sponges in halls of residence kitchens were shown to contain high levels of potentially pathogenic bacteria (for example, mesophilic aerobic bacteria, yeasts and moulds), and these were often used to clean multiple surfaces, including the kitchen sink, fridge, and in some cases, the kitchen floor, in addition to cleaning dishes. Sponges were typically kept for one (58%) or two months (32%), and never sterilised (70%) (Osaili et al., 2020) [\(footnote 5\)](#).

Due to the paucity of information on the student population, we are unable to identify the challenges to food safety that students may experience, such as sharing a kitchen and fridge with multiple people. Consequently, there is a lack of insight into the food safety behaviours of students, who are potentially a high-risk group. The current research was designed to explore the knowledge, attitudes, and behaviours of university students, as well as the experiences and challenges, relating to food safety and food insecurity, and how these vary between different groups of students. Knowing more about this group will enable us to identify risky food behaviours, develop effective communications to address these, and potentially foster long-term good food safety behaviours in a key cohort of consumers.

## Methodology

Sixteen university students took part in online co-creation sessions which were held between July and December 2021. Participants were recruited through the Food and You 2 re-contact list and an advert in a university hall of residence newsletter. Each co-creation session lasted up to two hours and participants received a £20 voucher as remuneration.

The main aims of the sessions were to identify the experiences and challenges regarding food safety, food security, diet and other food-related topics which university students may experience; to review the draft survey which was adapted from the Food and You 2 survey [\(footnote 6\)](#); and to inform the development of survey questions which capture the experiences and challenges identified.

The first three co-creation sessions focused on the identification of experiences and challenges relating to food safety, food security and diet. The sessions consisted of a brief introduction to the topics; a group discussion about key experiences and challenges; visualisation activity of kitchen food safety 'hotspots'; development and feedback on the draft survey. The final co-creation session focused on finalising the survey. Feedback was provided on the survey to ensure the new questions or response options which had been developed in previous sessions were clear and comprehensive (see Appendix A for the co-creation session discussion guide summary).

Content analysis was used to analyse the data from the co-creation sessions. An initial coding framework, based on the topics in the discussion guide, was updated throughout the analysis process to ensure that any new or emerging themes (for example, bin diving / freeganism [\(footnote 7\)](#) and cleanliness of kitchen sink). Time stamps and quotes were recorded to facilitate reporting of the analysis. A second researcher coded the data to establish a percentage agreement of 85% for sub-themes.

Findings from the co-creation sessions went on to inform the development of an online survey, conducted between 2nd and 28th February 2022. A representative sample of 2,921 undergraduate university students were recruited across England, Wales, Northern Ireland, and Scotland. The sample in Scotland had a target sample of N=500 to allow sub-group analysis. To ensure the sample was representative, quotas were set based on Higher Education Statistics Agency data, by gender, ethnicity, region and parental SEG.

Participants were recruited from the YouthSight panel and received an incentive for completing the survey ([footnote 8](#)). Participants had the option of submitting photos of the sink and fridge at their term-time accommodation for which they could receive an additional incentive. The survey took approximately 20 minutes to complete.

The survey included a range of topics including demographic information, knowledge, attitudes, behaviour relating to food safety, food security, diet and other food-related topics which university students living in halls of residence and shared houses experience (see Appendix A for the survey).

The data were collected during a period of political and economic change and uncertainty following the UK's exit from the EU and the COVID-19 pandemic. This context is likely to have had an impact on the level of food-related behaviours and food security reported. Image coding using citizen science is expected to be launched Winter 2022 (expect to complete 2023), where photos of sinks and fridges which were submitted as part of the online survey will be uploaded to the citizen science platform [Zooniverse \(Opens in a new window\)](#). Citizen scientists will analyse the photos to identify if the sinks and fridges adhere to good hygiene practice.

## Limitations

Co-creation session participants were recruited via the Food & You 2 recontact list (which included contacts in England, Wales, and Northern Ireland) and a university halls of residence (based in the North of England) newsletter. However most participants who took part in the sessions were based at universities in the north of England, which may introduce bias toward the experiences of those in certain geographical areas. Future research could address this issue by recruiting participants from a wider range of regions.

The kitchen image (Figure 1) used in the co-creation sessions did not include a kitchen bin. However, as kitchen bins were a notable discussion point in the co-creation sessions which led to the development of a survey question (see Annex A), it is expected that the impact of the omission on the data will be minimal.

The online survey recruited respondents using a panel (Savanta, formally Youthsight). The use of different recruitment tools can result in differences in the demographic characteristics and observed perceptions of respondents ([Armstrong et al., 2021 \(Opens in a new window\)](#)). However, as the panel used is the largest of young adults in the UK and enabled a range of measures (e.g., quota sampling strategy based on HESA data, a nationally representative sample, weighting applied to the data) to minimise any impact on the data, it is expected that any impact on the data will be minimised.

## Interpreting the findings

To highlight the key differences between socio-demographic and other sub-groups, variations in responses are typically reported only where the absolute difference is 10 percentage points or larger and is statistically significant at the 5% level ( $p < 0.05$ ). However, some differences between socio-demographic and other sub-groups are included where the difference is less than 10 percentage points, when the finding is notable or judged to be of interest. These differences are indicated with a double asterisk (\*\*).

In some cases, it was not possible to include the data of all sub-groups, however such analyses are available in the full data set and tables. Key information is provided for each reported question in the footnotes, including:

- question wording (question) and response options (response)

- number of respondents presented with each question and description of the respondents who answered the question (Base= N)
  - 'Please note:' indicates important points to consider when interpreting the results
1. [Racette, S. B., Deusinger, S. S., Strube, M. J., Highstein, G. R. & Deusinger, R. H. \(2005\) Weight changes, exercise, and dietary patterns during freshman and sophomore years of college. Journal of American College Health, 53\(6\), 245-251, doi.org/10.3200/JACH.53.6.245-251.](#)
  2. [HE student enrolments 2020/21, HESA.](#)
  3. Data from the Scotland 2022 census were not available at the time of publication.
  4. Brown, L (2022) [Student Money Survey 2022 – Results - Save the Student.](#)
  5. [Osaili, T.M., Obaid, R.S., Alowais, K. et al. Microbiological quality of kitchens sponges used in university student dormitories. BMC Public Health 20, 1322 \(2020\). https://doi.org/10.1186/s12889-020-09452-4.](#)
  6. The draft survey was developed from the FSAs flagship consumer survey, Food and You 2. Existing questions were taken from a range of modules including 'Eating at home', 'Food security', 'Food shopping' and 'Eating out and takeaway'.
  7. [For information about freeganism see: The Freegan phenomenon: anti?consumption or consumer resistance?; Food Waste in Australia: The Freegan Response.](#)
  8. Participants received points which could be converted into shopping vouchers.



## Key findings: co-creation sessions

### Food safety behaviours

Food safety refers to handling, preparing, and storing food in a way to best reduce the risk of individuals becoming unwell from foodborne illnesses. The principles of food safety aim to prevent foodborne illness and are based around the 4C's - Cleaning, Cooking, Chilling and Cross Contamination - which all limit bacterial spread. Findings from the co-creation sessions are structured around the 4Cs.

#### Cleaning

Overall, most participants found it hard to maintain the cleanliness in their shared kitchens. Key areas of concern include the sink area; dish sponges and cloths; fridges; kitchen bins; appliances, and kitchen surfaces.

## **Sink areas, sponges, and cloths**

Participants discussed examples of poor cleanliness relating to the kitchen sink, dish sponges and cloths. Common issues include:

- the build-up of dirty dishes, pots, and pans in and next to the sink. This resulted
- in dirty dishes and cookware being left in other areas of the kitchen; prevented others washing their dishes; restricted the use of the sink for activities like handwashing, and for some this lead to washing dishes and cookware in their bathroom or bedroom basin (which may present a cross-contamination issues).
- the drain blocker not being emptied or cleaned for extended periods of time, subsequently remnants of food left in the sink would clog up the drain blocker.
- kitchen sponges and cloths were not replaced or cleaned frequently enough and were used for "...months on end..." without being washed/cleaned.
- financial limitations having a negative impact on the standards of cleanliness, such as not buying cleaning products or not washing tea towels to avoid
- laundry costs:

"...it comes down to finances. At my accommodation, it costs nine pounds to do a wash, so I can't afford to wash things as much as I would like to..."

## **Kitchen bins**

Kitchen bins were a notable discussion point. Common issues include:

- bins often being left until they were overflowing with food and smelled bad: "...some of them would be there for weeks on end, nobody would take them out, it was horrific".
- people not adhering to bin rotas or not feeling responsible for the hygiene
- of their kitchens.
- when bins were taken out of the kitchen, this was not done carefully or hygienically. Kitchen bins would often have to be taken out of the accommodation and put in commercial bins outside: "If you're leaving the bins to like stew kind of, and then you're dragging them down four flights of stairs, you're going to get bin juice everywhere, that happened quite a lot."

## **Kitchen appliances and surfaces**

The cleanliness of kitchen appliances (for example, ovens, microwaves) was a common issue, particularly for fridges. Appliances were rarely, if ever, cleaned. It was felt that there was an issue in people not taking responsibility for cleaning.

"...it [extractor fan] gets so oily... stuff hangs off of it and can drip into your food..."

Participants discussed examples of poor cleanliness of the kitchen surfaces, such as:

- food being left on the kitchen table or dropped and left on the floor.
- food being left in pans on the hob/cooker, sometimes for days.
- the kitchen table being used for multiple purposes (for example, social hub
- in accommodation) other than eating but rarely, if ever, cleaned.

## **Chilling**

The lack of space in the fridge was a notable issue which was discussed in each co-creation session. Participants reported that a fridge might often be shared between four to six people, and many felt that there was not enough space. The lack of space in shared fridges often resulted in fridges being overfilled and different types of food (for example, meats and vegetables) not being separated:

“...fridge is shared with many people and food is squished wherever there's space...”

How and where food was stored in the fridge was also a notable issue. Typically, fridge space was divided with each housemate having an allocated shelf. As such it was often not possible to store different types of food (for example, meats and vegetables) separately. Participants also discussed foods being left uncovered and/or stored next to other food. One participant stated:

“Everybody chucks their food into the fridge covered or uncovered, mostly uncovered, so you have a mix of raw stuff and cooked stuff in each of your own areas that could be potentially nasty”.

Cross-contamination with meat products was highlighted as a particular issue for vegans and vegetarians who wanted to avoid “...meat juices dripping onto their food”. This concern influenced where food was stored in fridges, for example, one participant arranged with flat mates to use the top shelf on the fridge for items such as vegetables and other vegetarian/non-meat products. Another participant, who had two fridges in their household, arranged with housemates to allocate one fridge to non-meat products, and the other to meat products.

Out-of-date and/or decaying food being left in the fridge was also a common issue and was often linked to students returning home during holidays and not removing food from the fridge before they left. This behaviour was exacerbated through the COVID- pandemic as many students returned home to self-isolate at short notice. Participants reported being reluctant to throw out-of-date food to avoid upsetting housemates, consequently decaying food was often left in the fridge for prolonged periods of time.

## **Cross-contamination**

A small number of participants reported that their housemates washed raw chicken in the kitchen sink. Participants were aware that this behaviour presents a cross-contamination risk, especially as kitchen sinks were often full of crockery and cookware, and cleaned infrequently:

“There’s been times where I’ve just found a beheaded chicken in the sink... it’s not hygienic when there’s chicken blood everywhere. I don’t even eat chicken and I was going to get food poisoning.”.

A participant described how their family members typically washed raw chicken, but that they did not think it was correct to so do. This suggests that food hygiene behaviours learnt in the family home can be adapted to adhere to recommended hygiene practises.

“I have an argument with my family members whether I should wash the meat in the sink, but I said to them we didn't wash meat in the sink because it may cause contamination and blood may spray everywhere, so I will try my best to prevent washing meat in the sink.”

## **Cooking**

The ability to cook in shared kitchens was not a common issue. However, some participants mentioned that broken appliances were not repaired quickly, and that a lack of experience with specific kitchen appliances acted as a barrier for a minority of students being able to cook in their kitchens

## Food storage

“...everyone gets one cupboard so there’s not enough space... I can’t fit stuff in the cupboard... anything non-perishable I have put on the floor. I don’t have anywhere else to put it...”.

Participants highlighted frustration with the lack of cupboard space in shared kitchens and were often allocated a single cupboard for ambient food (food which can be stored at room temperature) and kitchen items. Consequently, participants reported storing ambient food and cookware in alternative locations, including bedrooms, kitchen counters, and the floor limiting space for food preparation.

## Kitchen heat maps

Using an image of a kitchen, each participant was asked to indicate food safety ‘hotspots’ (i.e., areas that may pose a food safety risk) in their shared kitchens. The locations highlighted by each participant were combined to create a heat map identifying common areas of concern (Figure 1).

**Figure 1. Heat map of areas of the kitchen participants identified as a risk to food safety**



Common areas of concern were the fridge, sink, hob and table. The floor was identified as an issue by some participants: “the floor is overlooked a bit... things get dropped on the floor and just left.” Participants noted that the kitchen image did not depict a bin, which they felt could often be food safety risk.

## Food security

Since the COVID-19 pandemic food insecurity has disproportionately affected students (Defeyter et al, 2020). Participants discussed their personal experiences of food insecurity, and the impact on food safety and food-related behaviours.

Key themes that arose were the reliance on student loans for food, alternative sources of food, and the impact of the COVID-19 lockdown restrictions. Some international students described that they had not experienced food insecurity themselves but were aware that others had.

Many participants discussed how they relied on student finance to pay for food and the 'cycle' in eating habits which this creates. Many participants reported struggling to afford food in the lead up to the next student finance payment. Often this meant a dependence on cheap food with reduced quality or nutrition, with some participants exclusively buying reduced foods. A small number of participants mentioned that they had used alternative methods to source food, these include getting food from the waste bins of shops or supermarkets (i.e., 'freeganism'); food waste apps (for example, Olio) and/or food subscription services (for example, 'wonky' vegetable boxes).

"...bin skipping is a lot more trendy and is becoming more acceptable especially amongst student populations... but it can be quite high risk... there isn't a single piece of food in my fridge that didn't come out of a bin, and it is chock-full."

## **The impact of COVID-19 and lockdown(s)**

"When Covid started, some students were doing part time work and they couldn't do the part time work in the beginning... they couldn't get their daily wage so they restricted buying expensive food items."

The COVID-19 lockdown resulted in many participants experiencing loss of employment and associated income. Many students rely on the income of casual work and were unable to work during the pandemic. Consequently, these students struggled financially and were not able to afford the types or quality of food which they would buy prior to the pandemic.

Many participants describe that they had limited access to larger supermarkets during lockdown, and local shops were sold out of certain foods - this was a notable issue for those with dietary requirements. Consequently many bought food online via supermarket deliveries. Whilst this enabled some students to bulk-buy certain items (for example, pasta, canned foods) to save money, for others this method of shopping resulted in spending more than they usually would to meet the 'minimum spend' level.

"...all I had was a Sainsbury's local near me, which is expensive enough as it is. It was an hour walk to my local Aldi... when the pandemic hit you weren't supposed to go far out and there were no buses so I was stuck with the Sainsbury's local".

Participants' experiences of support from their university were variable and dependent on their place of study. Whilst the majority of participants stated that they weren't offered support, some mentioned that universities had given them food baskets containing essentials (for example, tinned foods, bread and pasta).

## **Conclusion**

The co-creation sessions explored the experiences and challenges, relating to food safety and food insecurity of university students in shared kitchens.

We identified that students found it hard to maintain the cleanliness in their shared kitchens particularly the sink area; dish sponges and cloths; fridges; kitchen bins; appliances, and kitchen

surfaces. A common issue was the lack of space in the fridge, with the tendency to allocate 'one shelf per person' presenting cross-contamination issues. A particularly notable finding was that sourcing food from shop waste bins (i.e., 'freeganism') may be an emerging trend in the student community.

We used the findings of the co-creation sessions to inform the development of the subsequent online survey, exploring these experiences and challenges in a wider nationally representative sample.



## Key findings: online survey

### Respondent characteristics

A nationally representative sample of 2,921 undergraduate university students took part in the survey during February 2022. Quotas were set based on Higher Education Statistics Agency data, by gender, ethnicity, region and parental SEG.

