Exploring food attitudes and behaviours in Northern Ireland: Findings from the Food and You Survey 2012

TNS BMRB, Policy Studies Institute and University of Westminster

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Exploring food attitudes and behaviours in Northern Ireland: Findings from the Food and You Survey 2012

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Main report

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Executive summary and Chapter 7: Looking ahead

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Contents

Executive summary

This report presents findings from Wave 2 of the Northern Ireland Food and You survey, commissioned by the Food Standards Agency (FSA or the Agency). Food and You examines attitudes, reported behaviour and knowledge relating to food safety and healthy eating. It provides data on food shopping, storage, preparation, consumption and factors that may affect these, such as eating habits, influences on where people choose to eat out and experiences of food poisoning. Wider food safety issues, including levels of awareness, knowledge and concerns about new food production technologies such as genetic modification and irradiation were also explored. Two chapters on healthy eating examine attitudes, reported behaviour and knowledge towards healthy eating and nutrition.

The first wave of the survey was carried out in 2010, and this second wave provides data from 2012. This wave also saw the development of an index of recommended practice for food safety which has been used to explore socio-demographic differences in reported food safety practices in more depth.

The Northern Ireland survey consisted of 504 interviews from a representative sample of adults aged 16 and over (with no upper age limit).

This summary brings together key findings from across the report (Chapters 2-8). The concluding chapter (Chapter 9) discusses, from the perspectives of FSA Northern Ireland with input from the FSA's Social Science Research Unit, the contribution of Food and You to the wider evidence base on food safety and healthy eating practices, and considerations for the future.

Eating, Cooking and Shopping (Chapter 2)

A greater proportion of respondents in this wave reported that, for financial reasons, they had bought more items on special offer (38% compared to 17% in Wave 1) and had eaten at home more (23% compared to 16% in Wave 1) in the past 6 months. Compared with Wave 1, respondents reported doing a main shop less frequently with a shift from shopping once a week (61%, decrease of 16 percentage points) to shopping two or three times a week (15%, increase of 8 percentage points). A third (31%) of respondents relied solely on a large supermarket for their food shopping, Compared with respondents in England, Wales and Scotland, respondents in Northern Ireland were more likely to report shopping for food in a garage forecourt (22% compared with 2% - 4%).

An evening meal was the most frequently reported meal to be eaten at home every day in the previous week (68%) followed by breakfast (63%). Three-quarters of respondents (73%) reported cooking or preparing food for themselves at least once a day.

Food safety in the home (Chapters 3 and 4)

There was substantial variation in the extent to which food safety practices in the home reflected Agency recommended practices. Respondents were most likely to report domestic food safety practices that were in line with Agency guidance for cleaning and cooking and less likely for chilling, cross-contamination, and use of use-by dates.

Cleaning: In line with Agency advice, 82% of respondents reported always washing their hands before starting to prepare or cook food and 79% reported always washing their hands immediately after handling raw meat, poultry or fish. The majority of respondents reported cleaning and changing tea towels, dishcloths and sponges at least once a week; 92% reported cleaning the sink and draining board thoroughly, 82% reported changing washing up dishcloths/sponges and 85% reported changing tea towels.

Cooking: Three-quarters (77%) of respondents reported always cooking food until it is steaming hot. Ninety-three per cent of respondents reported that they never ate chicken or turkey if the meat was pink or had pink/red juices and 86% never ate burgers/sausages if the meat was pink or red or had pink/red juices. Sixty-one per cent of respondents reported never eating red meat if it was pink or had pink/red juices.

The majority of respondents (86%) said that they only reheat food once. Respondents checked if food had been reheated properly principally by determining that the middle is hot (40%) and seeing if steam was coming out if it (37%).

Cross-Contamination: Half of respondents (50%) reported that they always used clean or different chopping boards for raw and cooked meats. Sixty-one per cent reported keeping certain foods in certain parts of the fridge for reasons of food safety / to stop cross-contamination.

A quarter (26%) of respondents reported never washing raw meat, poultry, fish or seafood. Just over half (54%) of respondents reported always washing fruit and 64% reported washing vegetables that were going to be eaten raw.

Chilling and defrosting: Three-quarters of respondents (77%) reported never storing open tins in the fridge in line with recommended practice. A third (36%) of respondents reported checking their fridge temperatures and 30% of these respondents reported doing so at least once a week (a decrease compared to 38% in Wave 1). Around half of respondents (52%) reported never checking it. Just over half (55%) said that the fridge temperature should be between 0-5^{0}C, an increase compared to Wave 1 (43%).

A third (36%) of respondents reported generally defrosting meat or fish in a refrigerator and 4% reported generally defrosting food in a microwave. However, 57% of respondents reported generally defrosting meat or fish at room temperature which is not in line with Agency guidance.

Indicators of whether food is safe to eat

Asked which date (use-by, best before, display until) was the best indicator of whether food is safe to eat, two-thirds of respondents (65%) said the use-by date. However, when asked how they checked that food was safe to eat, respondents most frequently reported using smell and how food looked.

Around half of respondents reported that they would never use or eat beyond the use-by/best before date any eggs (59%), raw meat (53%), cooked meat (45%) or dairy foods (45%). Respondents were more likely to report eating bread beyond its use-by/best before date.

Asked how long after cooking a meal they would eat the leftovers, 84% of respondents reported, in line with Agency guidance, that they would eat it within two days.

Index of recommended practice

Using a composite measure of domestic food safety practices, an index of recommended practice (RP) was developed (refer to Chapter 4) in order to identify which socio-demographic groups overall were more likely to report practices that were **not** in line with RP. Compared to respondents in Northern Ireland, respondents in England were almost twice and respondents in Scotland were one and half times as likely to report practices that were not in line with RP.

Men were found to be three times as likely as women to report domestic food safety practices that were not in line with Agency guidance. Compared to respondents in Scotland and England and Wales, this gender difference was more pronounced in Northern Ireland. Older respondents (aged 55-64 and 75 or older), were also more likely to report practices that were not in line with Agency guidance. This was especially the case for respondents aged 75 and over who were almost four times as likely as to report practices not in line with Agency guidance compared to respondents aged 35-44, There was a more pronounced difference between these age groups in Northern Ireland than in England and Wales, but the difference was similar to that found amongst respondents in Scotland. Unique to Northern Ireland, respondents without continuous use of a motor vehicle were found to be more likely to report practices that were not in line with Agency guidance.

Eating outside the home (Chapter 5)

Three-quarters (73%) of respondents reported having eaten out in the past week. Men were more likely than women to eat out, particularly from takeaways and fast food outlets. Similarly, those aged under 35 years were more likely to have eaten out in the past week.

Just over a third (36%) of respondents felt that food was less safe when eating out compared with eating at home, while 5% considered food to be safer when eating out.

When asked what were important factors when deciding where to eat out, respondents most frequently said cleanliness and hygiene (64%) followed by good service (56%) and price (49%). Consideration of a good hygiene rating score was cited by 29% of respondents.

Respondents were then asked how they determined hygiene standards in places they eat out at and buy food from. Two-thirds of respondents said they use the general appearance of the premises (66%) and 46% said they use the appearance of staff. The use of hygiene stickers was mentioned by 38% of respondents, a large increase compared to Wave 1 (11%).

Respondents were asked a number of questions about the Food Hygiene Rating Scheme (FHRS). The FHRS was launched in Northern Ireland in June 2011 and operates across the province. The scheme is designed to help consumers make informed choices about the hygiene standards of eating establishments. Overall, two-thirds (66%) of respondents in Northern Ireland reported having seen the Food Hygiene Rating Scheme (FHRS) sticker and/or certificate before and just over one-quarter (27%) had used a food hygiene standards scheme such as the FHRS before. Compared to respondents in Northern Ireland, respondents in England and Wales were less likely to have seen (33% and 43% respectively) the FHRS before or to have used a food hygiene standards scheme (10% and 13% respectively) before. Almost all (96%) respondents who had used a scheme reported that they had found it helpful.

Food poisoning and attitudes towards food safety and food production (Chapter 6)

A third of respondents (32%) reported having had food poisoning in the past. As a consequence of their food poisoning, 37% of respondents stopped eating at certain food establishments and 12% stopped eating certain foods. The proportion of respondents believing that it is just bad luck if you get food poisoning has decreased from 31% to 23% between Wave 1 and Wave 2.

Respondents were more likely to report being concerned about meat imported from outside the UK (59%) than were concerned about meat produced in the UK (28%). Asked about other food issues, respondents were most concerned about food poisoning (71%) and food hygiene when eating out (65%). Respondents were less concerned about food hygiene at home (48%) and genetically modified foods (45%). Asked what they had done, if anything, as a result of their concerns, respondents most frequently said that they had taken no action followed by reading food labels more carefully.

Advice on healthy eating (Chapter 7)

The eatwell plate illustrates the types and proportions of foods needed for a healthy, balanced diet. Asked to place food groups into the different sections of a blank eatwell plate, 27% of respondents placed all five food groups in their recommended sections and 3% did not place any of the food groups in the recommended sections. The food groups least frequently placed in their recommended sections were starchy foods (45%) and protein (41%).

Base your meals on starchy foods: Three-quarters (73%) reported eating starchy foods at least once a day. A third of respondents (35%) said that eating starchy foods was very important for a healthy lifestyle.

Eat lots of fruits and vegetables: Almost all respondents (90%) said that the recommended number of portions of fruit and vegetables was five a day (an increase from 81% in Wave 1) and half (48%) of respondents reported eating at least five portions a day in the previous day.

Eat more fish: Forty-six per cent reported eating oily fish, 10% shellfish and 57% other fish (excluding shellfish) at least once a week. Almost half (47%) believed that eating fish was very important for a healthy lifestyle.

Cut down on saturated fat and sugar: There was high agreement among respondents that limiting foods (and drinks) high in fat (73%), saturated fat (79%) and sugar (78%) was very important for a healthy lifestyle. However, there was limited knowledge of the recommended maximum daily intakes for both total and saturated fat. A minority of women (6%) and men (1%) knew the maximum recommended daily allowance for total fats.

Try to eat less salt: Seventy-two per cent reported that eating less salt was very important for a healthy lifestyle. Ten per cent stated a maximum daily intake of salt for adults that was in line with Agency guidance (6g). Almost half (49%) stated an amount that was not in line with Agency guidance, and 41% reported that they did not know.

Get active and try to be a healthy weight: Three-quarters (74%) said that keeping to a healthy weight was very important for a healthy lifestyle. Thirty per cent knew the estimated average requirements for Calories for women (2000) and 28% knew this was 2500 Calories for men, with younger respondents more likely to be aware of the correct recommendations.

Drink plenty of water: Seventy-nine per cent believed that this was very important for a healthy lifestyle.

Don't skip breakfast: Seventy-five per cent believed that this was very important for a healthy lifestyle.

Eating and health (Chapter 8)

Nearly all respondents said that what you eat makes a big difference to your health (95%) and that even if your diet is not healthy it is worth making small changes (97%). Three-quarters (76%) of respondents said that experts contradict each other over what foods are good for you while a third (35%) reported that they get confused over what is supposed to be healthy.