- Age: 44% of the respondents were aged 17-19 years, 39% aged 20-22 years and 17% above 23 years old ([footnote 1](#)).
- Ethnic group or background: 70% of respondents identified as English, Welsh, Scottish, Northern Irish or British, 6% as Indian, 4% as Pakistani, 3% as Chinese, and 3% as African ([footnote 2](#)).
- Annual income: 45% reported an income of less than £13,000, 13% reported having £13,000-£18,999, 8% having £19,000-£25,999 per year and 23% stating to have an income greater than £26,000 ([footnote 3](#)).
- Parental socio-economic group: 21% reported the chief income earner in their parental household was a professional/higher managerial (e.g. doctor, lawyer, chairman or managing director of medium or large firm), 34% reported a manager/ senior administrator as their chief income earner (e.g. senior manager, owner of small business, head teacher), 14% identified having a supervisor / clerical / skilled non-manual profession (e.g. teacher, secretary, junior manager, police constable), and 26% in the skilled manual worker, semi-skilled, unskilled manual worker, receiving state benefits for sickness or other category ([footnote 4](#)).
- Country: 80% lived in England, 13% lived in Scotland, 5% lived in Wales, and 2% in Northern Ireland ([footnote 5](#)).
- University type: 40% of respondents studied at Russell Group universities, 22% studied at pre-1992 universities, 34% studied at post-1992 universities and 5% studied at special institutions, UCAS FEs and non-UCAS FEs ([footnote 6](#)).
- Year of undergraduate study: 41% of respondents were 1st year students, 29% were 2nd year students, 20% were 3rd year students, 7% were 4th year students and 2% were 5th year students ([footnote 7](#)).
- Mode of study: 97% of respondents studied full-time and 3% studied part-time ([footnote 8](#)).
- Diet: 50% of respondents reported that they were an omnivore, 18% reported that they were mainly vegetarian but occasionally eat meat (e.g., flexitarian), 10% reported that they were vegetarian, 7% reported that they were pescatarian, and 5% reported that they were mainly vegan ([footnote 9](#)).
- Term-time accommodation: 33% of respondents lived in privately rented accommodation, 31% live in hall of residence without catering, 15% live with parents or guardians and 17%

live in halls with catering. First year students (52%) were more likely to live in halls of residence without catering compared to other year groups, with only 15% of 4th year students living in halls ([footnote 10](#)).

- Student kitchens: 17% were shared by 2 people, 37% of student kitchens were shared by 3-4 people, 27% were shared by 5-6 people, and 14% were shared by 7 or more people ([footnote 11](#)).

## Food safety behaviours

### Cleaning

Almost two thirds (61%) of respondents reported that they did not always wash their hands before eating and half (49%) reported not always washing their hands before preparing or cooking food.

A third of respondents (33%) reported that they do not always wash their hands immediately after handling raw meat, poultry or fish and 60% reported that they did not always wash their after handling frozen chicken products.

Respondents were asked what they typically use when washing dishes at their term-time accommodation. Most respondents reported that they used washing-up liquid (72%), a sponge or cloth (66%) and/or hot water (60%) when washing dishes. However, almost 1 in 10 used handwash or soap (9%) and 7% used their hands rather than sponge or cloth when washing dishes ([footnote 12](#)).

Around 1 in 10 respondents reported that they store (12%) or wash (11%) dirty cutlery, crockery, or pans in their bedroom or in a non-kitchen area ([footnote 13](#)).

Respondents were asked how often, if at all, they experienced a given number of issues with their kitchen sink. Most respondents reported that often (i.e., about once a week or more often): their kitchen sink was filled with dirty dishes, pots or pans (70%), was dirty, greasy or grimy (56%), had left over food in it (60%) ([footnote 14](#)).

When respondents were asked how often they replace their dish sponge or cloth, almost a third (32%) reported that they did this about once a week or more often, almost two-thirds (62%) did this two or three times a month or less often, and 2% reported that they never replace their dish sponge or cloth ([footnote 15](#)). Conversely, when respondents were asked how often they replace their tea towel with a clean one, around 6 in 10 (61%) respondents did this about once a week or more often and around 3 in 10 (29%) did this two or three times a month or less often, however 6% of respondents reported that they do not use a tea towel ([footnote 16](#)).

### Chilling

#### Fridge access and space

The majority (88%) of respondents had access to a fridge in their shared kitchen, however 12% did not report that they had access to a fridge ([footnote 17](#)). A third (33%) reported that the type or quality of food they purchase is limited by the amount of fridge space available ([footnote 18](#)).

Of respondents who had access to a fridge:

- Almost a third (29%) reported that there was not enough space in the fridge to store their food ([footnote 19](#)).
- Most stored their food in an allocated area in their fridge, on either an allocated shelf (48%) or drawer (13%), however over a quarter (28%) stored food wherever there was space, and only 21% stored different types of food in specific areas

- of the fridge (for example, ready-to-eat foods on the top shelf) [\(footnote 20\)](#).
- Around two-thirds (65%) reported that their fridge had contained food past the use-by date, 64% reported leftovers which had been left for more than two days and 37% reported uncovered (cooked or raw) meats [\(footnote 21\)](#).
- Around 4 in 10 (42%) did not check the temperature of their fridge, 33% reported that someone in their accommodation checks the temperature of the fridge and 6% did not need to as the fridge contained a temperature alarm [\(footnote 22\)](#). Of those who check the temperature of their fridge, almost two-thirds (62%) reported doing this at least once a week [\(footnote 23\)](#). Though many use recommended methods to check the temperature of their fridge (34% check the temperature display built into the fridge; 13% put a thermometer in the fridge) many use other methods (24% check the setting/gauge; 14% check for ice or condensation; 12% feel food inside to see if it is cold) [\(footnote 24\)](#).

All respondents were asked what temperature the inside of a fridge should be, 61% of respondents reported that it should be between 0-5 degrees Celsius, in line with FSA recommendations, however 22% reported that the temperature should be above 5 degrees Celsius [\(footnote 25\)](#).

## Freezing and defrosting

The majority (85%) of respondents had access to a freezer in their shared kitchen [\(footnote 26\)](#). Of these, 59% agreed there was enough space to store their food in the freezer [\(footnote 27\)](#).

However, 38% of respondents reported that the type or quantity of food they purchase, prepare, or cook is limited by the amount of freezer space available [\(footnote 28\)](#).

Almost two-thirds (64%) of respondents reported that they had enough space in their kitchen to cool and defrost food [\(footnote 29\)](#). However, almost 1 in 10 (9%) respondents reported that they defrost or cool food in their bedroom or in a non-kitchen area [\(footnote 30\)](#).

Respondents were asked which method they use to defrost meat and fish. Less than a third (29%) of respondents reported that they defrost meat or fish in the fridge and 11% reported that they use a microwave, as recommended by the FSA. Around a third (34%) of respondents reported that they leave the meat or fish at room temperature and 13% leave the meat or fish in water [\(footnote 31\)](#).

## Cooking

Most respondents agreed that there was enough space in their kitchen for food preparation (71%) and food storage (68%). However, some respondents reported that the type or quantity of food which they purchase, prepare or cook is limited by the food preparation area (16%) or cooking area (14%) available [\(footnote 32\)](#). 1 in 10 respondents prepare food (10%) and 8% cook food in a bedroom or non-kitchen area [\(footnote 33\)](#).

Around 6 in 10 (61%) respondents reported that they always cook food until steaming hot and cooked all the way through, however 39% reported that they do not always do this [\(footnote 34\)](#). When respondents were asked to indicate how often they eat different meats when they are pink or have pink juices, the majority reported that they never eat chicken or turkey (80%), sausages (77%), pork (72%), or duck (60%) when it is pink or has pink juices. However, fewer respondents reported never eating beef burgers (55%) or red meat (45%) when it is pink [\(footnote 35\)](#).

## Cross-contamination

Over half (54%) of respondents reported washing raw chicken at least occasionally [\(footnote 36\)](#).

Around 4 in 10 (38%) respondents reported that they store raw meat and poultry at the bottom of the fridge, as recommended by the FSA, however the majority (61%) do not do this (for example,

37% store meat wherever there is space) [\(footnote 37\)](#), with only 22% of respondents storing raw meat away from cooked foods [\(footnote 38\)](#).

## Use-by dates and 'eat within' information

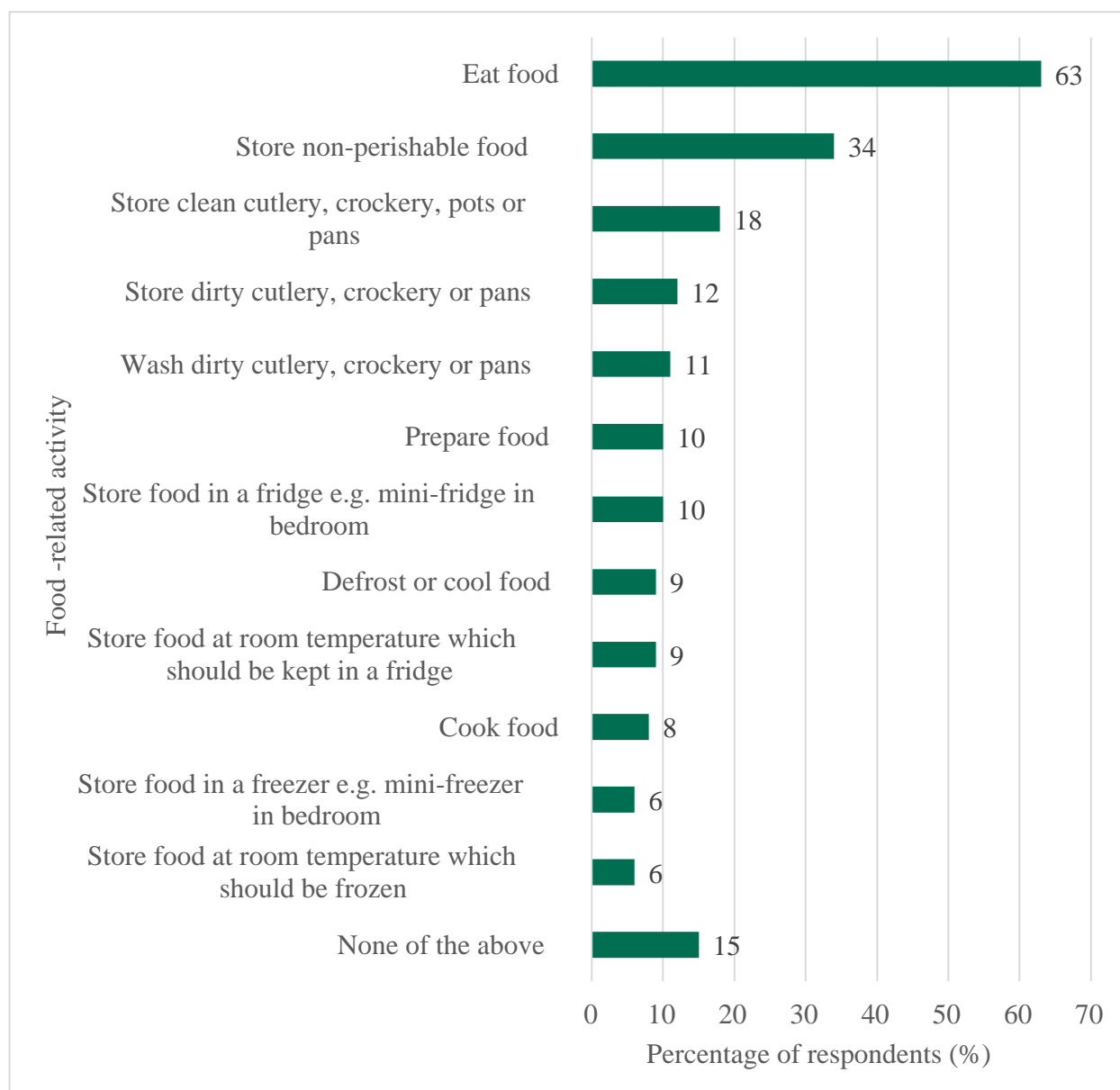
In accordance with FSA recommendations, 60% of respondents identified the use-by date as the information which shows that food is no longer safe to eat. However, 25% of respondents identified the best before date as the date which shows food is no longer safe to eat [\(footnote 39\)](#), and less than half (45%) of respondents reported that they always check use-by dates before they prepare or cook food [\(footnote 40\)](#).

Respondents were asked if they had eaten some types of food, from a given list, past the use-by date in the past month. Of those who had eaten each type of food in the past month, over half (51%) of respondents had eaten bagged salad past the use-by date, almost 4 in 10 had eaten cheese (38%), milk (37%) or plant-based milk (37%) past the use-by date. Almost a third of respondents had eaten cooked meats (32%), or tofu or meat substitutes (32%) past the use-by date [\(footnote 41\)](#).

Respondents were asked how often, if at all, they followed the 'eat within' (for example, 'eat within 3 days of opening') information for different types of food. Of those who eat each type of food, around three-quarters (77%) of respondents had eaten bagged salad or cheese (74%) after the 'eat within' period, approximately 7 in 10 respondents had plant-based milk (71%), tofu or meat substitutes (69%) or cooked meat (68%) after the 'eat within' period. Over 6 in 10 respondents had consumed milk (64%), or smoked fish (63%) after the 'eat within' period and around half (49%) had eaten raw meat after the 'eat within' period [\(footnote 42\)](#).

## Food-related activities in non-kitchen areas

**Figure 2. Percentage of respondents who do food-related activities in non-kitchen area**



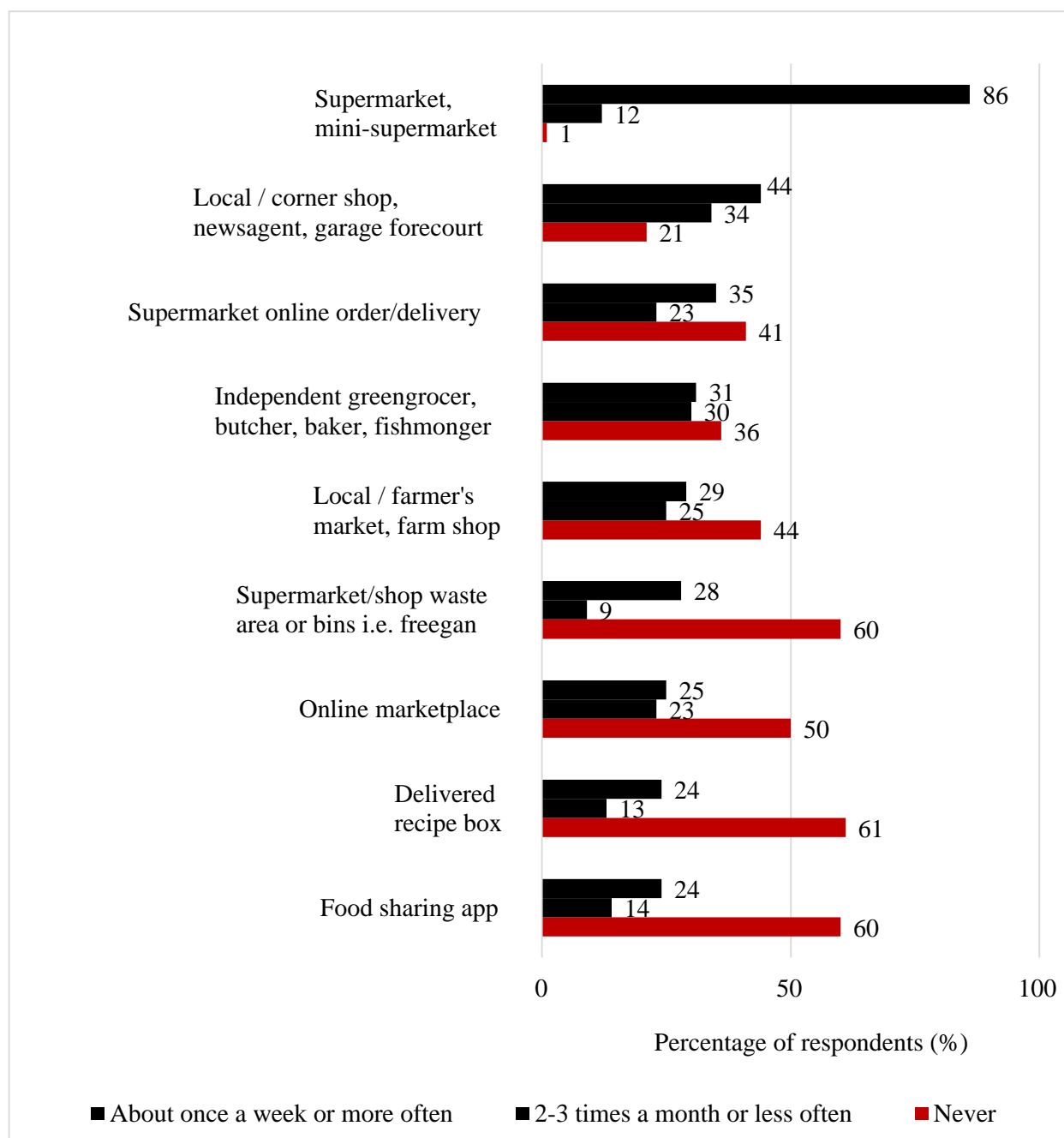
Source: University student kitchen survey 2022

Respondents were asked which, if any, food-related activities they ever do in non-kitchen areas at their term-time accommodation. Almost two-thirds (63%) of respondents reported that they ate food in their bedroom or non-kitchen area. Around 1 in 10 respondents reported that they prepare (10%), defrost or cool (9%) or cook (8%) food in their bedroom or non-kitchen area.