Respondents reported eating starchy foods (73%), fruit and vegetables (72%) and milk and dairy (78%) at least once a day. Thirty-nine per cent reported eating cakes, pastries and biscuits at least once a day, and three-quarters reported eating chips or roast potatoes at least once a week. Between waves there has been a reduction in the proportion of respondents reporting they eat starchy foods (down nine percentage points) and pastries and cakes (down ten percentage points) every day.

The majority of respondents (85%) thought that the food they usually ate was very or fairly healthy. Asked if they had made any changes to the food they eat in the last six months, 29% of respondents reported that they had eaten more fruit and vegetables (an increase from 22% at Wave 1), 22% reported eating smaller portions and 19% reported eating less salt and saturated fat.

A quarter (25%) of respondents reported that they would have no difficulty in trying to eat more healthily. The most frequently reported barriers to eating more healthily were the cost of food, (22%, an increase from 11% in Wave 1) time constraints (13%), cutting out sugar (12%) and not liking healthy food (12%).

When eating out, 62% of respondents said that the food they ate outside of home was less healthy than the food they ate when at home. In Wave 2, a greater proportion of respondents reported that they wanted to see more information about the healthiness of food in takeaway outlets (61% compared to 44%), restaurants (59% compared to 50%) and fast food outlets (57% compared to 38%).

1. Introduction

This report presents findings from Wave 2 of the Food and You survey, commissioned by the Food Standards Agency (FSA or the Agency). Much of the Agency's work with the public is concerned with informing and influencing the ways in which food is purchased, stored, prepared and consumed. Food and You provides data about the prevalence of different attitudes, reported behaviour and knowledge on these topics.

The first wave of the survey was carried out in 2010, and this second wave builds on and extends previous findings. While it is possible to observe some differences between the two waves, trends cannot be reliably detected without further waves of data.

The main focus of this report is on findings in Northern Ireland but the report also makes comparisons with the other regions of the UK, providing an overview of the key findings from Wave 2. The survey consisted of 3,231 interviews, of which 504 were in Northern Ireland, from a representative sample of adults aged 16 and over (with no upper age limit), across the UK.

1.1 Background and objectives

1.1.1 Role of the FSA

The FSA was created in 2000 as a non-ministerial government department governed by a Board. The Agency was set up to:

"Protect public health from risks which may arise in connection with the consumption of food, and otherwise to protect the interests of consumers in relation to food"

The Food Standards Agency has a strategy to 2015 which sets out their approach to ensure the general public can have trust and confidence in the food they buy and eat. The six outcomes the FSA aims to deliver are:

- Foods produced or sold in the UK are safe to eat
- Imported food is safe to eat
- Food producers and caterers give priority to consumer interests in relation to food
- Consumers have the information and understanding they need to make informed choices about where and what they eat
- Regulation is effective, risk-based and proportionate, is clear about the responsibilities of food business operators, and protects consumers and their interests from fraud and other risks
- Enforcement is effective, consistent, risk-based and proportionate and is focused on improving public health

In providing guidance on food safety to consumers, the Agency aims to minimise the risk of food poisoning. Advice to the general population centres on four aspects of food hygiene: cleaning, cooking, cross-contamination and chilling (collectively known as the '4 Cs'), with advice given on each aspect. Guidance is also given on the use of date labels (such as 'use-by' and 'best-before' dates) and storage instructions on foods to help ensure the safety of food eaten at home. In Northern Ireland and Scotland, the Agency is also responsible for matters relating to nutrition and dietary health, which involves:

- Developing policy and proposing legislation
- Encouraging food producers and caterers to reduce the levels of saturated fat, salt and calories in food products
- Giving the public advice on diet and nutrition and food safety issues.

1.1.2 The Food and You survey

In 2008, the FSA's Social Science Research Committee (SSRC)[1] was asked to review the Agency's Consumer Attitudes Survey (CAS)[2], which had run for eight waves from the FSA's inception in 2000[3]. The SSRC recommended that a new rigorous regular survey was needed to provide evidence underpinning the FSA's policies[4]. The review of the CAS noted that using a random location quota sample risked introducing unquantifiable bias into the sample and recommended that a future survey should adopt a random probability approach. Given the large number of variables influencing attitudes and behaviour a minimum target sample of 2,500 achieved interviews was suggested. The review noted that the relationship between knowledge, attitudes, behaviour and individual characteristics is complex. Even with precisely worded questions, responses will vary according to knowledge and understanding of the subject matter. As such, it was recommended that the questionnaire be developed with input from an Advisory Group with representatives from the SSRC, and new questions piloted.

In 2009, the FSA commissioned a consortium comprising TNS BMRB, the Policy Studies Institute (PSI) and the University of Westminster to carry out the first wave of Food and You. The main aim of Wave 1 was to collect quantitative information as a baseline on the UK public's attitudes, beliefs and reported behaviour towards food issues (such as food safety and healthy eating). This provided an extensive evidence base to support policy making at the FSA and across other relevant government departments.

[1] The SSRC is an independent Scientific Advisory Committee set up to provide advice and challenge to the Agency on social science matters; further information can be found at: http://ssrc.food.gov /
[2] Further information on CAS can be found at: http://www.food.gov.uk/science/socsci/surveys/foodsafety-nutrition-diet/
[3] The SSRC's full discussion paper can be found at: http://www.food.gov.uk/multimedia/pdfs/ssrc0822v1.pdf
[4] http://food.gov.uk/multimedia/pdfs/ssrc0822v1.pdf

Wave 1 of the Food and You survey was carried out in 2010. A report on the findings, and methodological details, are available on the FSA website[5]. Results from Wave 1 of the survey were used to determine the theme of the 2012 FSA Food Safety week[6].

Wave 1 of the Food and You survey contained questions covering both healthy eating and food safety, and the findings were reported together. However, during Wave 1 of the survey, responsibility for nutrition policy (healthy eating) transferred in England and Wales to the Department of Health (DH) and the Welsh Assembly Government respectively. Nutrition policy in Scotland and Northern Ireland remains the responsibility of the Agency.

Wave 2 of the survey, therefore, focussed solely on food safety issues for England and Wales but also included an additional question module on healthy eating for Scotland and Northern Ireland. This report covers the findings from the Northern Ireland survey and therefore includes the healthy eating module; there are separate reports for the UK and Scotland.

The objectives for the second wave of the Food and You survey were to collect quantitative information to enable the Agency to:

- Explore public understanding of, and engagement with, the Agency's aim of improving food safety, standards and nutrition;
- Assess public attitudes to new developments, such as emerging food technologies;
- Assess knowledge of, and response to, messages and interventions aimed at raising awareness and changing behaviour;
- Identify specific target groups for future interventions (e.g. those most at risk or those among whom FSA policies and initiatives are likely to have the greatest impact);
- Monitor changes over time (compared with data from Wave 1 or from other sources) in attitudes and behaviour; and,
- Broaden the evidence base and develop indicators to assess progress in fulfilling the Agency's strategic plans, aims and targets.

[5] http://www.foodbase.org.uk//admintools/reportdocuments/641-1-1079_Food_and_You_Report_Main_Report_FINAL.pdf
[6] http://www.food.gov.uk/news-updates/campaigns/germwatch/

1.2 Methodology

In this section, an overview of the survey methodology is outlined; detailed information can be found in the technical report[7].

1.2.1 The survey

The survey sample was a stratified[8] clustered[9] random probability sample of private households in the UK. The Postcode Address File (PAF)[10] was used as a sampling frame and in each eligible household; one adult aged 16+ (with no upper age limit) was selected for interview. Where there was more than one household or more than one adult in a household at an address, a random selection procedure was used to select the respondent. Weighting was applied at the analysis stage, to ensure the weighted sample was representative of the UK as a whole.

The survey comprised 3,231 interviews with adults across the UK, carried out face-to-face in respondents' homes. The samples in Scotland and Northern Ireland were boosted (increasing the sample to around 500 in each country) to enable more detailed analysis at a country level. The final UK results were weighted back to ensure that the countries where the sample was boosted were not over-represented. The sample profile is shown in Table 1.1.

Table 1.1 Weighted and unweighted sample profile

	Unweighted (n)	Weighted (n)
Total	3,231	3,231
England & Wales	2,220	2,866
Scotland	507	274
Northern Ireland	504	91

The fieldwork for the survey took place between March and August 2012. Interviews in Northern Ireland and Scotland took, on average, 60 minutes to complete. Across the UK survey a response rate of 54% was achieved; this was slightly higher than Wave 1 where

[7] http://www.foodbase.org.uk//admintools/reportdocuments/805-1-1459_Wave_2_Technical_Report.pdf

[8] The sample was stratified by Government Office Region (GOR), the percentage of heads of households in a non-manual occupation (NS-SEC groups 1-3), the percentage of households with no car and population density (persons per hectare)

[9] The addresses selected to participate within the survey were clustered within postcode sectors to provide manageable interviewer workloads.

[10] The PAF lists all known UK postcodes and addresses and is the sampling frame commonly used in general population surveys.

the response rate was 52%. The response rate in Northern Ireland was 56% and in Scotland it was 52%, both similar to those achieved at Wave 1 (57% in Northern Ireland and 50% in Scotland).

1.2.2 Questionnaire development

Before the main survey was carried out, an extensive development phase was undertaken to ensure that Wave 2 collected information of interest to the FSA, and that it produced the highest quality data possible. The development began with TNS BMRB, the FSA and the Advisory Group reviewing the Wave 1 questionnaire to determine which questions should be kept for Wave 2. The review stage also identified new areas of interest which were to be considered for inclusion in the survey. Following this review, a questionnaire was developed by the TNS BMRB/PSI research consortium based on the policy priorities for Wave 2.

There were three main stages of questionnaire testing:

- cognitive testing;
- omnibus testing; and
- a pilot survey.

A separate report has been produced which covers the questionnaire testing in detail[11].

1.3 About this report

1.3.1 Self-reported behaviours

Interviews as a data collection method cannot capture people's actual behaviour. What respondents say in interviews about what they do is necessarily *reported* behaviour. Here self-reported behaviour is used as a proxy. Although for the sake of smoother reading, much of the report refers to behaviour, attitudes or knowledge without repeating that it is reported, the fact that it is not actual behaviour must none the less always be borne in mind.

At the questionnaire development stage, the risk of social desirability bias was identified as high i.e. respondents tended to answer questions based on what they thought they ought to say, rather than reflecting what they actually do, know or think. In particular, there were a number of topics in the questionnaire, for which respondents might be particularly reluctant to report behaviour which goes against 'best practice' (for example, not washing their hands before cooking or preparing food). As for Wave 1 of the survey, the questionnaire was carefully designed to mitigate this by asking questions about behaviour in specific time periods (e.g. 'yesterday' rather than 'usually'), and by ensuring that behaviours asked about included neutral items as well as recommended and not recommended practices.

[11] http://www.foodbase.org.uk//admintools/reportdocuments/805-1-1458_Food_and_You_W2_Question_testing_report_01_10_2012_FINAL.pdf

1.3.2 Wave-on-wave analysis

As a result of the change in the remit of the FSA, the focus of the survey content was changed between Wave 1 and Wave 2. However, to minimise order effects (which can affect the way in which questions are answered) attempts were made to keep the structure of the questionnaire as similar as possible. Despite this, the removal of the healthy eating questions in the England and Wales questionnaires, and the move of these questions to the end of the Northern Ireland and Scotland questionnaires, introduced unavoidable differences between the two waves of the survey. As the context in which survey questions are asked is known to influence the way respondents reply we cannot rule out the possibility that differences in responses between waves may have been partly or wholly because of these changes.