Bedroom or non-kitchen areas are also used to store different types of food. Around a third (34%) reported that they store non-perishable foods (for example, canned foods, pasta, rice) in their bedroom or non-kitchen area. However, a similar percentage of respondents reported that they store chilled food (9%) or frozen food (6%), at room temperature in a non-kitchen area. Many respondents reported that they have used a non-kitchen area for storing clean (18%), dirty (12%), and/or washing (11%) of crockery, cutlery, and pans (Figure 2) ([footnote 43](#)).

## Accessing food

**Figure 3: Means of accessing food**



Source: University student kitchen survey 2022

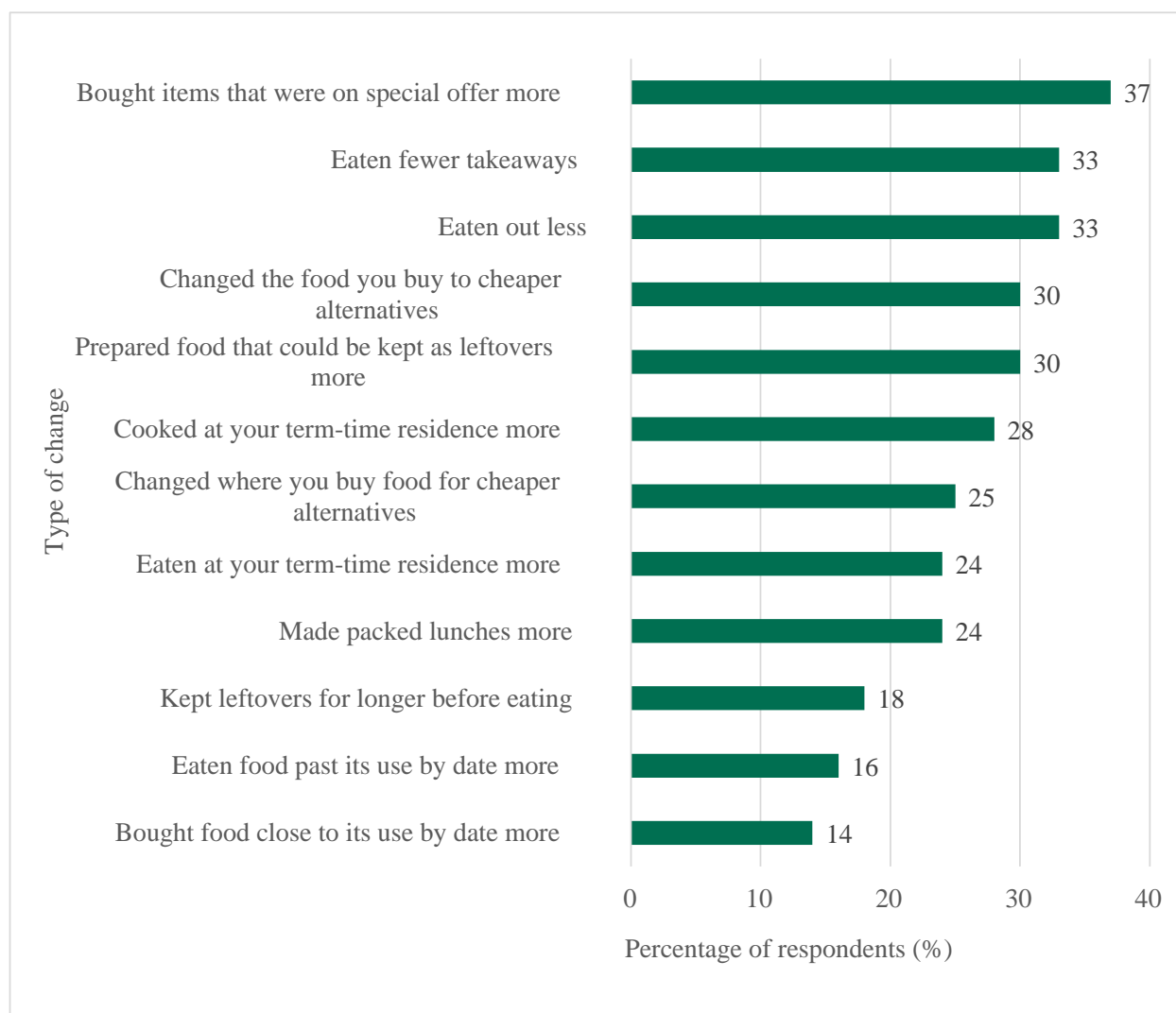
Respondents were asked to indicate where and how frequently they buy food. Most respondents reported that they bought food from a supermarket or mini supermarket about once a week or more often (86%). Over 4 in 10 (44%) respondents reported that they bought food from local/corner shops (for example, newsagent, garage forecourt) and 35% of respondents had food delivered from a supermarket. Many respondents reported that they buy food using online platforms - 25% have shopped for food using an online marketplace (for example, Amazon, Etsy, Gumtree, Facebook Marketplace), and 24% got food through a food sharing app (for example, Olio, Too Good To Go) (Figure 3) ([footnote 44](#)).

Almost 4 in 10 (37%) respondents reported that they have got food from the bins or waste area of a supermarket or shop, with almost 3 in 10 (28%) respondents doing this about once a week or more often, and around 1 in 10 (9%) respondents doing this 2-3 times a month or less often. The likelihood that respondents reported that they had got food from the bins or waste area of a supermarket or shop varied between different groups of people in the following ways:

- Age group: Older respondents were more likely to have got food from supermarket / shop waste areas or bins than younger respondents. For example, 56% of those aged 23-25 years had got food from supermarket / shop waste areas or bins, compared to 28% of those aged 17-19 years.
- Gender: Men (54%) were more likely to have got food from supermarket / shop waste areas or bins than women (26%).
- University group: respondents at a post-1992 university (43%) were more likely to have got food from supermarket / shop waste areas or bins than those at a Russell groups university (33%) [\(footnote 45\)](#) or pre-1992 university (30%).
- Course year: respondents in the second (43%), third (44%) or fourth (40%) year were more likely to have got food from supermarket / shop waste areas or bins than those in the first year (28%).
- Parental SEG: respondents with a parent/guardian in a professional or higher managerial occupation (55%) were more likely to have got food from supermarket / shop waste areas or bins than those who had a parent/guardian in other occupational groups (for example, 25% of those with a parent/guardian in a supervisor, clerical or skilled non-manual occupation).
- Diet: respondents who were vegan (64%), pescatarian (63%) or vegetarian (43%) were more likely to have got food from supermarket / shop waste areas or bins than those who were omnivore (26%).
- Country: respondents in England (39%) were more likely to have got food from supermarket / shop waste areas or bins than respondents in Wales (25%) or Scotland (21%)\*\* [\(footnote 46\)](#).
- Region: respondents in London (60%) or the North West (48%) were more likely to have got food from supermarket / shop waste areas or bins than those in the South West (18%).
- Food security: respondents who were food insecure were more likely to have got food from supermarket / shop waste areas or bins (55%) than those who were food secure (22%).

## Food-related behaviours and eating habits

**Figure 4: Changes in eating habits in the previous 12 months**



Source: University student kitchen survey 2022

Respondents were asked about changes to eating habits in the last 12 months. The majority (88%) reported change and those respondents were asked to indicate the reason for the change.

The most common changes related to what and where respondents ate (33% eaten fewer takeaways, 33% eaten out less, 28% cooked at term-time residence more, 24% eaten at term-time residence more), reducing food costs (37% bought items on special offer, 30% changed the food they buy for cheaper alternatives, 25% changed where they buy food for cheaper alternatives) and increased food management behaviours (30% prepared food that could be kept as leftovers more, 24% made packed lunches more). Eating habits had changed for most respondents with only 12% indicating that there had been no change in their eating habits in the last 12 months (Figure 4) ([footnote 47](#)). The main causes of reported changes in eating habits were financial reasons (45%), going/returning to university (41%), health reasons (30%) and COVID-19 and lockdown (24%) ([footnote 48](#)).

## Food security

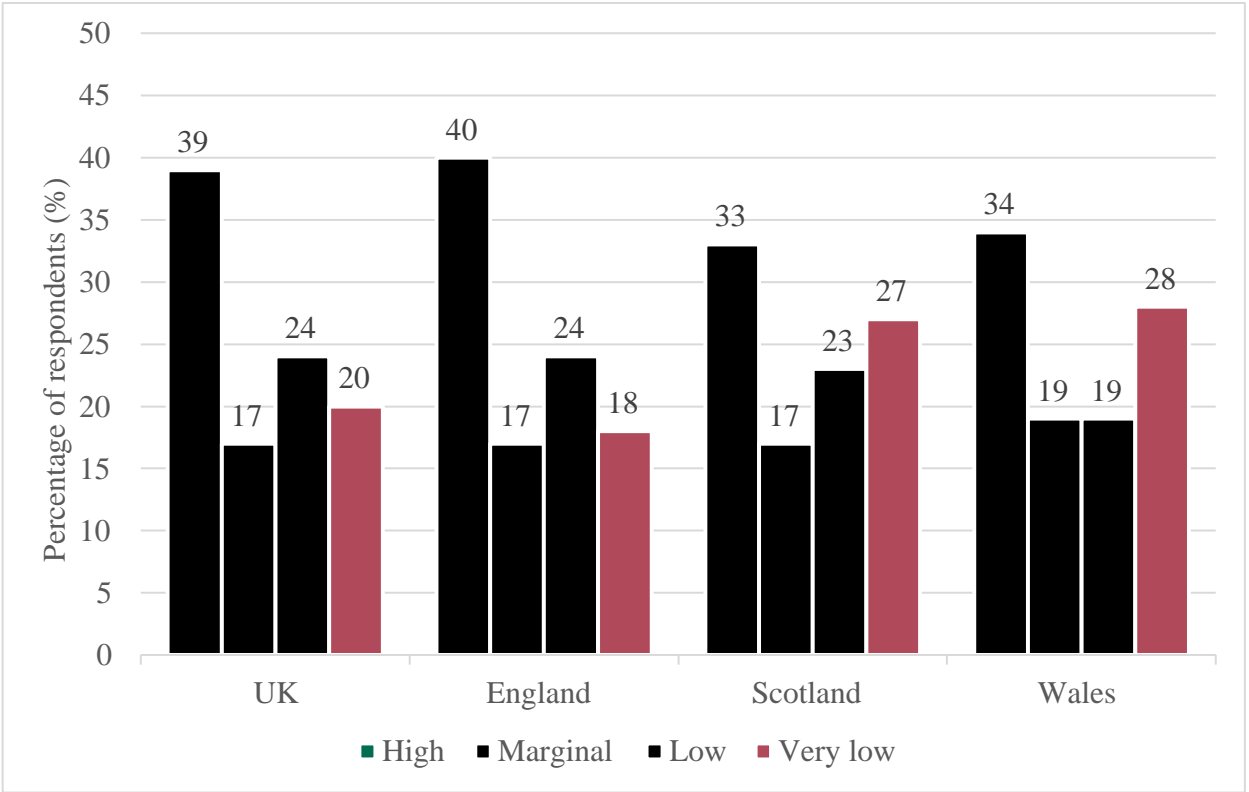
This chapter reports the level of food security and food bank use.

“Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.” World Food Summit, 1996.

A modified version of the [U.S. Adult Food Security Survey Module \(Opens in a new window\)](#), developed by the United States Department of Agriculture (USDA), was used to measure food security at the level of respondents. Those with high or marginal food security are referred to as food secure. Those with low or very low food security are referred to as food insecure. The following categories define ranges of food security:

- High: no reported indications of food-access problems or limitations.
- Marginal: one or two reported indications—typically of anxiety over food sufficiency or shortage of food in the house. Little or no indication of changes in diets or food intake.
- Low: reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake.
- Very low: reports of multiple indications of disrupted eating patterns and reduced food intake.

Figure 5: Food security classification by country



Source: University student kitchen survey 2022

Across the UK, over half (56%) of respondents were classified as food secure (39% high, 17% marginal) and 44% of respondents were classified as food insecure (24% low, 20% very low). Across England, Scotland and Wales respondents had comparable levels of high, marginal, and low food security. However, those in Scotland (27%)\* and Wales (28%) were more likely to report very low food security than those in England (18%) (Figure 5) [\(footnote 49\)](#) [\(footnote 50\)](#)

Table 1: Food Security classifications by HEI region (England)

Region	Very low	Low	Food insecure	Marginal	High	Food secure
North West	17%	43%	60%	11%	29%	40%
Yorkshire & Humber	13%	34%	47%	15%	38%	53%
South East	20%	24%	44%	19%	37%	56%
North East	24%	20%	44%	15%	42%	57%
London	17%	25%	42%	18%	40%	57%

Region	Very low	Low	Food insecure	Marginal	High	Food secure
East	23%	19%	42%	15%	43%	58%
West Midlands	20%	19%	39%	15%	45%	60%
South West	22%	12%	34%	16%	49%	65%
East Midlands	17%	16%	33%	25%	42%	67%
England	18%	24%	42%	17%	40%	57%

Source: University student kitchen survey 2022

Table 1 shows that across England, respondents at universities in the North West (60%: 43% low, 17% very low) were more likely to report that they were food insecure compared to those in the East Midlands (33%: 16% low, 17% very low) and South West (35%: 12% low, 22% very low).

The reported level of food security varied between different groups of people in the following ways:

- Age group: older respondents were more likely to report that they were food secure compared to younger respondents. For example, 57% of those aged 32 years and over reported that they were food insecure compared to 40% of those aged 17-19 years.
- Gender: men (49%) were more likely to report that they were food insecure than women (40%)\*\*.
- University group: respondents at a post-1992 university (53%) were more likely to report that they were food insecure compared to those at a Russell group university (35%) ([footnote 51](#)).
- Type of accommodation: respondents who lived in their parents' or guardians' home (28%) were less likely to report that they were food insecure compared to those who lived in other types of accommodation (for example, 51% of those who lived in halls of residence with catering provided were food insecure).
- Diet: those in many dietary groups (for example, 63% of vegans) were more likely to report that they were food insecure compared to omnivores (34%).

Respondents were asked if they or anyone else in their household had received a free parcel of food from a food bank or other emergency food provider in the last 12 months. Most respondents (90%) reported that they had not used a food bank or other emergency food provider in the last 12 months, however almost 1 in 10 (8%) respondents reported that they had ([footnote 52](#)).

The reported level of food bank use varied between different categories of people in the following ways:

- Age group: older respondents were more likely to report that they had used a food bank or other emergency food provider compared to younger respondents. For example, 27% of those aged 32 years or over had used a food bank or other emergency food provider compared to 5% of those aged 17-19 years.
- Course year: respondents who were in their fourth year of study (16%) were more likely to report that they had used a food bank or other emergency food provider compared to those who were in their first year (6%).
- Mode of study: respondents who studied part-time (20%) were more likely to report that they had used a food bank or other emergency food provider compared to those who studied full-time (7%).
- University region (England): respondents in the London (15%) were more likely to report that they had used a food bank or other emergency food provider compared to those in Yorkshire and Humberside (2%) and Eastern England (2%).
- Food security: food insecure respondents (16%) were more likely to report that they had used a food bank or other emergency food provider compared to those who were food

secure (2%).

Respondents who had received a food parcel from a food bank or other provider were asked to indicate how often they had received this in the last 12 months. Of these respondents, almost a quarter (22%) had received a food parcel on only one occasion in the last 12 months, two-thirds (66%) had received a food parcel on more than one occasion but less often than every month, and 4% had received a food parcel every month or more often **55**.

## Conclusion

This research explored the knowledge, attitudes and behaviours of university students relating to food safety, food security, diet and other food related behaviours, and identified experiences and challenges faced by this group. We have identified several key findings which relate to food safety and hygiene behaviours: students find it difficult to maintain cleanliness in shared kitchens, with many not following recommended food safety and hygiene behaviours; some students engage in food-related behaviours in non-kitchen areas including the storage and preparation of food; fridges present several food safety challenges with many lacking adequate fridge space, often allocating 'one shelf per person' and fridges containing old and expired food; and, some students are sourcing food from shop waste bins (i.e., 'freeganism'), a behaviour which may be an emerging trend in the student community. In addition, we have evidenced that students have relatively high levels of food insecurity (44%), compared to the most recent national statistic from [Food and You 2](#) (Wave 4, 18%, for adults in England, Wales and Northern Ireland), particularly amongst students at Universities based in the North West of England (60%). The current findings demonstrate that students are a unique group of consumers which would benefit from informed and targeted communications.

The use of co-creation sessions provided several novel insights are new areas of food safety concern including the use of bin diving to source food, tendency to allocate 'one shelf per person' in the fridge, and poor cleanliness relating to the kitchen sink, dish sponges, cloths, and kitchen bins. These insights demonstrate the power of engaging consumers as stakeholders to advance our understanding of consumer knowledge, attitudes, and behaviours, especially when exploring the food safety risks of 'overlooked' groups.

The current findings reveal several areas which could benefit from further research, such as exploring the motivations of those who 'bin dive' (i.e., which may have many drivers, including sustainability concerns) and trialling interventions to improve to food safety behaviours in the student population (e.g., providing more fridge space, or colour coded areas in the fridge). This research has identified new areas of food safety concern which are not captured in FSA consumer surveys, inclusion of these topics in future research or existing surveys would provide an opportunity to develop understanding of the prevalence of the identified food safety risks of the wider population.

1. Question: What is your age? Response: Open text. Base = 2921, all respondents.
2. Question: Which one of the following best describes your ethnic group or background?  
Responses: English/Welsh/Scottish/Northern Irish/British, Irish, Gypsy or Irish Traveller, any other white background, White and Black Caribbean, White and Black African, White and Asian, any other mixed/multiple ethnic background, Indian, Pakistani, Bangladeshi, Chinese, any other Asian/Asian British background, Caribbean, African, any other Black/Black British group, Arab, any other ethnic group, prefer not to say. Base = 2921, all respondents. Please note: Percentages do not add up to 100 as not all ethnic groups or background are reported, see data tables for complete data.

3. Question: Thinking about your annual income, which of the following groups represents your total income before deductions for income tax, National Insurance etc? This includes your student loan, income from working, grants, and any money from your parents, relatives, or guardians. Responses: Less than £13,000, £13,000-£18,999, £19,000-£25,999, £26,000-£31,999, £32,000-£47,999, £48,000-£63,999, £64,000-£95,999, More than £96,000, Prefer not to say, I don't know. Base = 2921, all respondents.
4. Question: Which of the following best describes the occupation of the chief income earner in your parental/guardian household? Responses: A - Professional / higher managerial (e.g. doctor, lawyer, chairman or managing director of medium or large firm), B - Manager / senior administrator (e.g. senior manager, owner of small business, head teacher), C1 - Supervisor / clerical / skilled non-manual (e.g. teacher, secretary, junior manager, police constable), C2 - Skilled manual worker (e.g. fireman, plumber, electrician, hairdresser), D - Semi-skilled / unskilled manual worker (e.g. assembler, postman, shop assistant), E - Receiving state benefits for sickness, unemployment, old age or any other reason, Other, Prefer not to say. Base = 2921, all respondents.
5. Question: Are an undergraduate student at a university in England, Scotland, Wales or Northern Ireland? Responses: Yes, England; Yes, Scotland; Yes, Northern Ireland; No. Base = 2921, all respondents.
6. Question: Which university do you study at...? Responses: [List all universities] Base = 2921, all respondents.
7. Question: Which year of undergraduate study are you currently in? Responses: 1st year, 2nd year, 3rd year, 4th year, 5th year, placement or industry year, other. Base = 2921, all respondents.
8. Question: What is your mode of study? Responses: full-time, part-time. Base = 2921, all respondents.
9. Question: Do you consider yourself to be any of the following? Responses: Vegetarian - A person who does not eat meat or fish; Pescatarian - A person who does not eat meat but does eat fish; Vegan - A person who does not eat or use animal products; Mainly vegetarian but occasionally eat meat e.g. flexitarian; Omnivore - A person who eats meat and/or fish; Other; Prefer not to say.
10. Question: What type of housing do you usually live in during term-time? Responses: Halls of residence without catering, Halls of residence with catering provided, Private rental (landlord/agency) e.g. house, flat or lodger, Own property, At parental/guardian home, Other. Base = 2921, all respondents.
11. Question: How many people in total (including yourself) use your kitchen area? Responses: Only me, 2 people, 3-4 people, 5-6 people, 7-8 people, 9 or more people. Base = 2921, all respondents.
12. Question: What do you usually use to wash dishes? Responses: Washing-up liquid, Dish sponge or cloth, Hot water, Dish brush, Dishwasher, Stainless steel scourer, Handwash or

hand soap, Hands only (no sponge or cloth), Other, please specify, I do not wash dishes.  
Base = 2921, all respondents.

13. Question: Do you ever do any of the following activities in your bedroom or a non-kitchen area in your accommodation? Responses: Eat food; Store non-perishable food for example, canned foods, pasta, rice; Store clean cutlery, crockery, pots or pans; Store dirty cutlery crockery or pans; Wash dirty cutlery, crockery or pans; Prepare food, Store food in a fridge for example, mini-fridge in bedroom; Defrost or cool food; Store food at room temperature which should be kept in a fridge e.g. milk, yogurt; Cook food; Store food in a freezer for example, mini-freezer in bedroom; Store food at room temperature which should be frozen for example, frozen chicken nuggets, frozen peas; None of the above. Base = 2921, all respondents.
14. Question: How often, if at all, do you experience the following issues with your kitchen sink? A) Sink filled with dirty dishes, pots or pans. B) Old food left in sink or sink trap. C) Sink is dirty, grimy, or greasy. Responses: Every day, Most days, 2-3 times a week, About once a week, 2-3 times a month, About once a month, Less than once a month, Never, Can't remember. Base = 2921, all respondents.
15. Question: How often do you usually replace the dish sponge or cloth? Responses: Every day, Most days, 2-3 times a week, About once a week, 2-3 times a month, About once a month, Less than once a month, Never, Don't know. Base = 1934, those who use a dish sponge / cloth to wash dishes.
16. Question: If you use a tea towel, how often is the tea towel usually replaced with a clean one? Responses: Every day, Most days, 2-3 times a week, About once a week, 2-3 times a month, About once a month, Less than once a month, Never, Don't know. Base = 2921, all respondents.
17. Question: Which of the following items, if any, do you have access to in the kitchen? Responses: Fridge, Freezer, Oven, Microwave, Kettle, Toaster, Hobs, Dishwasher, None of the above. Base = 2921, all respondents.
18. Question: Is the type or quantity of food you purchase, prepare or cook ever limited by the availability of the following facilities? Responses: Food preparation area, Fridge space, Freezer space, Cupboard space, Eating area, Cooking area, Equipment such as pans and sharp knives, None of the above. Base = 2921, all respondents.
19. Question: In your kitchen area to what extent do you agree or disagree that there is enough space to store your food in the fridge. Responses: Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree. Base = 2594, those who have access to a fridge in the kitchen.
20. Question: Typically, where in the fridge do you store your food? Responses: On an allocated shelf, In an allocated drawer, In the door of the fridge, Wherever there is space, I store different types of food in specific areas of the fridge i.e. ready-to-eat foods on the top shelf, raw meat and fish on the bottom shelf, fruit and vegetables stored in the bottom drawer, Other (please specify). Base = 2560, those who have access to a fridge in the kitchen.

21. Question: Does your fridge ever contain the following items, this can include food which belongs to other people? A) Food past the use-by date. B) Uncovered raw or cooked meat. C) Leftovers that have been left for longer than 2 days. Responses: Yes, No, Don't know. Base = 2594, those who have access to a fridge in the kitchen.
22. Question: Do you, or anyone else in your household, ever check your fridge temperature? Responses: Yes, No, I don't need to - it has an alarm if it is too hot or cold, Don't know. Base= 2912, those who have a fridge.
23. Question: How often, if at all, do you or someone else in your household check the temperature of the fridge? Responses: At least daily, 2-3 times a week, Once a week, Less than once a week but more than once a month, Once a month, four times a year, 1-2 times a year, Never, Don't know, Base= 915, those in households where someone checks their fridge temperature.
24. Question: How do you, or someone else, normally check the temperature of the fridge at your term-time residence? Responses: I check the setting/gauge, I check the temperature display built into the fridge, I put a thermometer in the fridge and check, I check for ice or condensation, I feel food inside to see if it is cold, Don't know. Base = 915, those who ever check their fridge temperature.
25. Question: What do you think the temperature inside your fridge should be? Responses: Less than 0 degrees C (less than 32 degrees F), Between 0 and 5 degrees C (32 to 41 degrees F), More than 5 but less than 8 degrees C (42 to 46 degrees F), 8 to 10 degrees C (47 to 50 degrees F), More than 10 degrees C (over 50 degrees F), Other, Don't know. Base= 2921, all respondents.
26. Question: Which university do you study at...? Responses: [List all universities] Base = 2921, all respondents.
27. Question: In your kitchen area to what extent do you agree or disagree that there is enough space to store your food in the freezer. Responses: Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree. Base = 2530, those who have access to a freezer in the kitchen.
28. Question: What is your mode of study? Responses: full-time, part-time. Base = 2921, all respondents.
29. Question: In your kitchen area to what extent do you agree or disagree that there is enough space for ...A) Food preparation. B) Food storage. C) Eating food. D) Cooling or defrosting food. Responses: Agree, Neither agree nor disagree, Disagree, Strongly disagree. Base = 2921, all respondents.
30. Question: Which one of the following best describes your ethnic group or background? Responses: English/Welsh/Scottish/Northern Irish/British, Irish, Gypsy or Irish Traveller, any other white background, White and Black Caribbean, White and Black African, White and Asian, any other mixed/multiple ethnic background, Indian, Pakistani, Bangladeshi, Chinese, any other Asian/Asian British background, Caribbean, African, any other

Black/Black British group, Arab, any other ethnic group, prefer not to say. Base = 2921, all respondents. Please note: Percentages do not add up to 100 as not all ethnic groups or background are reported, see data tables for complete data.

31. Question: Typically, how do you defrost frozen meat or fish? Responses: Place the meat or fish in water, Leave the meat or fish at room temperature (e.g. on the worktop on a plate, in a container or in its packaging), Leave the meat or fish in the fridge, Defrost the meat or fish in the microwave oven, Some other way (please specify), I never defrost meat or fish, Don't know. Base = 2051, those who ever do any food preparation / cooking in their term-time kitchen and eat meat or fish.
32. Question: What is your mode of study? Responses: full-time, part-time. Base = 2921, all respondents.
33. Question: Which one of the following best describes your ethnic group or background? Responses: English/Welsh/Scottish/Northern Irish/British, Irish, Gypsy or Irish Traveller, any other white background, White and Black Caribbean, White and Black African, White and Asian, any other mixed/multiple ethnic background, Indian, Pakistani, Bangladeshi, Chinese, any other Asian/Asian British background, Caribbean, African, any other Black/Black British group, Arab, any other ethnic group, prefer not to say. Base = 2921, all respondents. Please note: Percentages do not add up to 100 as not all ethnic groups or background are reported, see data tables for complete data.
34. Question: How often, if at all, do you cook food until it is steaming hot and cooked all the way through? Responses: Always, Most of the time, About half the time, Occasionally, Never, Don't know. Base = 2668, those who ever do any food preparation / cooking in their term-time kitchen.
35. Question: How often, if at all, do you do the following eat ...A/B/C/D/E/F... when the meat is pink or has pink or red juices? A) chicken or turkey. B = red meat. C = duck. D = beef burgers. E = sausages. F = whole cuts of pork or pork chops. Responses: Always, Most of the time, About half the time, Occasionally, Never, I don't eat that type of meat. Base A= 2034, B = 1908, C = 1411, D = 1897, E = 1878, F = 1607, those who eat A/B/C/D/E/F.
36. Question: How often, if at all, do you do the following...wash raw chicken. Responses: Always, Most of the time, About half the time, Occasionally, Never, Don't know, I don't cook with this type of meat / fish. Base=2668, those who ever do any food preparation / cooking in their term-time kitchen.
37. Question: Where in the fridge do you store raw meat and poultry? Responses: Wherever there is space, At the top of the fridge, In the middle of the fridge, At the bottom of the fridge, Don't know. Base=1730, those who store raw meat in the fridge.
38. Question: How, if at all, do you store raw meat and poultry in the fridge? Responses: Away from cooked foods, Covered with film / foil, In a sealed container, In its original packaging, On a plate, I don't buy or store meat or poultry, I don't store raw meat/poultry in the fridge, I don't have a fridge, Don't know. Base=1962, those who ever do any food preparation / cooking in their term-time kitchen and eat meat.

39. Question: Which of these shows when food is no longer safe to eat? Responses: Use by date, Best before date, Sell by date, Display until date, It depends, None of these, Don't know. Base = 2921, all respondents.
40. Question: How often, if at all, do you check use by dates when you are about to cook or prepare food? Responses: Always, Most of the time, About half the time, Occasionally, Never, Don't know, It varies too much to say. Base=2668, those who ever do any food preparation / cooking in their term-time kitchen.
41. Question: In the last month have you eaten any of the following foods that has gone past its use by date? A) Cooked meat e.g. ham B) Smoked fish C) Bagged salad D) Cheese E) Milk F) Tofu or meat substitutes e.g. Quorn, Beyond Burger G) Plant-based milk alternative e.g. soy milk, oat milk, almond milk H) Raw meats e.g. chicken, mince. Responses: Yes, this happened every week; Yes, this happened some weeks but not every week; Yes, this happened in one week in the last month; No, never; Don't know/can't remember; I haven't eaten/drunk this in the last month; Prefer not to say. Base A= 1828, B = 1536, C= 2408, D= 2430, E= 2363, F = 2061, G= 2140, H= 1957, those who have eaten/drunk A/B/C/D/E/F/G/H in the last month.
42. Question: Some foods have an instruction to eat the food within a few days of opening on the label (e.g. "consume within 3 days of opening").How often, if at all, do you follow instructions on food packaging which tells you how long food should be stored once opened? A) Cooked meat e.g. ham B) Smoked fish C) Bagged salad D) Cheese E) Milk F) Tofu or meat substitutes e.g. Quorn, Beyond Burger G) Plant-based milk alternative e.g. soy milk, oat milk, almond milk H) Raw meats e.g. chicken, mince. Responses: Always, Most of the time, About half the time, Occasionally, Never, Don't know, I don't eat/cook with that food. Base A= 1858, B = 1580, C= 2142, D= 2529, E= 2417, F = 2013, G= 2116, H= 1983, those who eat /cook with A/B/C/D/E/F/G/H.
43. Question: Which one of the following best describes your ethnic group or background? Responses: English/Welsh/Scottish/Northern Irish/British, Irish, Gypsy or Irish Traveller, any other white background, White and Black Caribbean, White and Black African, White and Asian, any other mixed/multiple ethnic background, Indian, Pakistani, Bangladeshi, Chinese, any other Asian/Asian British background, Caribbean, African, any other Black/Black British group, Arab, any other ethnic group, prefer not to say. Base = 2921, all respondents. Please note: Percentages do not add up to 100 as not all ethnic groups or background are reported, see data tables for complete data.
44. Question: How often, if at all, do you...A) Shop for food in store at a supermarket (including mini supermarkets like Metro/ Local). B) Shop for food at independent greengrocers', butchers', bakers' or fishmongers'. C) Shop for food at local/corner shops, newsagents' or garage forecourts. D) Shop for food using an online marketplace e.g. Amazon, Etsy, Gumtree, Facebook Marketplace? E) Get food through a food sharing app e.g. Olio F) get a delivery to your term-residence from a supermarket? (This includes food ordered online that is delivered to you) G) ... shop at a local market, farmers market or farm shop (this includes farm deliveries e.g. vegetable boxes) H) ... get a recipe box delivered (e.g. Hello Fresh, Gousto)? (This includes recipe boxes ordered online that are delivered to you) I) ...get food from supermarket or shop waste area or bins i.e. freegan). Responses: Every day, Most days, 2-3 times a week, About once a week, 2-3 times a month, About once a month, Less than once a month, Never, Can't remember. Base= 2749, those who ever do

food shopping themselves at their term-time residence.