Where question wording has remained consistent with Wave 1, statistical testing has been undertaken to determine whether results have significantly changed over the last two years. It is important, however, to exercise caution in the interpretation of apparent differences. As there are only two data points it is not possible to tell whether statistically significant differences indicate a trend. A third wave of data collection would allow greater confidence in identifying trends.

In Wave 1 of the survey, in order to cover additional topics without over-burdening respondents, three sections of the questionnaire (eating arrangements, eating out and shopping patterns) were each asked of a random third of respondents. In Wave 2, all of the survey questions were asked of all respondents. Whilst in general comparisons can still be made between the questions in Wave 1 which were asked of a third of the sample and the questions in Wave 2, the smaller sample sizes in Wave 1 mean that for significant differences to be observed the differences have to be larger.

1.3.3 Analysis carried out

Throughout the report, bivariate analysis has generally been used to look at how attitudes and reported behaviours differ for key demographic groups (e.g. gender and age). Such analysis can be carried out quickly, allowing a large number of cross-tables to be produced, and it displays differences in a clear manner which is easily understood by readers. A drawback of bivariate analysis, however, is that other factors that may be the underlying cause of the differences seen between two groups cannot be controlled for.

Whilst the majority of statistical testing has used bivariate analysis, there is one topic area where multivariate analysis has been used to explore whether variation in the likelihood of following the FSA's recommended practice (RP) for food safety differs by certain demographic factors (see Chapter 4). In order to do this, a composite variable was created, based on answers given to a range of questions, to give each respondent a score on an index of RP for food safety. Respondents were grouped into three categories: lower band (0-1), mid band (3-4) and upper band (5-10) and multivariate analysis (logistic multivariate regression modelling) of the composite variable was carried out to analyse the significance and contribution of a number of demographic factors in predicting whether or

not a respondent engaged in behaviours that were not in line with RP. See Chapter 4 and Technical Appendix 10.3 for further detail.

1.3.4 Reporting conventions

Only those differences found to be statistically significant at the 95% level are reported. The identification of a difference as statistically significant means that we can be 95% confident that an observed difference is not down to chance. Owing to the small sample sizes in Northern Ireland relative to the overall UK sample, percentage differences between Northern Ireland and the UK need to be large to be statistically significant.

Percentages may not add to 100% as a result of rounding.

1.3.5 Further use of the findings and data

The survey collected a wide range of data and this report does not cover everything. Data tables are available online[12] and full data are available on the UK Data Archive[13] for further analysis.

1.3.6 Structure of the report

The report is divided into nine chapters:

- Chapter 2 presents information about eating, cooking and shopping habits, providing background information and context for the rest of the report;

- Chapter 3 presents findings about the extent to which respondents were aware of and report practices that are in line with government advice on food safety, including practices relating to the '4 Cs' (cleaning, cross-contamination, chilling and cooking), use of leftovers and date labels and attitudes to food safety;

- Chapter 4 draws together differences in reported food safety practices between different groups of the population through the introduction and analysis of an index of recommended practice (RP) for food safety;

- Chapter 5 focuses on reported eating outside of the home, covering the type of establishments where people eat out, the frequency of eating out and the decision making process which goes into deciding where to eat out. Particular focus is placed on

[12] http://www.foodbase.org.uk//admintools/reportdocuments/805-1-1454_Food_and_You_FINAL_weighted_tables_v1.pdf
[13] http://www.data-archive.ac.uk/

the use of Food Hygiene Rating Schemes (FHRS) and Food Hygiene Information Schemes (FHIS);

- Chapter 6 explores experience of food poisoning and concern about food safety and food production. The chapter also looks at whether concern has affected reported attitudes or behaviour

- Chapter 7 presents information about the extent to which respondents were aware of and reported practices that were in line with the messages included in the Government's advice on healthy eating, including the eatwell plate, the '8 tips', recommended daily consumption of fruit and vegetables and recommended maximum daily intakes of salt, fat and calories;

- Chapter 8 links to Chapter 7 in exploring respondents' attitudes to healthy eating, perceptions of their own diets, any changes made to their diets and the barriers and motivations to change.

2. Setting the scene: eating, cooking and shopping

To provide some context for the report, this chapter examines eating, cooking and shopping behaviours and changes in behaviour for financial reasons.

Summary

Eating and cooking at home

- Over the previous week, on average (mean) respondents ate their main evening meal at home on 6.2 days, their breakfast on 5.7 days and their lunch on 4.0 days.
- 80% of respondents cooked and prepared food for themselves at least five times a week.
- The majority of respondents (82%) said they did not have specific dietary requirements, an increase compared with Wave 1 (73%). Only 5% of respondents reported avoiding certain foods for medical reasons and 7% said they followed a weight-reducing diet.

Shopping for food

- 80% of respondents reported at least some responsibility for household food shopping, with half (51%) of all respondents saying that they were responsible for all or most of it.
- 60% of respondents reported that they shopped on a weekly basis and the vast majority (92%) said they shopped at large supermarkets in general.

Changes in food purchase and consumption for financial reasons

Compared with Wave 1, a greater proportion of respondents in Wave 2 reported making changes in buying and consuming food for financial reasons. For example, there was an increase in the proportion of respondents who said that, due to financial reasons, they bought items on special offer more (38% compared with 17% at Wave 1) and ate at home more (23% compared with 16% at Wave 1). A small proportion said they were eating more food past its use-by date (5%) and keeping leftovers for longer (4%) for financial reasons.

Comparisons with the rest of the UK

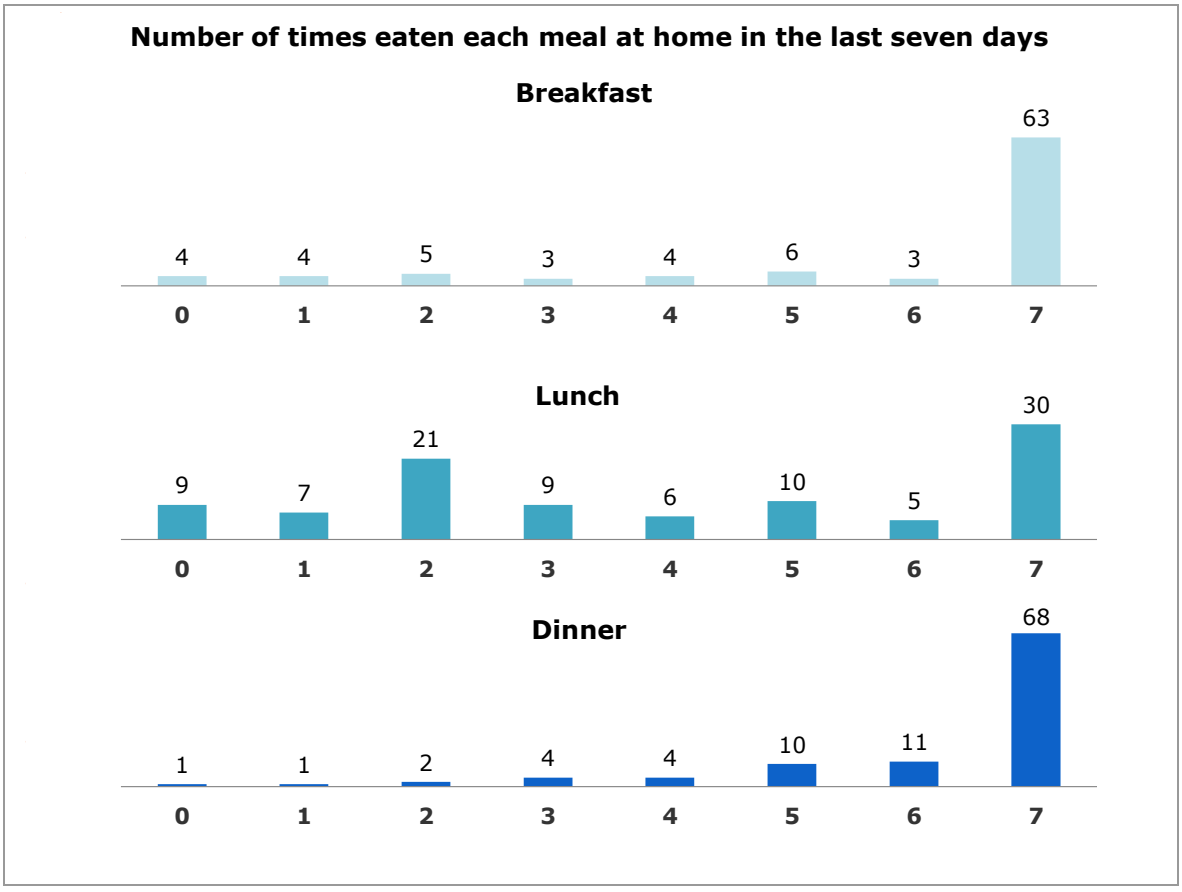
- Respondents in Northern Ireland were more likely to:
  - cook or prepare food for themselves at least once a day (73% compared with 60% in England and 61% in Scotland)
  - shop at independent butchers (44% compared with 31% in England).
  - shop for food in a garage forecourt (22% compared with 2-4% in England, Wales and Northern Ireland).

2.1 Eating and cooking at home

2.1.1 Frequency of eating at home

Respondents were asked how often, in the last seven days, they had eaten breakfast, lunch, and their main evening meal at home. As shown in Figure 2.1, 63% of respondents ate breakfast and 68% ate a main evening meal at home every day. The picture was somewhat more mixed for lunch, with a third (30%) eating lunch at home every day, followed by 21% who said they ate lunch at home twice in the last week. Taking the average (mean) number of times respondents ate each of these three meals at home, the highest figure was for the main evening meal (6.2 times) followed by breakfast (5.7 times) and lunch (4.0 times).

2.1 Frequency of eating at home (Wave 2)

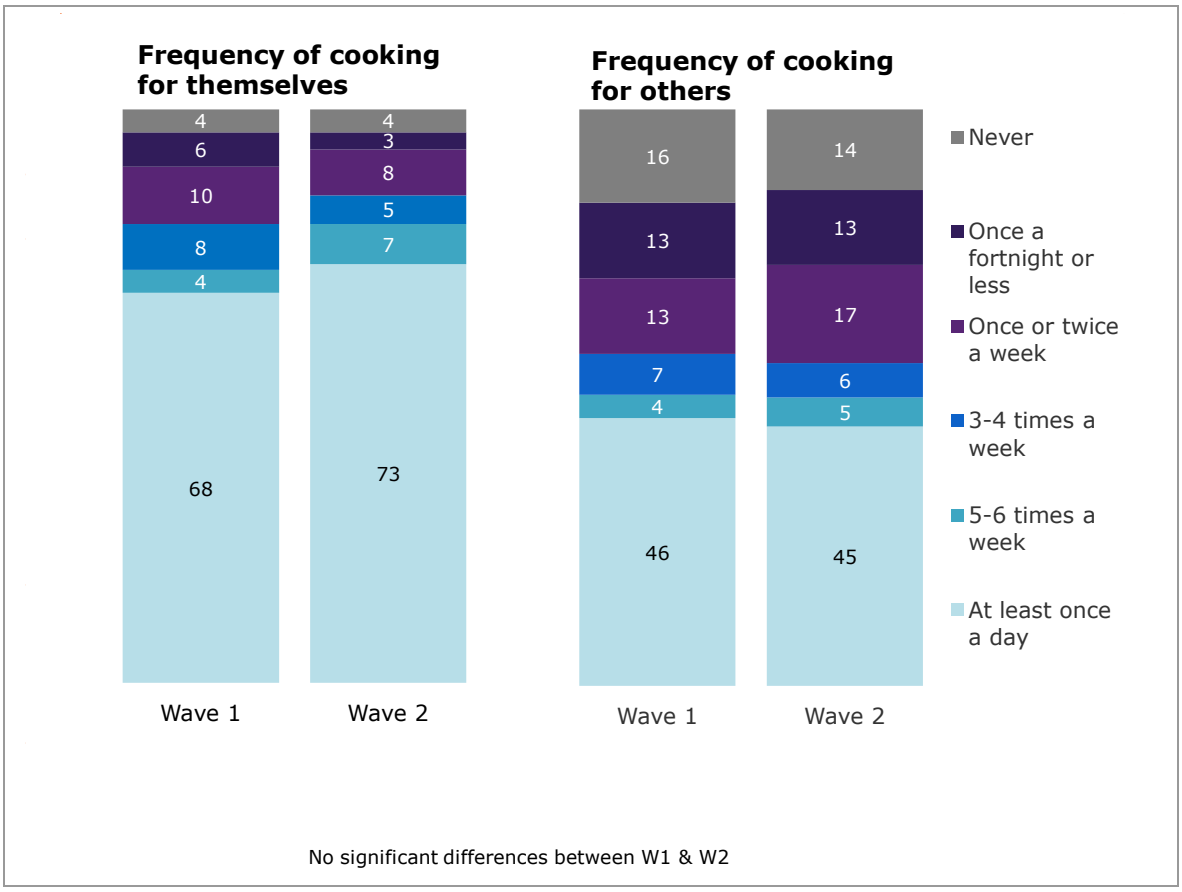


Source: Q2_7A/B/C In the last 7 days, that is since last ..., on how many days out of that seven did you eat BREAKFAST/LUNCH/MAIN EVENING MEAL AT HOME?
Base: All NI respondents - Wave 2 (504)

2.1.2 Cooking patterns

In Wave 2, 80% of respondents reported cooking and preparing food for themselves at least 5 times a week; this is an increase compared to Wave 1 (72%). Unchanged from Wave 1, half (50%) of respondents said they cooked and prepared food for others at least 5 times a week (Figure 2.2).

Figure 2.2 Frequency of cooking meals for self and others (Wave 1 and Wave 2)

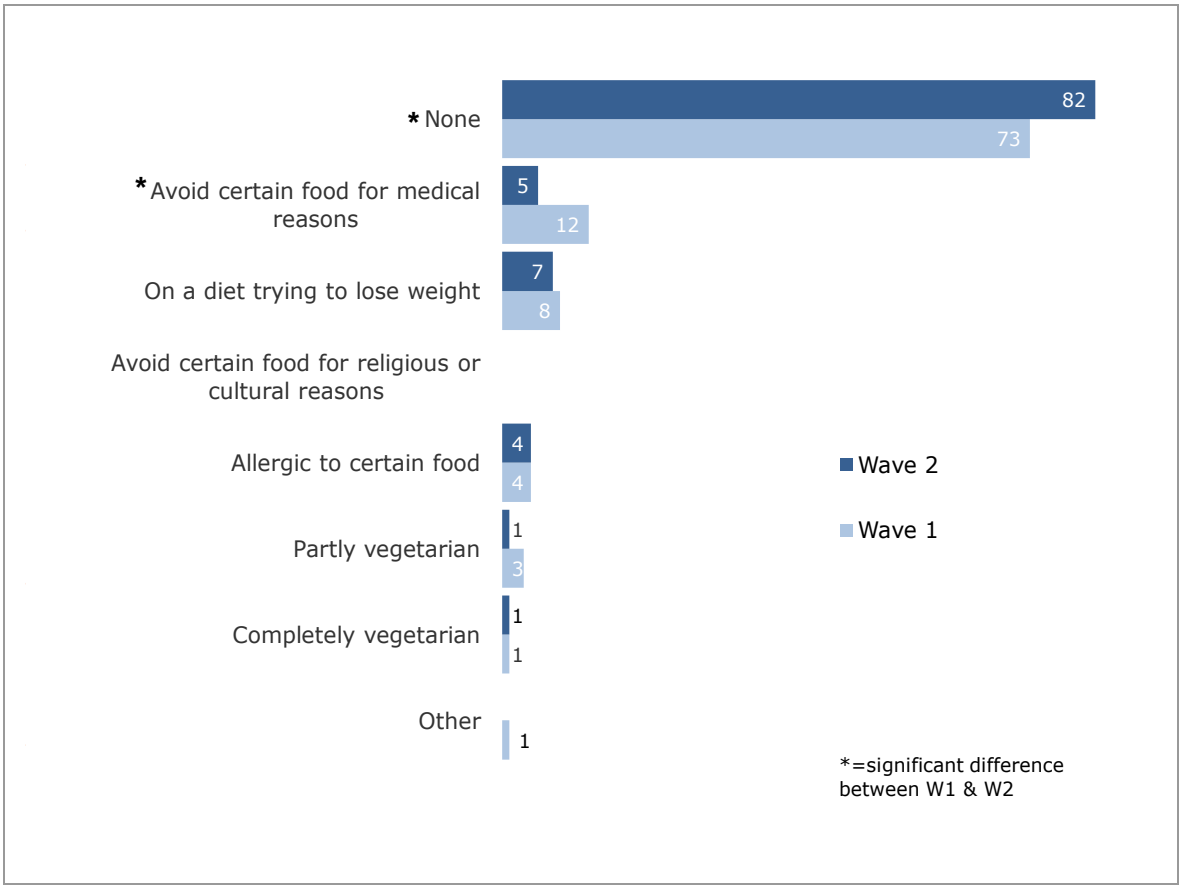


Source: Q2_3 How often do you cook or prepare food for yourself? & Q2.4 How often do you cook or prepare
food for others?
Base: All NI respondents - Wave 1 (506); Wave 2 (504)

2.1.3 Eating restrictions

The large majority of respondents (82%) did not report having any specific dietary requirements; this was higher than in Wave 1 (73%). A small percentage reported avoiding certain foods for medical reasons (5%), and following a weight-reducing diet (7%). The proportion reporting that they avoided food for medical reasons was lower in Wave 2 than in Wave 1 (12%). Other dietary restrictions/requirements such as being allergic to certain foods, vegetarianism and avoiding certain food for religious or cultural reasons were all mentioned by less than 5% of respondents. See Figure 2.3 for further detail.

Figure 2.3 Dietary restrictions (Wave 1 and 2)



Source: Q7.1 Which, if any, of the following applies to you? Please state all that apply.
Base: All NI respondents - Wave 1 (506); All respondents - Wave 2 (504)

2.1.4 Variations in eating and cooking at home among different groups in the population

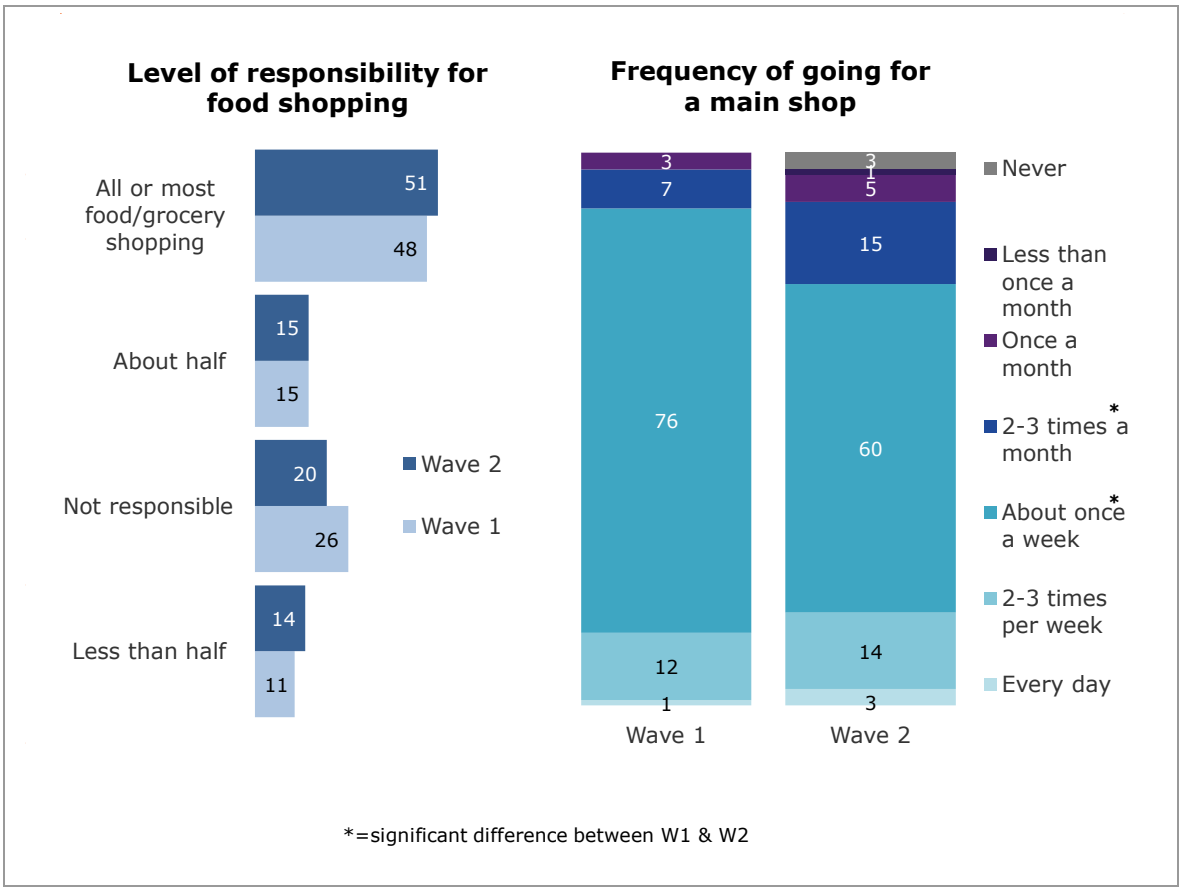
The frequency of eating at home was found to vary by **gender** with women being more likely than men to report regularly eating meals at home, particularly breakfast (eating an average of 6.0 breakfasts at home in the previous 7 days compared with 5.4 breakfasts for men) and lunch (an average of 4.5 lunches at home compared with 3.5 for men). Women were also more likely than men to report preparing food for themselves (89% compared with 70%) and for others (69% compared with 30%) on a regular basis (at least five times a week).

Age was also a significant factor with older respondents being more likely than younger respondents to eat their meals at home. Again this was particularly the case for breakfast and lunch, with breakfast being eaten at home an average of 4.4 days out of the last week for 16-24s, increasing to 6.5 for the over 60s. Lunch was eaten at home an average of 3.7 days in the last week among 16-24s, compared with 5.7 days in the last week among the over 60s.