45. The Further and Higher Education Act 1992 was passed in [England, Wales and Scotland](#). The act enables former polytechnics, central institutions and similar organisations to be given university status.
46. The data for Northern Ireland is not reported as the base size is below 100 and therefore is not representative.
47. Question: Have you, or has anyone in your household, made any of these changes to your eating habits in the last 12 months? Responses: Eaten out less, Eaten at your term-time residence more, Cooked at your term-time residence more, Eaten fewer takeaways, Bought items that were on special offer more, Prepared food that could be kept as leftovers more, Changed where you buy food for cheaper alternatives, Changed the food you buy to cheaper alternatives, Made packed lunches more, Bought food close to its use-by date more, Eaten food past its use-by date more, Kept leftovers for longer before eating, Used a food bank/emergency food, Other, No, I/we haven't made any changes. Base= 2921, all respondents.
48. Question: Thinking about the changes to eating habits that you have made in the last 12 months, why did you make these changes? Responses: Financial reasons, Health reasons, Food safety reasons (i.e. to avoid food poisoning), Due to the bad or unpleasant physical reaction that certain foods cause, Because of lockdown/Covid-19, Going to/returning to university, Other, Prefer not to say. Base= 2560, all respondents who have made at least one change to their eating habits in the last 12 months.
49. A modified version of the [U.S. Adult Food Security Survey Module](#) was used to measure developed by the United States Department of Agriculture (USDA) to measure food security at the level of respondents.
50. Question/Responses: Derived variable, see [USDA Food Security guidance](#) and Technical Report. Base= 2921, all respondents. Please note: the data for Northern Ireland is not reported as the base size is below 100 and therefore is not representative.
51. "Post-1992 universities", also known as "new universities" or "modern universities", refer to the former polytechnics, central institutions or colleges of higher education that were given university status by the Further and Higher Education Act 1992 passed in [England, Wales and Scotland](#) (as well as colleges that have been granted university status since then). Founded in 1994, Russell Group universities tend to be long-established and rank high in university league tables, with a focus on research and often high entry requirements.
52. Question: In the last 12 months, have you, or anyone else in your household, received a free parcel of food from a food bank or other emergency food provider? Responses: Yes, No, Prefer not to say. Base= 2921, all respondents.

# Food behaviours in the UK student population: References

- Armstrong, B., Reynolds, C., Bridge, G., Oakden, L., Wang, C., Panzone, L., Schmidt Rivera, X., Kause, A., Ffoulkes, C., Krawczyk, C. and Miller, G., (2021). How does citizen science compare to online survey panels? A comparison of food knowledge and perceptions between the Zooniverse, Prolific and Qualtrics UK panels. *Frontiers in Sustainable Food Systems*, 4, p.575021. <https://doi.org/10.3389/fsufs.2020.575021>
- Defeyter, G., Stretesky, P., Long, M., Furey, S., Reynolds, C., Dodds, A., Porteous, D., Mann, E.J., Stretesky, C., Kemp, A., Fox, J. & McAnallen, A. (2020). [Food Insecurity and Lived Experience of Students \(FILES\)](#). London, UK: Parliament.
- Edwards, F., & Mercer, D. (2012). Food waste in Australia: the freegan response. *The Sociological Review*, 60, 174-191. <https://doi.org/10.1111/1467-954X.12044>
- Evans, E. W., & Redmond, E. C. (2013, July 28-31). [Food safety and self-reported practices of UK university students \[Poster presentation\]](#). International Association for Food Protection Annual Meeting, Charlotte Convention Center, Charlotte, North Carolina, USA.
- [HE student enrolments 2020/21, HESA](#)
- Osaili, T.M., Obaid, R.S., Alowais, K. et al. Microbiological quality of kitchens sponges used in university student dormitories. (2020). *BMC Public Health* 20, 1322. <https://doi.org/10.1186/s12889-020-09452-4>
- Pentina, I., & Amos, C. (2011). The Freegan phenomenon: anti?consumption or consumer resistance?. *European Journal of Marketing*. Vol. 45 No. 11/12, pp. 1768-1778. <https://doi.org/10.1108/03090561111167405>
- [Racette, S. B., Deusinger, S. S., Strube, M. J., Highstein, G. R. & Deusinger, R. H. \(2005\). Weight changes, exercise, and dietary patterns during freshman and sophomore years of college. \*Journal of American College Health\*, 53\(6\), 245-251, doi.org/10.3200/JACH.53.6.245-251](#)
- United States Department of Agriculture (USDA). [Food security](#).
- [University students facing food insecurity due to pandemic. \(2020, June 19th\). City, University of London newsletter, https://www.city.ac.uk/news-and-events/news/2020/06/university-students-facing-food-insecurity-due-to-pandemic](#)
- [World Food Summit 1996, Rome Declaration on World Food Security](#).



# Food behaviours in the UK student population: Appendix

## Co-creation session discussion guide summary

1. Welcome, team introductions and consent
2. Icebreaker
3. Introduction to 4C's
4. Activity1: mark food safety problem areas on kitchen image, group discussion and feedback

5. Activity 2: review draft questionnaire, develop new questions/adapt existing questions, group discussion and feedback
6. Wrap-up and final feedback

## Online survey

### [Introduction module]

[SHOW ALL]

The aim of the survey is to help the Food Standards Agency (FSA) and Food Standards Scotland (FSS) understand undergraduate student's attitudes and behaviour relating to food, including cooking, preparing, and storing food in shared kitchens. The findings will be used to inform policy decision-making and communication campaigns by identifying areas where action or further research is required.

We will ask you a series of questions about yourself, and your knowledge, attitudes, and behaviours about a range of food related topics. In addition, you have the option to send us a photo of your sink and the inside of your fridge.

**As we are interested in your experiences of shared kitchens, please consider your term-time residence when completing the survey.**

The survey should take less than 20 minutes to complete.

You can complete the survey on a desktop, laptop, smartphone or tablet.

You will receive XXX points for completing the survey, and an additional XXX points for providing a photo of the inside of your fridge and an additional XXX points for a photo of your sink.

[ASK ALL]

**AGECHECK** What is your age?

1. OPEN TEXT/DROP DOWN [under 17 years CLOSE]

IF CONSENT = 1 CONTINUE

[ASK ALL]

**STUDENTCHECK** Are an undergraduate student at a university in England, Scotland, Wales or Northern Ireland?

1. Yes, England
2. Yes, Scotland
3. Yes, Northern Ireland
4. No CLOSE

IF STUDENTCHECK = 1,2,3 CONTINUE

[ASK ALL]

**KITCHEN** Do you have access to a kitchen or food preparation area in your term-time accommodation?

1. Yes CONTINUE
2. No CLOSE

IF KITCHEN = 1 CONTINUE

## **[PHOTOS MODULE]**

[ASK ALL]

### **PHOTOINTRO**

Please take a photo of your sink area and the inside of your fridge.

**There is no need to do a quick wipe down, tidy up or move anything around, we want to see your sink and fridge as they are right now!**

You will receive XXX points for a photo of the inside of your fridge and XXX points for a photo of your sink.

[ASK ALL]

### **PHOTOFRIDGE**

Please take a photo of the inside of the fridge in your kitchen. Aim to capture all the shelves and inside of the fridge door.

**Remember - There is no need to do a quick wipe down, tidy up or move anything around, we want to see your fridge as it is right now!**

If you have more than one fridge in your kitchen, please take a photo of the one which you typically use.

How to take a good photo of your fridge:

A good photo...

- Inside of whole fridge and door shown
- Good lighting
- In focus

Not so good...

- Only shows the fridge door
- Too dark
- Blurred image

[ASK ALL]

### **PHOTOSINK**

Please take a photo of your sink area from above. Aim to capture the whole sink bowl, tap and draining board.

**Remember - There is no need to do a quick wipe down, tidy up or move anything around, we want to see your sink as it is right now!**

If you have more than one sink in your kitchen, please take a photo of the one which you typically use.

How to take a good photo of your sink:

A good photo...

- Shows whole sink area from above (include the draining board if you have one!)
- Good lighting
- In focus

Not so good...

- Only shows part of the sink area or taken from an angle
- Too dark
- Blurred image

## **[Demographics module]**

We would like to start by asking a few questions about you.

[ASK ALL]

**GENDER** Which of the following describes how you think of yourself?

Please select one answer only

SINGLE-CODE

1. Male
2. Female
3. In another way
4. Prefer not to say

[ASK ALL]

**ETHGRP** Which one of the following best describes your ethnic group or background?

Please select one answer only

WHITE [drop down options below]

1. English/Welsh/Scottish/Northern Irish/British
2. Irish
3. Gypsy or Irish Traveller
4. Any other White background (please specify)

MIXED [drop down options below]

5. White and Black Caribbean
6. White and Black African
7. White and Asian
8. Any other mixed/multiple ethnic background (please specify)

ASIAN OR ASIAN BRITISH [drop down options below]

9. Indian
10. Pakistani
11. Bangladeshi
12. Chinese
13. Any other Asian/Asian British background (please specify)

BLACK OR BLACK BRITISH [drop down options below]

14. Caribbean

15. African

16. Any other Black/Black British background (please specify)

OTHER ETHNIC GROUP [drop down options below]

17. Arab

18. Any other ethnic group (please specify) [offer open text box for this]

19. PREFER NOT TO SAY

**ANNUAL INCOME** Thinking about your annual income, which of the following groups represents your total income before deductions for income tax, National Insurance etc? This includes your student loan, income from working, grants, and any money from your parents, relatives, or guardians.

Please select one answer only

Annual Income

1. Less than £13,000
2. £13,000-£18,999
3. £19,000-£25,999
4. £26,000-£31,999
5. £32,000-£47,999
6. £48,000-£63,999
7. £64,000-£95,999
8. More than £96,000
9. Prefer not to say
10. I don't know

[ASK ALL]

WHICHUNI Which university do you study at ..... [list all universities]

[ASK ALL]

**UNIYEAR** Which year of undergraduate study are you currently in?

1. 1st Year
2. 2nd Year
3. 3rd Year
4. 4th Year
5. 5th Year
6. Placement or industry year
7. Other, please specify [OPEN TEXT]

[ASK ALL]

**WHICHSUBJECT** Which subject area do you study?

Please choose the subject area that is closest to your degree course. If you study more than one area please choose 'combined' at the end of this list.

Please select one answer

1. Architecture, building & planning
2. Biological sciences
3. Business & administrative studies
4. Creative arts & design
5. Eastern, Asiatic, African, American & Australasian languages, literature & related subjects
6. Education
7. Engineering
8. European languages, literature & related subjects
9. Historical & philosophical studies
10. Law
11. Linguistics, classics & related subjects
12. Mass communications & documentation
13. Mathematics
14. Medicine & dentistry
15. Physical sciences
16. Social studies
17. Subjects allied to medicine
18. Technologies
19. Veterinary sciences, agriculture & related subjects
20. Combined/general subject unspecified
21. Other

[ASK ALL]

**MODE** What is your mode of study?

1. Full-time
2. Part-time

[ASK ALL]

**UKSTUDENT** Are you a national or international student?

1. UK national student
2. International student

[ASK ALL]

**HOUSING** What type of housing do you usually live in during term-time?

1. Halls of residence without catering
2. Halls of residence with catering provided
3. Private rental (landlord/agency) e.g. house, flat or lodger
4. Own property
5. At parental/guardian home
6. Other [open text box]

[ASK ALL]

**PARENTAL SEG** Which of the following best describes the occupation of the chief income earner in your parental/guardian household?

1. A - Professional / higher managerial (e.g. doctor, lawyer, chairman or managing director of medium or large firm)
2. B - Manager / senior administrator (e.g. senior manager, owner of small business, head teacher)
3. C1 - Supervisor / clerical / skilled non-manual (e.g. teacher, secretary, junior manager, police constable)
4. C2 - Skilled manual worker (e.g. fireman, plumber, electrician, hairdresser)
5. D - Semi-skilled / unskilled manual worker (e.g. assembler, postman, shop assistant)

6. E - Receiving state benefits for sickness, unemployment, old age or any other reason
7. Other
8. Prefer not to say

[ASK ALL]

**VEG** Do you consider yourself to be any of the following?

Please select one answer only

1. Vegetarian [INFO BUTTON: a person who does not eat meat or fish]
2. Pescatarian [INFO BUTTON: a person who does not eat meat but does eat fish.]
3. Vegan [INFO BUTTON: a person who does not eat or use animal products.]
4. Mainly vegetarian but occasionally eat meat e.g. flexitarian
5. Omnivore [INFO BUTTON: a person who eats meat and/or fish]
6. Other [OPEN TEXT]
7. Prefer not to say

[ASK ALL]

**FOODREAC** Do you suffer from a bad or unpleasant physical reaction after consuming certain foods, or avoid certain foods because of the bad or unpleasant physical reaction they might cause?

[INFO BUTTON: This may include symptoms associated with food allergies and food intolerances, such as difficulties breathing and swallowing, skin rash, itching and swelling on the face or in the mouth, nausea, vomiting, abdominal pain, bloating or diarrhoea.]

Please select one answer only

1. Yes
2. No
3. Don't know
4. Prefer not to say

[ASK IF HAS NEGATIVE REACTION - FOODREAC = 1]

**REACsourc** Do you experience a bad or unpleasant physical reaction to any of the following foods?

Please select all answers that apply

1. Peanuts
2. Other nuts for example, almonds, hazelnuts, walnuts, cashew nuts, pecans
3. Cow's milk and products made with cow's milk for example, butter, cheese, cream, yoghurt
4. Cereals containing gluten for example, wheat, rye, barley, oats
5. Eggs
6. Fish
7. Crustaceans for example, crabs, lobster, prawns, scampi
8. Molluscs for example, mussels, snails, squid, whelks, clams, oysters
9. Soya
10. Celery/celeriac
11. Mustard
12. Lupin
13. Sesame
14. Sulphur dioxide/sulphites
15. Other cereals for example, buckwheat, rice, corn (please specify)
16. Fruit (please specify)
17. Vegetables (please specify)
18. Other (please specify)

19. Prefer not to say [EXCLUSIVE]

[ASK FOR EACH FOOD TO WHICH PARTICIPANT HAS A NEGATIVE REACTION AT

REACSOUCR – REACSOUCR <> 19]

REACTYP How would you best describe your problem with {TEXT FILL WITH FOOD TYPE}?