2.2 Shopping for food

The majority of respondents (80%) had at least some responsibility for household food shopping, with half (51%) of all respondents saying that they were responsible for all or most of it. Sixty per cent of respondents reported that they shopped on a weekly basis. Compared with Wave 1, respondents reported going for a main shop less frequently with a smaller proportion in Wave 2 reporting shopping once a week (down 16 percentage points) and a greater proportion reporting shopping two to three times a month (15% compared with 7%).

Figure 2.4 Responsibility for and frequency of food shopping (Wave 1 and Wave 2)



Source: Q3_1 Thinking about food/ grocery shopping, which of these best describes the level of responsibility you have for the shopping in your household? & Q3_7 How often do you (or someone else) do a main shop for your household food shopping?
Base: One third of total NI sample – Wave 1 (165); All NI respondents - Wave 2 (504)

Respondents were also asked where they did their food shopping. The vast majority (92%) said they shopped in-store (as distinct from on-line) at large supermarkets. The next most popular answer was independent butchers (44%) followed by local/corner shops (32%) and mini supermarkets (27%). As this question was different in Wave 1 no comparison was possible.

Around a third (31%) of respondents relied solely on a large supermarket, while 57% combined their main shop at a large supermarket with top-up shops at local or independent stores or markets. A small proportion (8%) relied solely or mainly on local or independent stores.

2.2.1 Variations in shopping for food among different groups in the population

Clear differences were found by **gender** with women being more likely than men to be responsible for all or most of their household food shopping (71% compared with 29% of men).

There were also variations by **age**, with younger respondents (aged 16-24) much less likely than other age groups to be responsible for any food shopping in the household (50% compared with between 83% and 88% for other age groups).

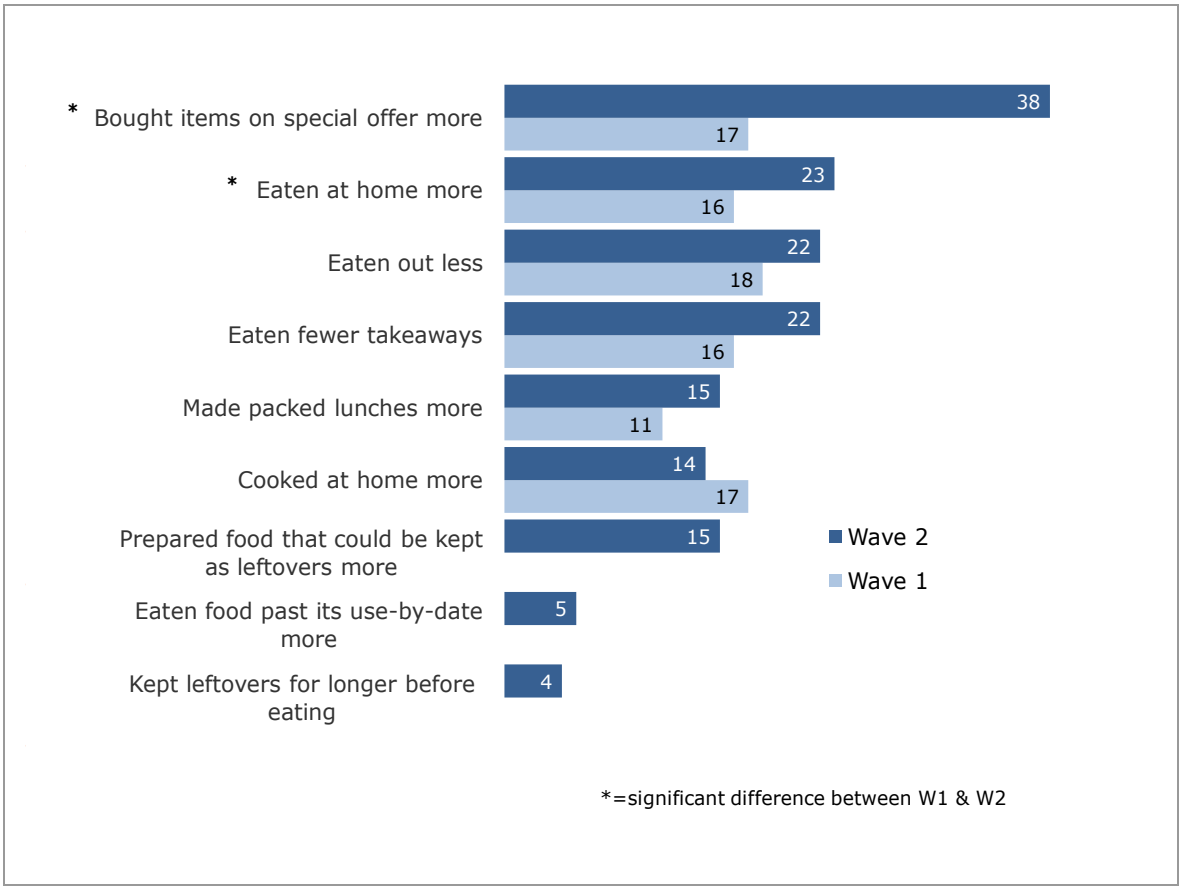
2.3 Changes in buying and eating arrangements for financial reasons

Respondents were asked whether they had made any changes in their eating habits for financial reasons in the last six months. Overall, 62% of respondents in Wave 2 said they had made at least one change (there was no comparable figure for Wave 1 as a result of changes in the question between waves). Thirty-eight per cent reported that they had bought items on special offer more and around a fifth reported eating at home more (23%), eating out less (22%) and eating fewer takeaways (22%).

Compared with Wave 1, a greater proportion of respondents in Wave 2 reported that they were buying items on special offer more (38% compared with 17% at Wave 1) and eating at home more (23% compared with 16% at Wave 1).

A small proportion of respondents reported that over the previous six months they had prepared more food that could be kept as leftovers (15%), eaten more food past its use-by date (5%), and had kept leftovers for longer before eating them (4%). These findings suggest that changes in financial circumstances may have implications for consumer food safety. These questions were not included in Wave 1 so no wave-on-wave comparisons are possible.

Figure 2.5 Changes in buying and eating arrangements for financial reasons (Wave 1 and 2)



Source: Q3_13 Have you made any of these changes in the last 6 months for financial reasons?
Base: One third of total NI sample – Wave 1 (165); All NI respondents - Wave 2 (504)

2.3.1 Variations by population group in changes in buying and eating

Differences were found by age. Respondents aged 16-24 were more likely to report having made at least one change to their eating arrangements for financial reasons in the last six months compared with respondents aged 60 and over (62% compared with 34%). There were no significant differences when comparing household income and gender.

2.4 Comparisons between Northern Ireland and the rest of the UK

There were some differences in reported eating, cooking and shopping habits by country. As shown in Table 2.1 respondents in Northern Ireland were more likely to report cooking or preparing food for themselves at least once a day (73%) than those living in England (60%) and Scotland (61%). However, there were no significant differences observed in terms of the frequency of cooking/preparing food for others.

Table 2.1 Frequency of cooking/preparing food, by country (Wave 2)

	Northern Ireland	England	Scotland
Cook/prepare food for self at least once a day	*73%^{ES}*	*60%*	*61%*
Cook/prepare food for others at least once a day	*45%^{E}*	*37%*	*39%*
Base	*(504)*	*(2116)*	*(507)*

Source: Q2_3 How often do you cook or prepare food for yourself? & Q2_4 How often do you cook or prepare food for others?
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

Responsibility for all or most of the food shopping did not vary significantly by country.

Across all countries, between 91-96% of respondents reported shopping at large supermarkets (no significant differences between countries were found, Table 2.2). However, respondents in Northern Ireland were more likely to shop at independent butchers than those in England (44% compared with 31%). Respondents in Northern Ireland were also more likely than respondents in England, Wales or Scotland to report shopping for food in a garage forecourt (22% compared to between 2-4%). Conversely, respondents in England and Wales were more likely than respondents in Northern Ireland to shop at mini supermarkets (34% and 44% compared with 27% respectively) and at markets (23% and 22% compared with 9%).

Table 2.2 Where people shop for food, by country (Wave 2)

	Northern Ireland	England	Wales	Scotland
Large supermarket	*92%*	*95%*	*91%*	*96%*^{NI}
Independent butcher	*44%*^{E}	*31%*	*37%*	*37%*
Mini supermarket e.g. Tesco Metro	*27%*	*34%*^{NI}	*44%*^{NI}	*21%*
Local/corner shop (including newsagents)	*32%*^{S}	*30%*	*31%*	*23%*
Market (including stalls or farmer's markets)	*9%*	*23%*^{NI}	*22%*^{NI}	*6%*
Independent greengrocer	*18%*^{S}	*18%*	*34%*^{NI}	*10%*
Independent fishmonger	*5%*	*8%*	*11%*	*18%*^{NI}
Home delivery – from a supermarket	*4%*	*10%*^{NI}	*9%*	*8%*^{NI}
Farm	*3%*	*9%*^{NI}	*8%*	*6%*
Garage forecourt	*22%*^{EWS}	*4%*	*2%*	*2%*
Other shop	*1%*	*3%*^{NI}	*1%*	*3%*
Base	*(504)*	*(2116)*	*(104)*	*(507)*

Source: Q3_3 Where do you/ does your household shop for food?
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

The frequency of shopping for food was similar across the different countries (Table 2.3). The only significant differences observed were that respondents living in Northern Ireland were less likely to shop two or more times a week than respondents in England and Scotland and were less likely than respondents in England to shop every day.

Table 2.3 Frequency of shopping for food, by country (Wave 2)

	Northern Ireland	England	Scotland
Every day	*1%*	*3%*^{NI}	*3%*
2-3 times per week	*14%*	*19%*^{NI}	*21%*^{NI}
Base	*(504)*	*(2116)*	*(507)*

Source: Q3_7 How often do you (or someone else) do a main shop for your household food shopping?
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

In terms of changes respondents have made, due to financial reasons, in buying and consuming food in the past six months, respondents living in Northern Ireland were similar to those living in England and Wales (Table 2.4) but were more likely to have made changes compared to Scotland with a greater proportion of reporting that they:

- Bought items that were on special offer more
- Eaten at home more
- Eaten fewer takeaways
- Prepared food that could be kept as leftovers more
- Cooked at home more.

Table 2.4 Changes in buying and eating arrangements for financial reasons, by country (Wave 2)

	Northern Ireland	England	Scotland
Bought items that were on special offer more	*38%[S]*	*38%*	*28%*
Eaten at home more	*23%[S]*	*25%*	*16%*
Eaten fewer takeaways	*22%[S]*	*21%*	*15%*
Prepared food that could be kept as leftovers more	*15%[S]*	*14%*	*9%*
Cooked at home more	*14%[S]*	*16%*	*8%*
None of these	*38%*	*38%*	*51%[NI]*
Base	*(504)*	*(2116)*	*(507)*

Source: Q3_13 Have you made any of these changes in the last 6 months for financial reasons?
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

3. Food safety in the home

This chapter focuses on reported food safety practices in the home, how these practices compare with FSA recommended practice (RP), and whether there have been any significant changes since Wave 1.

Summary

Food safety practices
Overall, there was substantial variation in the extent to which reported food safety practices in the home reflected Agency recommended practices:

- Cleaning
  - -81% of respondents said they wiped down their kitchen surfaces at least once a day and 36% changed their tea towels at least once a day.
  - - 81% of respondents said they always washed their hands before starting to prepare or cook food, and the same proportion (79%) reported always washing their hands immediately after handling raw meat, poultry or fish.
- Chilling
  - - 36% of respondents reported that they check their fridge temperature and just over half (55%) reported that the fridge temperature should be between 0 and 5°C.
- Cross-contamination
  - - 70% said they store raw meat and poultry on the bottom shelf of the fridge.
  - - The majority of respondents (78%) always kept certain types of food in a specific part of the fridge and of these 78% reported that this was to stop cross-contamination.
  - -39% of respondents reported they never wash raw meat or poultry
  - -26% of respondents reported they never wash raw fish or seafood
- Cooking
  - -77% of respondents reported always cooking food till steaming hot.
  - -The large majority of respondents reported that they never ate poultry (93%) or burgers and sausages (86%) if the meat was pink or had pink or red juices.
  - - 86% said they would only re-heat food once and a small group of respondents (5%) said they would re-heat food twice or more.
- Whether food is safe to eat
  - - Between 26% and 44% of respondents, depending on food type, reported that they would use the use-by date as a method of telling if meat, fish, milk/yogurt, fish or cheese were safe to eat.
  - - The most commonly reported method was ‘how it smells’. For example 70% of respondents cited using how it smells for milk and yogurt. For cheese, the most common method was ‘how it looks’, cited by 71%.

-Two thirds of respondents (65%) thought that the use-by date was the best indicator of whether a food is safe to eat, 80% said they always check the use-by date before buying food and 72% said they always check it before cooking food.

- 84% reported that they would not eat leftover food more than two days after it had been cooked.

-The most common sources of information on food safety reported were family and friends (36%) and product packaging (32%). Respondents were most likely to report that they would look for future sources of information on an Internet search engine (42%).

Comparisons with the rest of the UK

- Respondents in Northern Ireland were more likely than those in England to say they never store open tins in the fridge (77%compared with 69%), eat red meat if it is pink or has pink or red juices (61% compared with 45%), or eat burgers/sausages if the meat is pink or has pink or red juices (86% compared with 79%).
- Respondents in Northern Ireland were more likely than those in England and Wales to say they never wash raw meat or poultry (39% compared with 32% in England and 25% in Wales).
- Those in Northern Ireland were less likely than those in Scotland to say they always wash vegetables which are going to be eaten raw (64% compared with 73%) or cooked (59% compared with 69%).

3.1 Background

Promoting food safety and protecting public health are central strategic objectives of the Food Standards Agency. Detailed understanding of the attitudes and practices of individuals in relation to food safety and the identification of any groups that are less likely to follow recommended practice helps the FSA to measure progress towards some of its strategic objectives and provide evidence for its strategy to reduce foodborne disease. To this end initiatives have been introduced to improve food safety and hygiene from 'farm to fork'. With reference to food safety in the home, the FSA is committed to "ensuring that consumers better understand how to prepare and store food safely and more consumers follow best practice as a matter of course" (FSA, 2011).

Food preparation in the home is recognised as a critical step in the food chain and the FSA promotes the '4 Cs' principle (Cleanliness, Cooking, Chilling and Cross Contamination) of good food hygiene which is aimed at reducing and preventing cases of domestic foodborne illness. Agency recommendations surrounding the '4Cs' are outlined below and where relevant in the following sections.

Principles of good food hygiene – the 4 C's

Cleanliness

- Prevent harmful bacteria from spreading by observing good personal hygiene.
- Wash hands after using the loo, after handling raw food, and before touching food which is ready to eat.
- Do not handle or prepare food if you have had a stomach upset, have sores or cuts or weeping eye/ear infections.

Cooking

- Cook food thoroughly, especially meat and poultry.
- Make sure it is piping hot before serving.
- If you have to reheat food, make it piping hot all the way through and only reheat it once.

Chilling

- Keep foods at the right temperature to slow down or stop bacterial growth.
- Look at the label on foods to see how they should be stored.
- Store perishable foods at 0-5 degrees centigrade.

Cross Contamination

- Cross contamination, or the transfer of bacteria from raw foods to ready-to-eat foods, can happen by:
- Using the same chopping board to prepare raw and ready-to-eat foods.
- Using the same knife for raw and ready-to-eat food.
- Using the same cloth to clean up raw food spills and ready-to-eat food preparation areas.
- Storing raw and ready-to-eat foods together. Always store ready-to-eat foods above raw foods in the refrigerator.

3.2 Domestic food safety practices

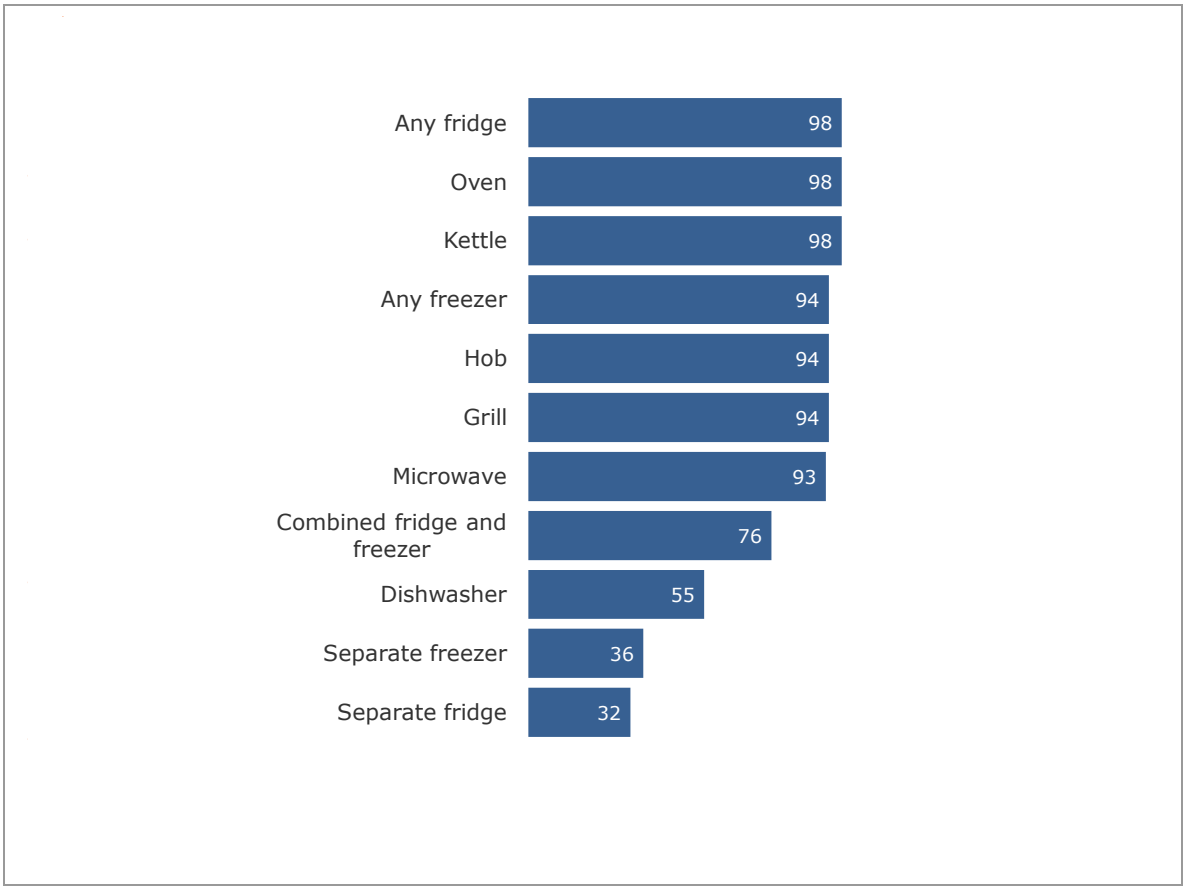
While there is now a fairly large academic literature on consumer **perceptions** of food-related risks (see Smeaton et al. 2010 for an overview), there are few studies that have investigated **actual** food safety practices in the home and even fewer conducted in the UK. GreenStreet Berman recently conducted a comprehensive evidence review of this work for the Food Standards Agency (Greenstreet Berman, 2011) and the Social Science Research Committee (2009) also reviewed the evidence, with a specific focus on the domestic food storage and handling practices of older adults. Whilst few studies explored

in Greenstreet Berman's review can be directly compared with Food and You, and very few have examined all of the practices reported here either in such detail or so comprehensively, the review identified a consistent pattern of divergence in practice from the recommended '4 Cs' (albeit with some variability by area of practice). Areas with the most divergence were cooking (knowledge of recommended temperatures) and chilling practices (knowledge of recommended fridge temperature, use of fridge thermometers, thawing) whilst there was less divergence for practices relating to cleaning and cross-contamination (use of chopping boards and other utensils for cooked meat, storage of meat).

3.2.1 Access to kitchen and appliances

Respondents were asked whether they had access to a separate kitchen ('a separate room in which you can cook') and what kitchen appliances they had in the household (Figure 3.1). The large majority of respondents (97%) had use of a separate kitchen, with nearly all respondents having an oven (98%), kettle (98%), hob (94%), grill (94%), hob (94%) and microwave (93%). Almost all respondents (98%) had a fridge, (either a combined fridge and freezer or a separate fridge). Just over half (55%) reported owning a dishwasher.