REACSOUCR\_1 Peanuts

REACSOUCR\_2 Other nuts for example, almonds, hazelnuts, walnuts, cashew nuts, pecans

REACSOUCR\_3 Cow's milk and products made with cow's milk for example, butter, cheese, cream, yoghurt

REACSOUCR\_4 Cereals containing gluten for example, wheat, rye, barley, oats

REACSOUCR\_5 Eggs

REACSOUCR\_6 Fish

REACSOUCR\_7 Crustaceans for example, crabs, lobster, prawns, scampi

REACSOUCR\_8 Molluscs for example, mussels, snails, squid, whelks, clams, oysters

REACSOUCR\_9 Soya

REACSOUCR\_10 Celery/celeriac

REACSOUCR\_11 Mustard

REACSOUCR\_12 Lupin

REACSOUCR\_13 Sesame

REACSOUCR\_14 Sulphur dioxide/sulphites

REACSOUCR\_15 Other cereals for example, buckwheat, rice, corn

REACSOUCR\_16 Fruit

REACSOUCR\_17 Vegetables

REACSOUCR\_18 Other

Please select one answer only

1. Food allergy
2. Food intolerance
3. Coeliac disease
4. Other
5. Don't know
6. Prefer not to say

[ASK FOR EACH FOOD TO WHICH PARTICIPANT HAS A NEGATIVE REACTION AT

REACSOUCR – REACSOUCR <> 19]

REACCOND How did you find out about your problem with {INSERT ITEM FROM REACSOUCR}?

REACCOND\_1 Peanuts

REACCOND\_2 Other nuts for example, almonds, hazelnuts, walnuts, cashew nuts, pecans

REACCOND\_3 Cow's milk and products made with cow's milk for example, butter, cheese, cream, yoghurt

REACCOND\_4 Cereals containing gluten for example, wheat, rye, barley, oats

REACCOND\_5 Eggs

REACCOND\_6 Fish

REACCOND\_7 Crustaceans for example, crabs, lobster, prawns, scampi

REACCOND\_8 Molluscs for example, mussels, snails, squid, whelks, clams, oysters

REACCOND\_9 Soya

REACCOND\_10 Celery/celeriac

REACCOND\_11 Mustard

REACCOND\_12 Lupin

REACCOND\_13 Sesame

REACCOND\_14 Sulphur dioxide/sulphites

REACCOND\_15 Other cereals for example, buckwheat, rice, corn

REACCOND\_16 Fruit

REACCOND\_17 Vegetables

REACCOND\_18 Other

Please select all answers that apply

1. I have been diagnosed by an NHS or private medical practitioner (for example, GP, dietician, allergy specialist in a hospital or clinic) [INFO BUTTON: Common diagnosis methods include patient history assessments, skin prick test, blood test, food challenge, patch tests and elimination tests]
2. I have been diagnosed by an alternative or complementary therapist (for example, homeopath, reflexologist, online or walk-in allergy testing service)
3. I have noticed that this food causes me problems, but I have not been formally diagnosed with a specific condition.
4. Other (please specify)

[SHARED KITCHEN MODULE]

Next, we are going to ask you some questions about your term-time kitchen.

[ASK ALL]

TOTALPEPS How many people in total (including yourself) use your kitchen area?

1. Only me
2. 2 people
3. 3-4 people
4. 5-6 people
5. 7-8 people
6. 9 or more people

[ASK ALL]

KITCHEQUP Which of the following items, if any, do you have access to in the kitchen .....

Please select all that apply

MULTICODE. RANDOMISE OPTIONS

KITCHEQUP\_a Fridge

KITCHEQUP\_b Freezer

KITCHEQUP\_c Oven

KITCHEQUP\_d Microwave

KITCHEQUP\_e Kettle

KITCHEQUP\_f Toaster

KITCHEQUP\_g Hobs

KITCHEQUP\_h Dishwasher

KITCHEQUP\_i None of the above [exclusive]

**FRIDGEAREA** [ASK KITCHEQUP\_a =1]

Do you have an allocated area in the fridge?

1. Yes
2. No

**FRIDGEALLOCATED** [ASK KITCHEQUP\_a =1]

Typically, where in the fridge do you store your food?

1. On an allocated shelf
2. In an allocated drawer
3. In the door of the fridge

4. Wherever there is space (exclusive)
5. I store different types of food in specific areas of the fridge i.e. ready-to-eat foods on the top shelf, raw meat and fish on the bottom shelf, fruit and vegetables stored in the bottom drawer. (exclusive)
6. Other, please specify (open text)

### **KITSPACECHILL**

In your kitchen area to what extent do you agree or disagree that there is enough space to store your food in the ....

KITSPACECHILL \_a fridge [ASK KITCHEQUP\_a =1]

KITSPACECHILL \_b freezer[ASK KITCHEQUP\_b =1]

KITSPACECHILL\_c cupboards [ASK ALL]

1. Strongly agree
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly disagree

[ASK ALL]

**KITSPACECOOK** In your kitchen area to what extent do you agree or disagree that there is enough space for ....

KITSPACECOOK \_a Food preparation

KITSPACECOOK \_b Food storage

KITSPACECOOK \_c Eating food

KITSPACECOOK\_d cooling or defrosting food

1. Strongly agree
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly disagree

### **KITLIMITCOOK** [ASK ALL]

Is the type or quantity of food you purchase, prepare or cook ever limited by the availability of the following facilities?

Please select all that apply

KITLIMITCOOK \_a food preparation area

KITLIMITCOOK \_b fridge space

KITLIMITCOOK \_c freezer space

KITLIMITCOOK \_d cupboard space

KITLIMITCOOK \_d eating area

KITLIMITCOOK \_e cooking area

KITLIMITCOOK\_f equipment such as pans and sharp knives

KITLIMITCOOK\_g None of the above [exclusive]

[ASK if KITLIMITCOOK\_a/b/c/d/e/f =1]

Please explain how the availability of ...[insert KITLIMITCOOK\_a/b/c/d/e/f] limits the type or quantity of food you purchase, prepare or cook [Open text]

### **EQUIPLOCATIONS** [ASK ALL]

[randomise order except EQUIPLOCATIONS \_m]

Do you ever do any of the following activities in your bedroom or a non-kitchen area in your accommodation? Select all that apply.

EQUIPLOCATIONS \_a Store non-perishable food for example, canned foods, pasta, rice

EQUIPLOCATIONS \_b Store food at room temperature which should be kept in a fridge for example, milk, yogurt

EQUIPLOCATIONS \_c Store food at room temperature which should be frozen e.g. frozen chicken nuggets, frozen peas

EQUIPLOCATIONS \_d Store food in a fridge for example, mini-fridge in bedroom

EQUIPLOCATIONS \_e Store food in a freezer for example, mini-freezer in bedroom

EQUIPLOCATIONS \_f Store clean cutlery, crockery, pots or pans

EQUIPLOCATIONS \_g Store dirty cutlery, crockery or pans

EQUIPLOCATIONS \_h Cook food

EQUIPLOCATIONS \_i Eat food

EQUIPLOCATIONS \_j Prepare food

EQUIPLOCATIONS \_k Defrost or cool food

EQUIPLOCATIONS \_l Wash dirty cutlery, crockery or pans

EQUIPLOCATIONS \_m None of the above (exclusive)

[ASK KITCHEQUP\_a =1]

FRIDGECONTENT Does your fridge ever contain the following items, this can include food which belongs to other people:

FRIDGECONTENT \_a Food past the use-by date

FRIDGECONTENT \_b Uncovered raw or cooked meat

FRIDGECONTENT \_c Leftovers that have been left for longer than 2 days

1. Yes
2. No
3. Don't know

[ASK ALL]

**WHOCLEAN** Who is responsible for cleaning the kitchen area?

(Please select all that apply)

WHOCLEAN\_a Cleaner

WHOCLEAN\_b Residents

WHOCLEAN\_c Both cleaner and residents

WHOCLEAN\_d Other, please specify (OPEN TEXT)

**GRID (RANDOMISE)**

Who is usually responsible for cleaning each of the following in the kitchen:

1. Sink
2. Hob/cooker top
3. Oven
4. Microwave
5. Fridge
6. Floors
7. Table and chairs
8. Worktop/kitchen surfaces

WHOCLEAN\_a Cleaner

WHOCLEAN\_b Residents

WHOCLEAN\_c Both cleaner and residents

WHOCLEAN\_d Other

[ASK ALL]

**LIGHTCLEAN** How often does the kitchen get a light clean? For example, surfaces wiped down

1. Every day
2. Most days
3. 2-3 times a week
4. About once a week
5. 2-3 times a month
6. About once a month
7. Less than once a month
8. Never
9. Don't know

[ASK ALL]

**DEEPCLEAN** How often does the kitchen get a deep clean? For example, floors cleaned, oven cleaned, microwave cleaned, fridge cleaned.

1. Every day
2. Most days
3. 2-3 times a week
4. About once a week
5. 2-3 times a month
6. About once a month
7. Less than once a month
8. Never
9. Don't know

[ASK ALL] **WHATWASH** (randomise apart from exclusive codes)

What do you usually use to wash dishes?

Please select all that apply

WHATWASH\_a Dish sponge or cloth

WHATWASH\_b Dish brush

WHATWASH\_c Stainless steel scourer

WHATWASH\_d Washing-up liquid

WHATWASH\_e Hot water

WHATWASH\_f Handwash or hand soap

WHATWASH\_g Hands only (no sponge or cloth)

WHATWASH\_h Dishwasher

WHATWASH\_i Other, please specify [OPEN TEXT] (exclusive)

WHATWASH\_j I do not wash dishes (exclusive)

[If WHATWASH\_a = 1 ]

**SPONGEREP** How often do you usually replace the dish sponge or cloth?

1. Every day
2. Most days
3. 2-3 times a week
4. About once a week
5. 2-3 times a month
6. About once a month
7. Less than once a month
8. Never
9. Don't know

[ASK ALL]

**TOWELREP** If you use a tea towel, how often is the tea towel usually replaced with a clean one?

1. Every day
2. Most days
3. 2-3 times a week
4. About once a week
5. 2-3 times a month
6. About once a month
7. Less than once a month
8. Never
9. I do not use a tea towel
10. Don't know

[ASK ALL]

**BINSEMPY** How often does the main bin in your kitchen usually get emptied?

1. Every day
2. Most days
3. 2-3 times a week
4. About once a week
5. 2-3 times a month
6. About once a month
7. Less than once a month
8. Never
9. Can't remember
10. Other, please specify (OPEN TEXT)

[ASK ALL]

**SINK** How often, if at all, do you experience the following issues with your kitchen sink?

SINK\_a Sink filled with dirty dishes, pots or pans

SINK\_b Old food left in sink or sink trap

SINK\_c Sink is dirty, grimy, or greasy

1. Every day
2. Most days
3. 2-3 times a week
4. About once a week
5. 2-3 times a month
6. About once a month
7. Less than once a month
8. Never
9. Can't remember

## [Food Safety Module]

Now we would like to ask you some questions about cooking and eating at your term-time residence.

[ASK ALL]

**EVCOOK** Do you ever do any food preparation or cooking in your term-time kitchen?

Please select one answer only

1. Yes
2. No

[ASK ALL]

**COOKSCRATCH** Can you cook a meal from scratch/basic ingredients? For example, using unprocessed fruit, vegetables, eggs, meat or rice without the use of readymade sauces, spice mixes, or processed meat such as chicken nuggets or burgers.

1. Yes
2. No

[IF COOKSCRATCH=1]

**COOKSCRATCHOFTEN** How often do you cook a meal from scratch/from basic ingredients at your term-time residence? For example, using unprocessed fruit, vegetables, eggs, meat or rice without the use of readymade sauces, spice mixes, or processed meat such as chicken nuggets or burgers.

Please select one answer only

1. At least daily
2. 2-3 times a week
3. Once a week
4. Less than once a week but more than once a month
5. Once a month
6. Less often than once a month, but more than four times a year
7. Less than 4 times a year
8. Never
9. Don't know

[IF DOES ANY COOKING – EVCOOK = 1]

**STEAMHOT** How often, if at all, do you cook food until it is steaming hot and cooked all the way through?

Please select one answer only

1. Always
2. Most of the time
3. About half the time
4. Occasionally
5. Never
6. Don't know

[IF DOES ANY COOKING – EVCOOK = 1]

**FOODREH** When reheating food, how do you know when it is ready to eat?

**RANDOMISE ANSWER OPTIONS.** 11, 12 and 13 in same place

Please select all that apply.

1. I can see steam coming from it
2. I taste it
3. I stir it
4. I check the middle is hot
5. I check it's an even temperature throughout
6. I put my hand over it/touch it
7. I use a thermometer/probe
8. I use a timer to ensure it has been cooked for a certain amount of time
9. I can see it's bubbling
10. I follow the instructions on the label
11. Other, please specify [OPEN TEXT] [EXCLUSIVE]
12. I don't check [EXCLUSIVE]
13. I don't reheat food [EXCLUSIVE]

[ASK IF FOODREH 1-10]

FOODREH2 How many times would you consider reheating food after it was cooked for the first time?

SINGLE CODE

1. Not at all
2. Once
3. Twice
4. More than twice
5. Don't know

[ASK IF NOT VEGAN, VEGETARIAN OR PESCITARIAN. VEG=4,5 or 6,]

EATPINK1 How often, if at all, do you do the following...

EATPINK1\_a Eat chicken or turkey when the meat is pink or has pink or red juices

EATPINK1\_b Eat red meat when it is pink or has pink or red juices

EATPINK1\_c Eat duck when it is pink or has pink or red juices

Please select one answer only for each statement

1. Always
2. Most of the time
3. About half the time
4. Occasionally
5. Never
6. I don't eat that type of meat
7. Don't know

[ASK IF NOT VEGAN, VEGETARIAN OR PESCITARIAN. VEG=4,5 or 6,]

EATPINK2 How often, if at all, do you do the following...

EATPINK2\_a Eat beef burgers when the meat is pink or has pink or red juices

EATPINK2\_b Eat sausages when the meat is pink or has pink or red juices

EATPINK2\_c Eat whole cuts of pork or pork chops when the meat is pink or has pink or red juices

Please select one answer only for each statement

1. Always
2. Most of the time
3. About half the time
4. Occasionally
5. Never
6. I don't eat that type of meat
7. Don't know

[ASK IF PREPARES / COOKS – EVCOOK=1] [ASK IF NOT VEGAN OR VEGETARIAN. VEG=2,4,5 or 6,]

HOWDEF Typically, how do you defrost frozen meat or fish?

SINGLE CODE. RANDOMISE ANSWER. EXCLUDE 5, 6 and 7 from RANDOMISATION

Please choose the method you use most often.

1. Place the meat or fish in water
2. Leave the meat or fish at room temperature (e.g. on the worktop on a plate, in a container or in its packaging)
3. Leave the meat or fish in the fridge
4. Defrost the meat or fish in the microwave oven

5. Some other way, please specify [OPEN TEXT]
6. I never defrost meat or fish
7. Don't know

[ASK ALL]

**LEFTOVER1** Generally, what do you do with any leftovers following a meal?

SINGLE CODE. RANDOMISE ANSWER

Please select one answer only

1. I throw them away in the regular bin
2. I put them in a dedicated food waste bin
3. I leave them at room temperature and eat them later the same day
4. I leave them at room temperature and eat them the next day
5. I put them in the fridge
6. I put them in the freezer
7. I don't have leftovers [EXCLUDE FROM RANDOMISATION]

[ASK IF PUT LEFTOVERS IN THE FRIDGE OR FREEZER. LEFTOVER1= 5 or 6]

**LEFTOVER2** Typically, how soon after cooking do you put any leftovers in the fridge or freezer?

Please select one answer only

1. Straight away
2. Within 1 hour of cooking
3. 1-2 hours after cooking
4. More than 2 hours after cooking
5. Don't know

[ASK ALL]

**LEFTOVER3** When is the latest you would consume any leftovers stored in the fridge?

Please select one answer only

1. The same day
2. Within 1-2 days
3. Within 3-5 days
4. More than 5 days later
5. It varies too much
6. Don't know

[ASK IF PREPARES / COOKS –EVCOOK=1] [RANDOMISE EXCEPT CODE 6,7&8]

**HOWCHOP** Typically, how do you use chopping boards when preparing a meal with raw meat?

Please select one answer only

1. I use a different chopping board for raw meat and other foods
2. I wash the chopping board with soap and hot water between preparing raw meat and other foods
3. I turn the chopping board over between preparing raw meat and other foods
4. I use the same chopping board for preparing raw meat and other foods (without washing the board)
5. I rinse the chopping board with water (not soap) between preparing raw meat and other foods
6. I don't use chopping boards
7. I don't cook with raw meat [EXCLUSIVE]
8. Other, please specify [OPEN TEXT]

[ASK IF USES SAME CHOPPING BOARD – HOWCHOP = 4]

**WHENCHOP** When you use the same chopping board to prepare raw meat and other foods, in

which order do you prepare food?