Figure 3.1 Access to appliances (Wave 2)



Source: Q4_8C Which of the following appliances do you have in your household?
Base: All NI respondents (504)

3.2.2 Reported practices relating to the '4 Cs' - Cleaning

Wiping surfaces, cleaning sinks and changing tea towels and dishcloths

Respondents were asked about the frequency of their cleaning activities and how often they changed cleaning materials. **The FSA recommends changing tea towels and dishcloths on a regular basis** as they are likely to harbour microbes. Worktops should also be cleaned before food preparation and after contact with raw meat, including poultry, raw eggs or root vegetables contaminated by soil.[14]

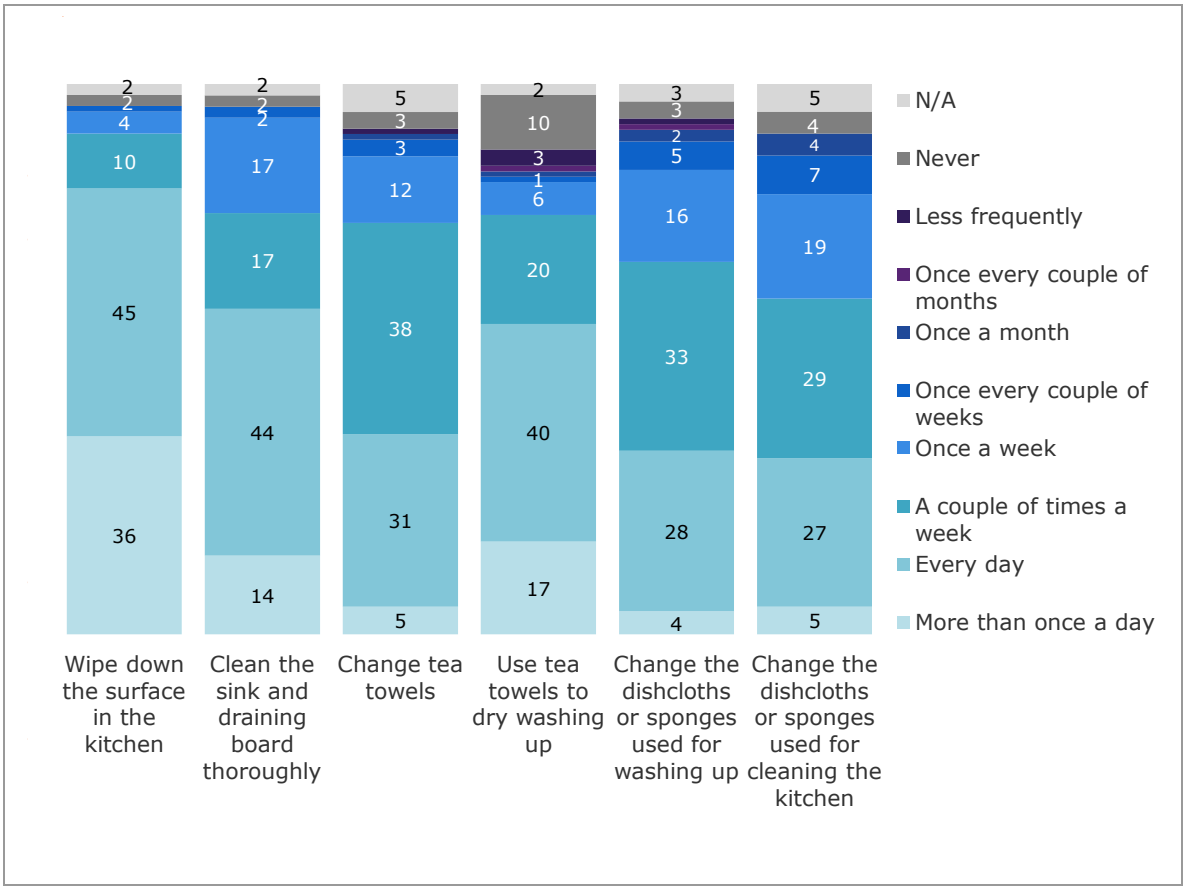
Results are shown in Figure 3.2. Respondents reported that the cleaning practices they engaged in most frequently (at least once a week) were wiping down their kitchen surfaces (94%) and cleaning their sink and draining board thoroughly (92%). Wiping down kitchen surfaces was also the most frequent daily practice, with 36% carrying this out more than once a day and 45% doing it every day.

Eighty-two per cent of respondents said that, at least once a week, they changed the dishcloths or sponges they used for washing up (either washing or replacing them), and 79% reported they changed dishcloths or sponges used for cleaning the kitchen. Over half reported changing dishcloths and sponges at least a couple of times a week (66% for washing up and 61% for cleaning the kitchen). For each of these cleaning practices, only 3 - 4% of respondents reported they never changed dishcloths or sponges.

Over half (57%) of respondents said they used tea towels to dry washing up at least once a day and 10% said they never used tea towels. Eighty-five per cent reported changing their tea towels at least once a week. Tea towels were changed at least once a day by around a third of respondents (36%).

[14] http://www.food.gov.uk/northern-ireland/nutritionni/niyoungpeople/survivorform/dontgetsick/cleaning#.UZOsD6K39I4

Figure 3.2 Cleaning practices in the kitchen (Wave 2)



Source: Q4_1A How often do you...?
Base: All NI respondents (504)

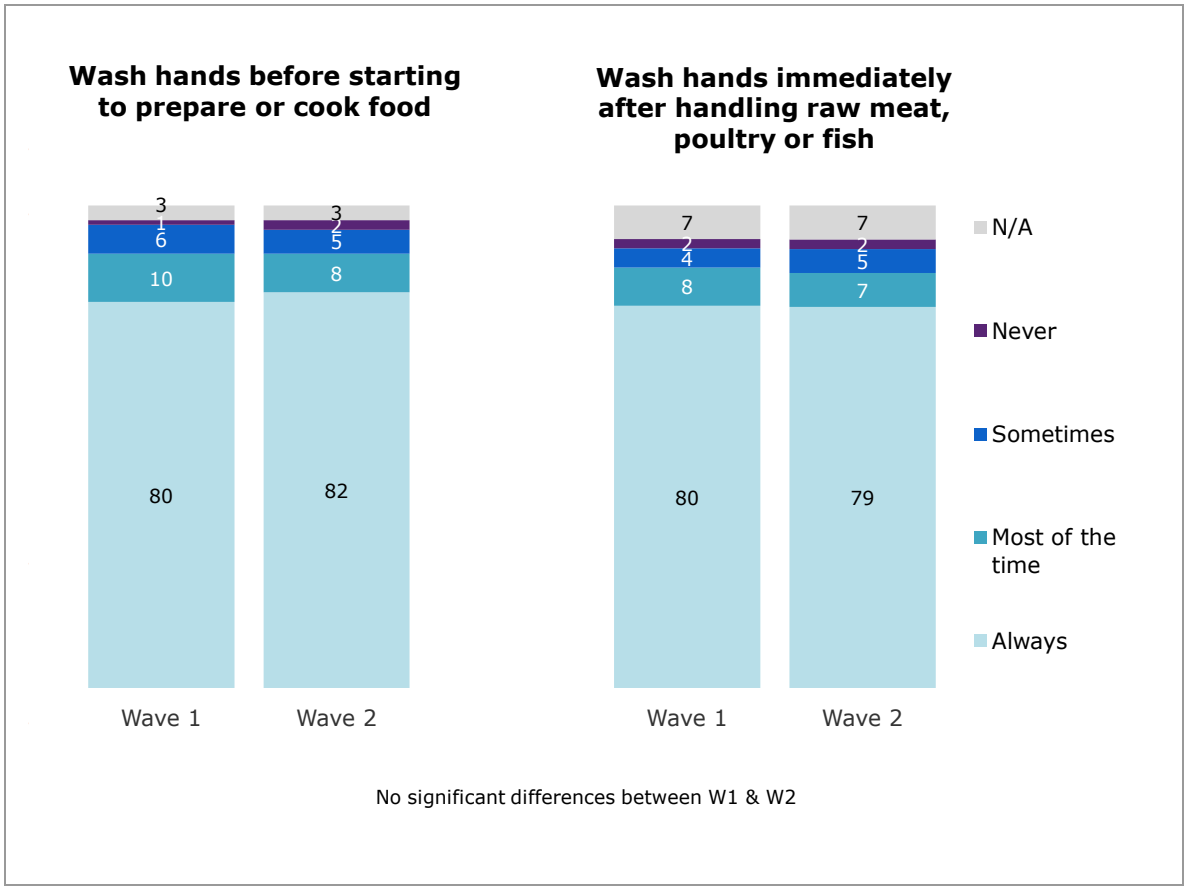
Hand washing

Respondents were asked how frequently they washed their hands before starting to prepare or cook food, and how often they washed their hands immediately after handling raw meat, poultry or fish. **FSA guidance is that hands should be washed thoroughly on a regular basis and in particular before preparing food, after touching raw food (especially meat) and after going to the toilet.**

Overall, 82% of respondents said they always washed their hands before starting to prepare or cook food, with 94% doing this at least some of the time. The similar proportion of respondents (79%) reported always washing their hands immediately after handling raw meat, poultry or fish. Only 2% of respondents said they never washed their hands before preparing or cooking food and 2% said they never washed their hands after handling raw meat, poultry or fish.

There was no significant change in the frequency of hand washing before starting to prepare or cook food, or after handling raw meat, poultry or fish between Wave 1 and Wave 2. Full results are shown in Figure 3.3.

Figure 3.3 Reported frequency of hand washing (Wave 1 and Wave 2)



Source: Q4_1 Thinking about when you are storing, preparing and cooking food, I would like you to tell me whether you do the following things at all when you are in the kitchen and if so how frequently:
Base: All NI respondents – Wave 1 (506); Wave 2 (504)

3.2.3 Reported behaviours relating to the '4 Cs'- Cross-contamination

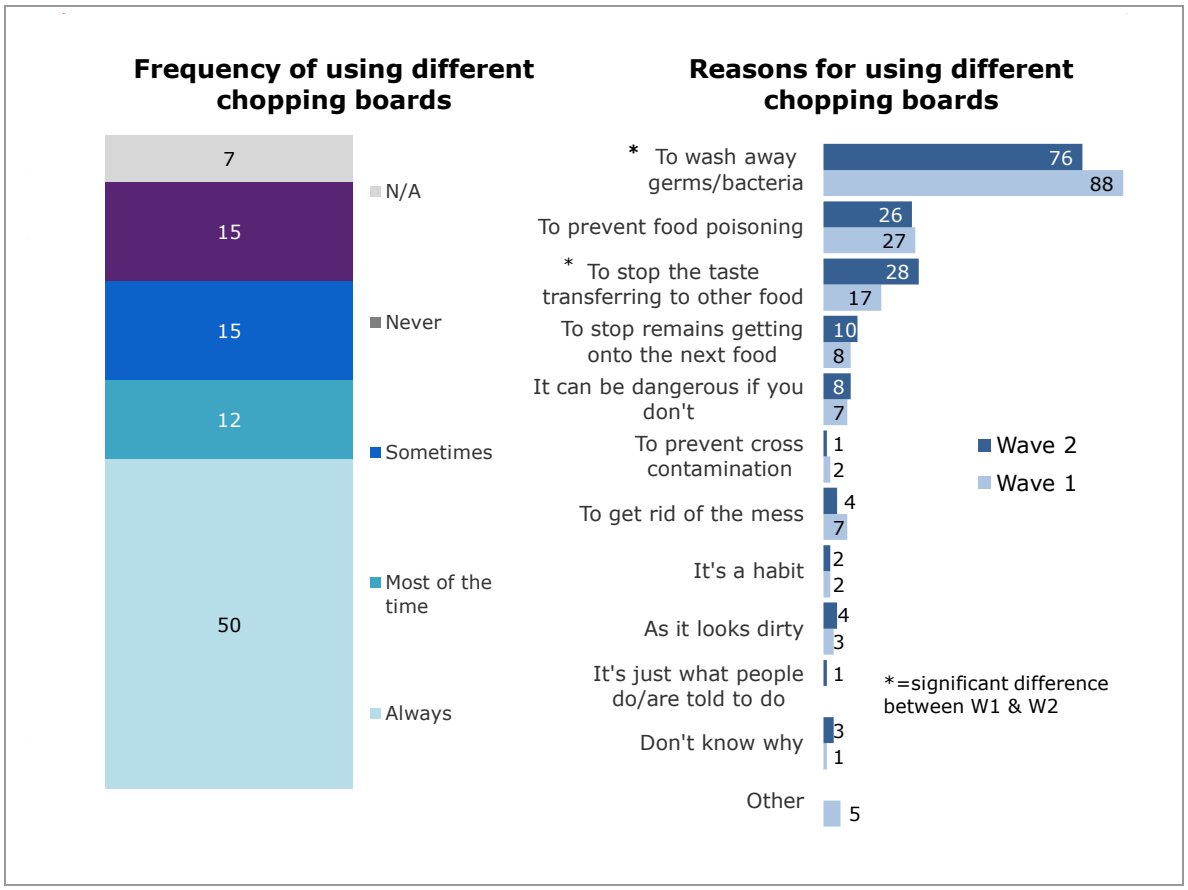
Chopping boards

Respondents were asked whether they used different chopping boards or clean chopping boards for different foods and what they thought the reasons were for doing so after having used it to prepare raw meat, poultry or fish. **The FSA recommends using different chopping boards for raw and ready-to-eat foods, or washing thoroughly in between preparing different foods, to avoid cross-contamination.**

Half of respondents (50%) said they always used different chopping boards for different foods, 77% said they did this at least some of the time and 15% said they never did. Three quarters (76%) of respondents reported that the reason behind washing a chopping board after preparing raw meat, poultry or fish on it, and before using it for other food, was to wash away germs or bacteria (a decrease compared with 88% at Wave 1) and a quarter (26%) said it was to prevent food poisoning. Twenty-eight per cent of respondents

reported that using different chopping boards was to stop the taste of food transferring (an increase compared with 17% at Wave 1). See Figure 3.4 for more detail.