Please select one answer only

1. I prepare raw meat before other foods
2. I prepare other foods before raw meat
3. I don't think about the order I prepare foods
4. Don't know

[ASK IF PREPARES / COOKS –EVCOOK=1,]

[FOLLOWING COMPRISES 2 QUESTIONS WITH COMMON STEM AND FREQUENCY SCALE]

How often, if at all, do you do the following... WASHCHIC

...wash raw chicken?

WASHTUR ...wash raw turkey?

WASHDUC ...wash raw duck or goose?

WASHRAW ... wash raw lamb, beef or pork?

WASHFISH ...wash raw fish and seafood?

Please select one answer only

1. Always
2. Most of the time
3. About half the time
4. Occasionally
5. Never
6. Don't know
7. I don't cook with this type of meat / fish

[ASK ALL]

**FOODUSE** Which of these shows when food is no longer safe to eat?

Please select all that apply

MULTICODE

1. Use by date
2. Best before date
3. Sell by date
4. Display until date
5. It depends [EXCLUSIVE]
6. None of these [EXCLUSIVE]
7. Don't know [EXCLUSIVE]

[ASK IF PREPARES / COOKS –EVCOOK=1]

**COOKDATES** How often, if at all, do you check use by dates when you are about to cook or prepare food?

Please select one answer only

1. Always
2. Most of the time
3. About half the time
4. Occasionally
5. Never
6. It varies too much to say
7. Don't know

[ASK ALL]

**FREQUSE** In the last month have you eaten any of the following foods that has gone past its use by date?

RANDOMISE ROWS.

Please select one answer for each food.

FREQUSE\_a

Cooked meats for example, ham [ASK IF VEG=4,5 or 6]

FREQUSE\_b Smoked fish [ASK IF VEG=2,4,5 or 6]

FREQUSE\_c Bagged salads [ASK ALL]

FREQUSE\_d Cheese [ASK IF VEG=1,2,4,5 or 6]

FREQUSE\_e Milk [ASK IF VEG=1,2,4,5 or 6]

FREQUSE\_f Tofu or meat substitutes for example, Quorn, Beyond Burger [ASK ALL]

FREQUSE\_g Plant-based milk alternative for example, soy milk, oat milk, almond milk [ASK ALL]

FREQUSE\_h Raw meats for example, chicken, mince [ASK IF VEG=4,5 or 6]

1. Yes, this happened every week
2. Yes, this happened some weeks but not every week
3. Yes, this happened in one week in the last month
4. No, never
5. Don't know/can't remember
6. I haven't {IF a-d, f: eaten; IF e, g: drunk} this in the last month
7. Prefer not to say

[ASK ALL]

FOODUSEBY When food you have bought is about to go past its use by date, which of the following do you usually do?

RANSOMISE CODES 1-4.

Please select one answer only

1. I eat it by the use by date
2. I freeze it by the use by date
3. I throw it away (after the use by date)
4. I keep it and eat it after the use by date
5. It varies too much to say
6. I don't check use by dates

[ASK ALL]

**STOROPEN**

Some foods have an instruction to eat the food within a few days of opening on the label (e.g., "consume within 3 days of opening").

How often, if at all, do you follow instructions on food packaging which tells you how long food should be stored once opened?

Please select one answer for each food

1. Always
2. Most of the time
3. About half the time
4. Occasionally
5. Never
6. Don't know

RANDOMISE ROWS

STOROPEN\_a Cooked meats [ASK IF VEG=4,5 or 6]

STOROPEN\_b Smoked fish [ASK IF VEG=2,4,5 or 6]

STOROPEN\_c Bagged salads [ASK ALL]

STOROPEN\_d Cheese [ASK IF VEG=1,2,4,5 or 6]

STOROPEN\_e Milk [ASK IF VEG=1,2,4,5 or 6]

STOROPEN\_f Tofu or meat substitutes for example, Quorn, Beyond Burger [ASK ALL]

STOROPEN\_g Plant-based milk alternative for example, soy milk, oat milk, almond milk [ASK ALL]

STOROPEN\_h Raw meats for example, chicken, mince [ASK IF VEG=4,5 or 6]

[ASK IF VEG=4,5 or 6 & EVCOOK=1]

**FRIDGERAW1** How, if at all, do you store raw meat and poultry in the fridge?

RANDOMISE CODES 1-5

Please select all that apply

1. Away from cooked foods
2. Covered with film / foil
3. In a sealed container
4. In its original packaging
5. On a plate
6. I don't buy or store meat or poultry [EXCLUSIVE]
7. I don't store raw meat/poultry in the fridge [EXCLUSIVE]
8. I don't have a fridge [EXCLUSIVE]
9. Don't know

[ASK IF STORE RAW MEAT IN THE FRIDGE. FRIDGERAW=1-5]

**FRIDGERAW2** Where in the fridge do you store raw meat and poultry?

Please select all that apply

1. Wherever there is space [EXCLUSIVE]
2. At the top of the fridge
3. In the middle of the fridge
4. At the bottom of the fridge
5. Don't know [EXCLUSIVE]

[ASK IF VEG=4,5 or 6 & EVCOOK=1]

**FROCHICEAT**

Have you cooked and eaten any coated frozen chicken products in the last 12 months at your term time residence?

[INFO BUTTON]By 'coated frozen chicken products' we mean any cook-from-frozen chicken products that are usually breaded or battered. You would find these products in the freezer aisle. This might include for example:

- frozen chicken nuggets
- frozen chicken goujons
- frozen chicken dippers
- frozen chicken popsters
- frozen breaded or battered chicken fillets
- frozen chicken poppers
- frozen popcorn chicken
- frozen chicken kiev
- frozen chicken-burgers

1. Yes, I have cooked and eaten these products at my term time residence in the last 12 months
2. No, I have not cooked and eaten these products at my term time residence in the last 12 months
3. Don't know

[ASK IF VEG=4,5 or 6] [ASK if FROCHICEAT=1]

### **FROCHICSTORE**

How do you typically store uncooked coated frozen chicken products at your term-time residence? [INFORMATION BUTTON]

1. In a freezer
2. In a fridge
3. At room temperature (such as a cupboard)
4. Other, please specify [OPEN TEXT]

[ASK IF VEG=4,5 or 6] [ASK if FROCHICEAT=1]

### **FROCHICDEFROST**

We'd like you to think about when you cook coated frozen chicken products. Do you usually defrost the product before cooking? [INFORMATION BUTTON]

1. Yes, I usually defrost the products before cooking
2. No, I usually cook the products from frozen
3. It depends
4. Don't know/Can't remember

[ASK IF VEG=4,5 or 6] [ASK if FROCHICEAT=1]

### **FROCHICCOOK**

How often, if at all, do you pre-heat the oven, to the instructed temperature, before placing coated frozen chicken products in the oven? [INFORMATION BUTTON]

1. Always
2. Often
3. Sometimes
4. Never
5. Don't know
6. Use other method to cook products

[SEE ROUTING INSTRUCTIONS BELOW]

**COOKSAFE1** How do you tell whether it is safe to eat or cook with...

RANDOMISE ANSWERS APART FROM EXCLUSIVE CODES

COOKSAFE1\_a) ...Raw meat like beef, lamb, pork or poultry [ASK IF VEG=4,5 or 6]

Please select all that apply.

1. How it looks
2. How it smells
3. How it tastes
4. Use by date
5. Other, please specify [OPEN TEXT]
6. I don't eat / cook that food [EXCLUSIVE]

**COOKSAFE1\_b)** ... Milk and yoghurt [ASK IF VEG=1,2,4,5 or 6]

Please select all that apply.

1. How it looks
2. How it smells
3. How it tastes
4. Use by date
5. Best before date
6. Following the instructions on the packaging (e.g. eat within 3 days of opening)
7. I don't eat / cook that food [EXCLUSIVE]

**COOKSAFE1\_c) ...Cheese [ASK IF VEG=1,2,4,5 or 6]**

Please select all that apply.

1. How it looks
2. How it smells
3. How it tastes
4. Use by date
5. Best before date
6. Following the instructions on the packaging (e.g. eat within 3 days of opening)
7. Other, please specify [OPEN TEXT]
8. I don't eat / cook that food [EXCLUSIVE]

**COOKSAFE2\_a) ...Eggs [ASK IF VEG=1,2,4,5 or 6]**

Please select all that apply.

1. How it looks
2. How it smells
3. How it tastes
4. Best before date
5. If it doesn't float in water
6. Other, please specify [OPEN TEXT]
7. I don't eat / cook that food [EXCLUSIVE]

**COOKSAFE2\_b) ...Fish, excluding shellfish [ASK IF VEG=2, 4,5 or 6]**

Please select all that apply.

1. How it looks
2. How it smells
3. How it tastes
4. Use by date
5. Other, please specify [OPEN TEXT]
6. I don't eat or cook that food [EXCLUSIVE]

**COOKSAFE2\_c) .....Dried or cured meats (for example, chorizo) [ASK IF VEG=4,5 or 6]**

Please select all that apply.

1. How it looks
2. How it smells
3. How it tastes
4. Use by date
5. Following the instructions on the packaging (for example, eat within 3 days of opening)
6. Other, please specify [OPEN TEXT]
7. I don't eat / cook that food [EXCLUSIVE]

[ASK ALL]

**FRIDGECH1** Do you, or anyone else, ever check your fridge temperature at your term-time residence?

Please select one answer only

1. Yes
2. No
3. Don't know
4. I don't need to – it has an alarm if it is too hot or cold
5. I don't have a fridge

[ASK HH CHECKS FRIDGE. FRIDGECH1=1]

**FRIDGECH2** How often, if at all, do you or someone else check the temperature of the fridge at your term-time residence?

Please select one answer only

1. At least daily
2. 2-3 times a week
3. Once a week
4. Less than once a week but more than once a month
5. Once a month
6. Less often than once a month but more often than four times a year
7. Less often than four times a year
8. Never
9. Don't know

[ASK HH CHECKS FRIDGE. FRIDGECH1=1]

**FRIDGECH3** How do you, or someone else, normally check the temperature of the fridge at your term-time residence?

RANDOMISE APART FROM EXCLUSIVE CODES

Please select one answer only

1. I check the setting/gauge
2. I check the temperature display built into the fridge
3. I put a thermometer in the fridge and check
4. I check for ice or condensation
5. I feel food inside to see if it is cold
6. Don't know [EXCLUSIVE]
7. Other, please specify [OPEN TEXT] [EXCLUSIVE]

[ASK ALL]

**FRIDGECH4** What do you think the temperature inside of a fridge should be?

Please select one answer only

1. Less than 0 degrees C (less than 32 degrees F)
2. Between 0 and 5 degrees C (32 to 41 degrees F)
3. More than 5 but less than 8 degrees C (42 to 46 degrees F)
4. 8 to 10 degrees C (47 to 50 degrees F)
5. More than 10 degrees C (over 50 degrees F)
6. Other, please specify [OPEN TEXT]
7. Don't know

[FOR STATEMENT C ASK ALL. / FOR STATEMENTS A AND B ASK IF DOES ANY COOKING – EVCOOK = 1, FOR STATEMENT D ASK IF FROCHICEAT=1]

**HANDWASH** When you are at your term-time residence how often, if at all, do you...

**HANDWASH\_a** ...Wash your hands before starting to prepare or cook food

**HANDWASH\_b** ...Wash your hands immediately after handling raw meat, poultry or fish

**HANDWASH\_c** ...Wash your hands before eating

**HANDWASH\_d** ...wash your hands immediately after handling frozen chicken products for example, chicken nuggets, goujons, burgers, kiev

Please select one answer only for each statement

1. Always
2. Most of the time
3. About half the time
4. Occasionally

5. Never
6. I don't cook meat, poultry or fish [ASK ONLY FOR HANDWASH\_b, d]
7. Don't know

[ASK ALL]

**HOWWASH** When you are at your term-time residence, how do you usually wash your hands?  
Please select one answer only

1. With water only
2. With soap/handwash and warm water
3. With soap/handwash and cold water
4. With hand sanitising wipes or gel
5. It depends on what I am doing
6. Other, please specify [OPEN TEXT]
7. I never wash my hands

[ASK ALL]

[INFORMATION BUTTON] Symptoms of food poisoning include:

- feeling sick (nausea)
- diarrhoea
- being sick (vomiting)
- stomach cramps
- a high temperature of 38C or above
- feeling generally unwell – such as feeling tired or having aches and chills

The symptoms usually start within a few days of eating the food that caused the infection. Sometimes they start after a few hours or not for a few weeks.

**POISLSTYR** As far as you know, have you had food poisoning in the last year?  
Please select one answer only

1. Yes, more than once
2. Yes, once
3. I think so but I'm not sure it was food poisoning
4. No
5. Don't know

[ASK IF HAD/OR THINK THEY HAD FOOD POISONING –POISLSTYR=1-3]

**POISDOC** Thinking about the most recent occasion you had food poisoning, what do you think caused the food poisoning?  
Please select one answer only

1. Food prepared at residence outside of term-time /home
2. Food prepared at your term-time residence
3. Pre-prepared food bought in a shop (for example, sandwiches, salads, sushi)
4. Food from a restaurant, café or takeaway
5. Other please specify [OPEN TEXT]
6. Don't know

ASK IF HAD/OR THINK THEY HAD FOOD POISONING –POISLSTYR=1-3]

**POISDOC2** Thinking about the most recent occasion you had food poisoning, did you see a doctor or go to hospital because of it?  
Please select one answer only

1. Yes
2. No
3. Don't know/can't remember

[ASK IF HAD/OR THINK THEY HAD FOOD POISONING – POISLSTYR=1-3]

**POISACT** In response to your most recent occasion you had food poisoning, did you do any of the following?

RANDOMISE ANSWER OPTIONS – EXCLUDE 9 AND 10 FROM RANDOMISATION. 10 IS EXCLUSIVE

Please select all that apply

1. I tried to get more information about the issue
2. I checked use-by dates more
3. I followed instructions on food packaging more
4. I have taken greater care when preparing and cooking food at my term-time residence
5. I have stopped eating certain foods
6. I have stopped eating at certain cafés, restaurants or takeaways
7. I have checked Food Hygiene Rating Scheme scores when eating out
8. I have taken greater care when storing food
9. I have done something else, please specify (open text)
10. I didn't do anything

[ASK ALL]

**FOODINFO** If you needed information about how to prepare and cook food safely (i.e. to prevent you getting ill), where would you go for information?

MULTICODE. RANDOMISE OPTIONS (BAR EXCLUSIVE CODES AND OTHER SPECIFY)

Please select all answers that apply

1. Family and friends
2. TV or radio programmes for example, cooking shows
3. Food Standards Agency/Food Standards Scotland website
4. Recipes – in books, magazines or online
5. Internet search engine
6. Social media
7. Product packaging
8. From a food hygiene / safety course or training previously attended
9. The Tab
10. Other, please specify [OPEN TEXT]
11. I don't need information on food safety [EXCLUSIVE]
12. I don't cook or prepare food [EXCLUSIVE]
13. Don't know [EXCLUSIVE]

[ASK IF ATTEND ASTON UNIVERSITY]

**ASTONSTUDY** Have you taken part, or plan to take part, in a research project based at Aston university which involves analysing the microbiology of chopping boards?

1. Yes, I have taken part already
2. Yes, I plan to take part
3. No

## [Food Shopping Module]

Next, we will ask you some questions about buying food.

[ASK ALL]

**WHOSHOP** Generally, who does the food shopping at your term-time residence? Please include both online and in store food shopping

Please select one answer only

1. I do all or most of the food shopping
2. I share the responsibility with someone else
3. Someone else in my term-time residence does it (for example, housemate)
4. Someone else outside of my term-time residence (for example, a relative or carer) does it
5. Each person does their own food/grocery shopping
6. Don't know

[IF WHOSHOP =3,4, 6] EVSHOP Do you ever do any food shopping at your term-time residence? Please select one answer only

1. Yes
2. No

[IF WHOSHOP 1,2,5 OR EVSHOP=1]

SHOPTYP1 How often, if at all, do you ...(list of shops types for example, supermarket, convenience )

SHOPTYP1 How often, if at all, do you ...

SHOPTYP1\_a ... shop for food in store at a supermarket (including mini supermarkets like Metro/Local)?

SHOPTYP1\_b ... shop for food at independent greengrocers, butchers, bakers or fishmongers?

SHOPTYP1\_c ... shop at local / corner shops, newsagents or garage forecourts?

SHOPTYP1\_d ... shop for food using an online marketplace for example, Amazon, Etsy, Gumtree, Facebook Marketplace?

SHOPTYP1\_e ...get food through a food sharing app for example, Olio

Please select one answer only for each statement

1. Every day
2. Most days
3. 2-3 times a week
4. About once a week
5. 2-3 times a month
6. About once a month
7. Less than once a month
8. Never
9. Can't remember

[IF WHOSHOP 1,2,5 OR EVSHOP=1]

SHOPTYP2 How often, if at all, do you ... SHOPTYP2\_a

... get a delivery to your term-residence from a supermarket? [INFO BUTTON: This includes food ordered online that is delivered to you]

SHOPTYP2\_b ... shop at a local market, farmers market or farm shop [INFO BUTTON: this includes farm deliveries for example, vegetable boxes?]

SHOPTYP2\_c ... get a recipe box delivered (for example, Hello Fresh, Gousto)? [INFO BUTTON: This includes recipe boxes ordered online that are delivered to you]

SHOPTYP2\_d ...get food from supermarket or shop waste area or bins for example, freegan

Please select one answer only for each statement

1. Every day
2. Most days
3. 2-3 times a week
4. About once a week
5. 2-3 times a month
6. About once a month
7. Less than once a month
8. Never
9. Can't remember

[IF WHOSHOP 1,2,5 & EVSHOP=1]

FOODCHK1 When shopping for food, how often, if at all, do you check ...(list of options for example, use-by)

FOODCHK1\_a ...use by dates? [INFO BUTTON: a use by date on food is about safety. Foods can be eaten until the use by date but not after. You will see use by dates on food that goes off quickly, such as meat products or ready-to-eat salads]

FOODCHK1\_b ...best before dates? [INFO BUTTON: The best before date, sometimes shown as best before end (BBE), is about quality and not safety. The food will be safe to eat after this date but may not be at its best. Best before dates appear on a wide range of foods including frozen, dried and tinned foods]

FOODCHK1\_c ...list of ingredients?

FOODCHK1\_d ...allergen information?

FOODCHK2\_a ...nutritional information (for example, calories, fat, sugar, salt)?

Please check one answer only for each statement

1. Always
2. Most of the time
3. About half the time
4. Occasionally
5. Never
6. Don't know

### **[Eat out and takeaway]**

[ASK ALL]

**EATOUTTERM** In the last 4 weeks, how often have you eaten food...?

Please select all that apply

MULTI CODE. RANDOMISE APART FROM 13

1. In a restaurant
2. In a pub/ bar
3. From a café, coffee shop or sandwich shop (either to eat in or take out)
4. From a canteen for example, at work, school, university, or hospital)
5. In a hotel, B&B or guesthouse
6. Ordered a takeaway directly from a takeaway shop or restaurant
7. Ordered a takeaway from an online food delivery company (for example, Just Eat, Deliveroo,
8. Uber Eats)

9. From a fast food outlet (either to eat in or take out)
10. From a mobile food van or stall
11. From an entertainment venue (for example, cinema, bowling alley, sports club)
12. From an online marketplace (for example, Amazon, Etsy, Gumtree, Facebook Marketplace)
13. From a food-sharing app (for example, Olio or Too Good To Go)

None of these [EXCLUSIVE]

1. Several times a week
2. About once a week
3. About 2-3 times a month
4. About once a month
5. Less than once a month
6. Never
7. Can't remember

[STUDENTCHECK 1,3] FHRS1 Have you heard of the Food Hygiene Rating Scheme?

1. Yes, I've heard of it and know quite a lot about it
2. Yes, I've heard of it and know a bit about it
3. Yes, I've heard of it but don't know much about it
4. Yes, I've heard of it but don't know anything about it
5. No, I've never heard of it

[ASK IF HAVE AWARENESS OF FHRS FHRS1= 1-4]

**FHRS6** In the last 12 months, have you checked the hygiene rating of a food business? You may have checked a rating at the business premises, online, in leaflets or menus; whether or not you decided to purchase food from there.

1. Yes, I have checked the Food Hygiene Rating of a food business
2. No, I have not checked the Food Hygiene Rating of a food business
3. Don't know

[IF STUDENTCHECK = 2] FHRS1 Have you heard of the Food Hygiene Information Scheme?

1. Yes, I've heard of it and know quite a lot about it
2. Yes, I've heard of it and know a bit about it
3. Yes, I've heard of it but don't know much about it
4. Yes, I've heard of it but don't know anything about it
5. No, I've never heard of it

[ASK IF HAVE AWARENESS OF FHRS1 = 1-4]

**FHRS6** In the last 12 months, have you checked the hygiene rating of a food business? You may have checked a rating at the business premises, online, in leaflets or menus; whether or not you decided to purchase food from there.

1. Yes, I have checked the Food Hygiene Information Scheme rating of a food business
2. No, I have not checked the Food Hygiene Information Scheme rating of a food business
3. Don't know

[HEALTHY EATING MODULE]

**INTRO:** We are now going to ask you some questions about healthy eating.

[ASK ALL]  
**HEALTHY**  
SINGLE CODE

Overall, would you say that what you usually eat is...

1. ...very healthy,
2. ...fairly healthy,
3. ...neither healthy nor unhealthy,
4. ...fairly unhealthy or,
5. ...very unhealthy?
6. Don't know
7. Prefer not to say

[ASK ALL]  
LAYOUT: QUESTION ABOUT VEGETABLES ASKED FIRST, THEN FRUIT ON THE SAME SCREEN.

**PORTION** Thinking about what you ate and drank yesterday. How many portions of...

**PORTION\_VEG** Vegetables did you eat yesterday?

A portion is around 3 heaped tablespoons of beans or pulses or cooked vegetables such as carrots or peas, a handful of cherry tomatoes or a bowl of salad. Please include salad, fresh, frozen or tinned vegetables but do not include potatoes.

[OPEN BOX]

98. Don't know

**PORTION\_FRUIT** Fruit did you eat yesterday?

A portion is one slice of large fruit such as a pineapple or melon, an apple, banana or pear, two small pieces of fruit such as satsumas or plums, a handful of grapes or 1 tablespoon of dried fruit. Please include fresh, frozen, tinned or dried fruit.

Do not include fruit juice as we will ask you about that next.

[OPEN BOX]

98. Don't know

[ASK ALL]

**FJUICE**

Did you drink fruit juice or smoothie yesterday?

That is 150ml or 5 fluid ounces. Please include pure juice, 100% freshly squeezed, fruit smoothies or juice from concentrate but do not include squash or diluted juice drinks.

Please select one answer

1. Yes – a small glass (150ml/5 fluid ounces)
2. Yes – a larger glass (more than 150ml/5 fluid ounces)
3. Yes – but I drank less than a small glass (150ml/5 fluid ounces)
4. No – I did not drink any fruit juice/smoothie yesterday
5. Don't know

[ASK ALL] [DEFRA BARRIERS]

**FRUITMORE** What, if anything, stops you from eating more fruit at the moment?

Please select all that apply

PROGRAMMING INSTRUCTIONS: RANDOMISE.

1. I eat enough fruit already [EXCLUSIVE]
2. I don't want to eat more fruit / I've cut back on how much fruit I eat [EXCLUSIVE]
3. I am allergic to certain types of fruit / some fruits
4. I prefer other types of food
5. Other people in my term-time residence prefer other types of food
6. I don't like fruit / some types of fruit
7. Where I shop doesn't have affordable fruit
8. Running out of fruit before my next shop
9. Difficulty travelling to find fruit which meet my needs
10. Other people in my term-time residence do the shopping
11. Lack of variety or quality of fruit where I shop
12. I can't afford to buy fruit
13. I do not have the time to buy fruit
14. I do not have facilities or space to store fruit
15. Fruit tends to go bad before I have eaten it
16. I find healthy eating messages conflicting and confusing
17. Other reasons, please specify [OPEN TEXT]
18. None of the above [EXCLUSIVE]
19. Prefer not to say [EXCLUSIVE]

[ASK ALL]

**VEGMORE** What, if anything, stops you from eating more vegetables at the moment?

Please select all that apply

RANDOMISE.

1. I eat enough vegetables already [EXCLUSIVE]
2. I am allergic to certain types of vegetables / some vegetables [EXCLUSIVE]
3. I prefer other types of food
4. Other people in my term-time residence prefer other types of food
5. I don't like vegetables / some types of vegetables
6. Where I shop doesn't have affordable vegetables
7. Running out of vegetables before my next shop
8. Difficulty travelling to find vegetables which meet my needs
9. Other people in my term-time residence do the shopping
10. Lack of variety or quality of vegetables where I shop
11. I can't afford to buy vegetables
12. I do not have the time to buy vegetables
13. I do not have facilities or space to store vegetables
14. Vegetables tend to go bad before I have eaten them
15. I find healthy eating messages conflicting and confusing
16. I do not have the right kitchen utensils or equipment to prepare or cook vegetables
17. The time it takes to prepare vegetables
18. I do not know how to cook or prepare vegetables
19. Other reasons (please specify)
20. None of the above [EXCLUSIVE]
21. Prefer not to say [EXCLUSIVE]

[ASK CONSUMEMEAT IF VEG =4,5,6, OTHERWISE ASK ALL]

[FOR THE FOLLOWING PLEASE USE CAROUSEL GRID FORMAT]

### **CONSUME**

How often do you...

CONSUMEMEAT ...eat processed meat products (e.g. sausages, burgers, meat and chicken pies)?

CONSUMESWEETS ...eat sweets and chocolate?

CONSUMEFIZZY ...drink sugary fizzy drinks and diluted squash?

CONSUMECHIPS...eat chips and other fried foods?

CONSUMEFV ...eat fruit and vegetables?

Please select one answer only for each statement

1. Every day
2. Most days
3. 2-3 times a week
4. About once a week
5. 2-3 times a month
6. About once a month
7. Less than once a month
8. Never
9. Can't remember

### [Food Security nodule]

[NEW SCREEN]

The following questions ask about your personal situation.

[ASK ALL]

[FOR THE FOLLOWING PLEASE USE CAROUSEL GRID FORMAT]

**FOODSEC** Please say whether the statement below was often true, sometimes true or never true for you at your term-time residence, in the last 12 months.

FOODSEC\_1 I worried whether my food would run out before I got money to buy more.

FOODSEC\_2 The food that I bought just didn't last, and I didn't have money to get more.

FOODSEC\_3 I couldn't afford to eat balanced meals.

Please select one answer only for each statement

1. Often true
2. Sometimes true
3. Never true
4. Don't know or prefer not to say

ASK IF FOODSEC\_1=1 or 2 FOODSEC\_2=1 or 2 FOODSEC\_3=1 or 2]

**SKIPMEAL** At your term-time residence, in the last 12 months, did you ever cut the size of your meals or skip meals because there wasn't enough money for food?

Please select one answer only

1. Yes
2. No
3. Don't know or prefer not to say

[IF SKIPMEAL = 1]

**SKIPFREQ** How often did this happen at your term-time residence, in the last 12 months – almost every month, some months but not every month, or in only 1 or 2 months?

Please select one answer only

1. Almost every month

2. Some months but not every month
3. Only 1 or 2 months
4. Don't know or prefer not to say

[ASK IF FOODSEC\_1=1 or 2 FOODSEC\_2=1 or 2 FOODSEC\_3=1 or 2]

**EATLESS** At your term-time residence in the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food?

Please select one answer only

1. Yes
2. No
3. Don't know or prefer not to say

[ASK IF FOODSEC\_1=1 or 2 FOODSEC\_2=1 or 2 FOODSEC\_3=1 or 2]

**HUNGRY** At your term-time residence in the last 12 months, were you ever hungry but didn't eat because there wasn't enough money for food?

Please select one answer only

1. Yes
2. No
3. Don't know or prefer not to say

[ASK IF FOODSEC\_1=1 or 2 FOODSEC\_2=1 or 2 FOODSEC\_3=1 or 2]

**LOSTWT** At your term-time residence in the last 12 months, did you lose weight because there wasn't enough money for food?

Please select one answer only

1. Yes
2. No
3. Don't know or prefer not to say

[ASK IF SKIPMEAL =1 and/or EATLESS =1 and or HUNGRY =1 and/or LOSTWT =1]

**NOTEAT** At your term-time residence in the last 12 months, did you ever not eat for a whole day because there wasn't enough money for food?

SINGLE CODE

Please select one answer only

1. Yes
2. No
3. Don't know or prefer not to say

[ASK IF DIDN'T EAT FOR WHOLE DAY IN LAST 12 MONTHS – NOTEAT = 1]

**NOTEATFREQ** How often did this happen at your term-time residence – almost every month, some months but not every month, or in only 1 or 2 months -?

Please select one answer only

1. Almost every month
2. Some months but not every month
3. Only 1 or 2 months
4. Don't know or prefer not to say

[ASK ALL]

**CHANGE** Have you made any of these changes to your eating habits in the last 12 months at your term-time residence?

MULTICODE. RANDOMISE ANSWERS APART FROM CODES 14 AND 15

Please select all that apply.

1. Eaten at your term-time residence more
2. Cooked at your term-time residence more
3. Eaten fewer takeaways
4. Eaten out less
5. Made packed lunches more
6. Bought items that were on special offer more
7. Changed where you buy food for cheaper alternatives
8. Changed the food you buy to cheaper alternatives
9. Prepared food that could be kept as leftovers more
10. Kept leftovers for longer before eating
11. Eaten food past its use by date more
12. Bought food close to its use by date more
13. Used a food bank/emergency food provider
14. Other (please specify)
15. No, I/we haven't made any changes

[ASK IF MADE AT LEAST ONE CHANGE IN THE LAST 12 MONTHS –CHANGE= 1-13]

**CHANGE2** Thinking about the changes to eating habits that you have made in the last 12 months, at your term-time residence, why did you make these changes?

RANDOMISE ANSWERS APART FROM 6 AND 7

Please select all that apply

1. Financial reasons
2. Health reasons
3. Food safety reasons (for example, to avoid food poisoning)
4. Due to the bad or unpleasant physical reaction that certain foods cause (for example, allergy, intolerance or other food hypersensitivity)
5. Because of lockdown/COVID-19
6. Going to/returning to university
7. Other (please specify)
8. Prefer not to say

[ASK ALL]

**FOODBANK** At your term-time residence in the last 12 months, have you received a free parcel of food from a food bank or other emergency food provider?

Please select one answer only

1. Yes
2. No
3. Prefer not to say

[ASK IF CHANGE=13 or FOODBANK=1]

**FBANKFREQ** At your term-time residence how often in the past 12 months, have you received a free food parcel from a food bank or other emergency food provider?

Please select one answer only

1. Only once in the last year
2. Two or three times in the last year
3. Four to six times in the last year
4. More than six times but not every month
5. Every month or more often
6. Don't know
7. Prefer not to say

[ASK ALL][

## **[Recontact]**

The FSA/FSS may wish to carry out follow up research on this topic sometime within the next two years. If you agree, we will pass your name and email address to the FSA/FSS so they can invite you to take part in follow up research. The FSA/FSS may share these details with research agencies appointed to carry out this follow up research on their behalf. The full privacy policy can be found here [insert link].

Would you be willing for Youthsight to share your name, email address and your survey responses with the FSA/FSS to allow them and their agents to contact you again for follow up research?

Please select one answer only

1. Yes
2. No

[ASK IF RC1 = 1]

**RC3** What is your name (forename and surname)? Please write your names in the box below [Provide suitable standard space and format for this to be entered] [(If they try to move on without entering details or with just one letter in a field: Error message: If you are willing to be re-contacted about this study or follow up research we need your full name in order to contact you]

[ASK IF RC1=1]

**RC4** What is your email address? INFO BUTTON: What will you use my email address for? If you provide us with your email address, this may be used to contact you to ask questions about this study or invite you to take part in follow up research on the topic. 99. Do not wish to give email address [if try to move on]

[IF RC1 = 1]

**RC5** What is your postal address? INFO BUTTON: What will you use my postal address for? If you provide us with your postal address, this may be used to contact you to ask questions about this study or invite you to take part in follow up research on the topic. 99. Do not wish to give postal address [if try to move on]