Figure 3.3 Frequency of and reasons for using different chopping boards (Wave 1 and Wave 2)



Source: Q4_1 Thinking about when you are storing, preparing and cooking food, I would like you to tell me whether you do the following things at all when you are in the kitchen and if so how frequently & Q4_3 After using a chopping board to prepare raw meat, poultry or fish people might wash the board before using it again for other foods or use a clean board. Why do you think they do this?
Base: All NI respondents - Wave 1 (506); Wave 2 (504)

Food storage in the fridge

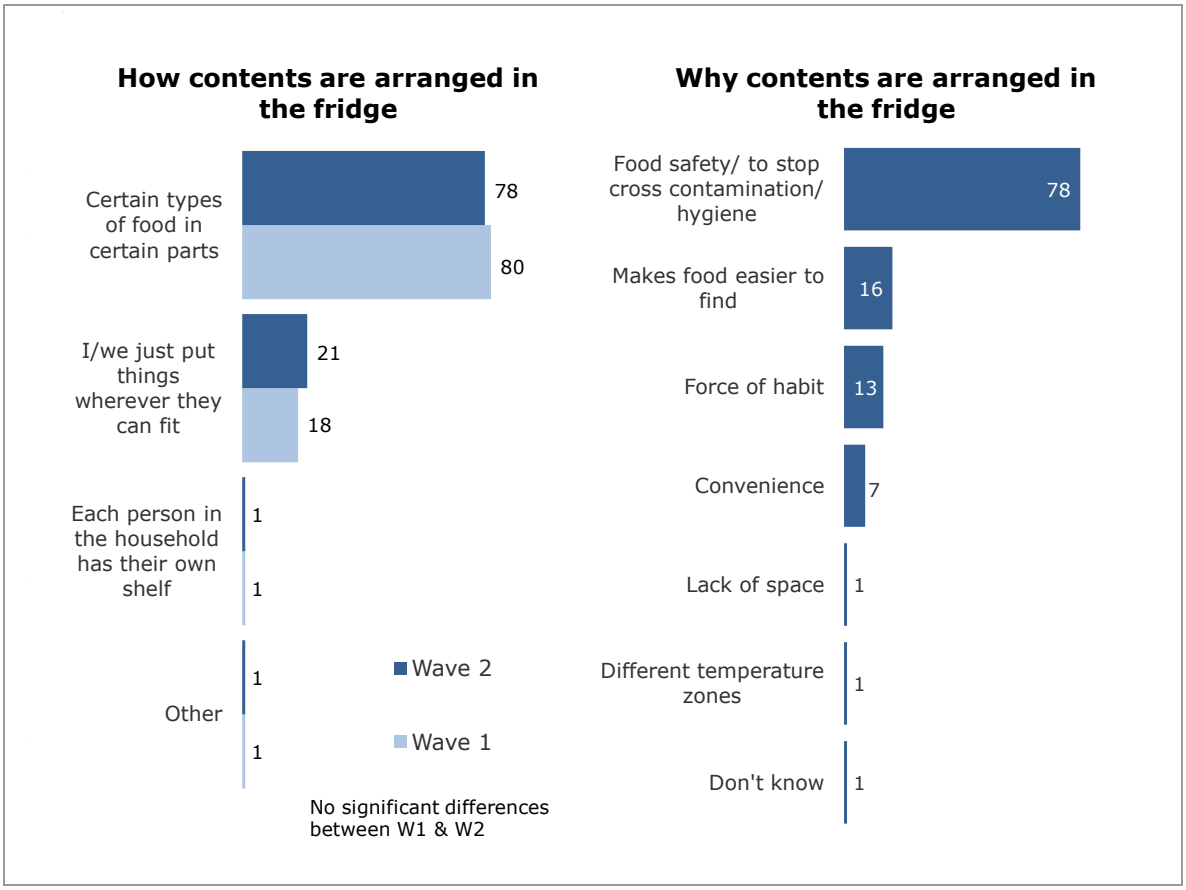
Respondents were asked about how they arranged the contents of their fridge and the reasons behind this, specifically in relation to storing raw meat, poultry and fish. **FSA guidance is to keep raw meat separate from ready-to-eat food and that raw meat and poultry should be stored in sealed containers at the bottom of the fridge, to avoid dripping on other food**. The image below illustrates the FSA's advice on how food should be stored in the fridge[15].

[15] http://www.food.gov.uk/northern-ireland/nutritionni/niyoungpeople/survivorform/dontgetsick/chilling#.UQkirh3HGHc

When asked how they arranged the contents of their fridge, the majority of respondents (78%) said they always kept certain types of food in a specific part of the fridge, whilst a fifth (21%) said they just put things wherever they would fit (Figure 3.5). Of those who said they kept certain foods in certain parts of the fridge, 78% said they did so for reasons of food safety, hygiene or to stop cross contamination. Sixteen per cent of respondents said they did this because it made food easier to find. These results suggest that, of all the respondents who had a fridge in their household, 61% reported practices that were in line with FSA guidance on how food should be stored in the fridge.

There were no significant differences between Wave 1 and Wave 2 in how respondents reported food arrangement in the fridge.

Figure 3.5 How and why contents were arranged in the fridge (Wave 1 and Wave 2)



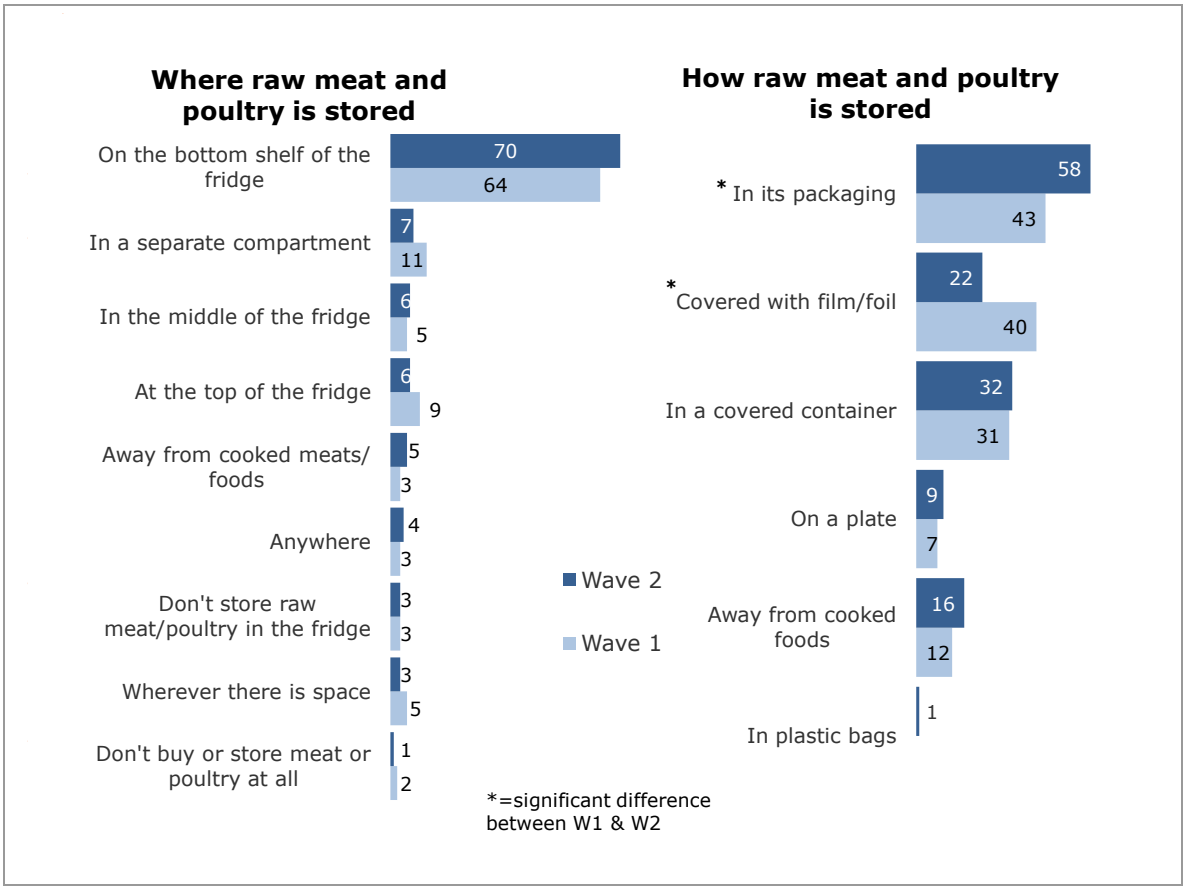
Source: Q4_13 And how do you arrange the contents of your fridge? & Q4_13A Why do you always keep certain types of food in certain parts of the fridge?

Base: Q4_13 - Wave 1-All NI respondents (506); Wave 2 - All NI respondents who have a fridge in their household (494); Q4_13A – All NI respondents who always keep certain types of food in certain parts of the fridge (384)

All respondents who said they had a fridge in their household were asked where they stored raw meat and poultry; 70% said they stored it on the bottom shelf of the fridge, and 12% said they stored it either in the middle or top of the fridge. Respondents who reported storing meat and poultry in their fridge were then asked how they stored it. Fifty-eight per cent said they stored it in its packaging, 22% said they covered it with film/foil and 32% said they stored it in a covered container.

There was an increase between Wave 1 and Wave 2 in the proportion of respondents reporting that they stored raw meat and poultry in its packaging (up 15 percentage points to 58%), and a decrease in the proportion who reported they covered it with film or foil (down 18 percentage points to 22%). Full details are shown in Figure 3.6.

Figure 3.6 Where and how raw meat and poultry were stored (Wave 1 and Wave 2)



Source: Q4_14 Where in the fridge do you store raw meat and poultry? & Q4_15 How do you store raw meat and poultry in the fridge?
Base: Q4_14 All NI respondents Wave 1 (506); All NI respondents who have a fridge in their household (494) & Q4_15 NI respondents who store raw meat and poultry: Wave 1(478); Wave 2 (473)

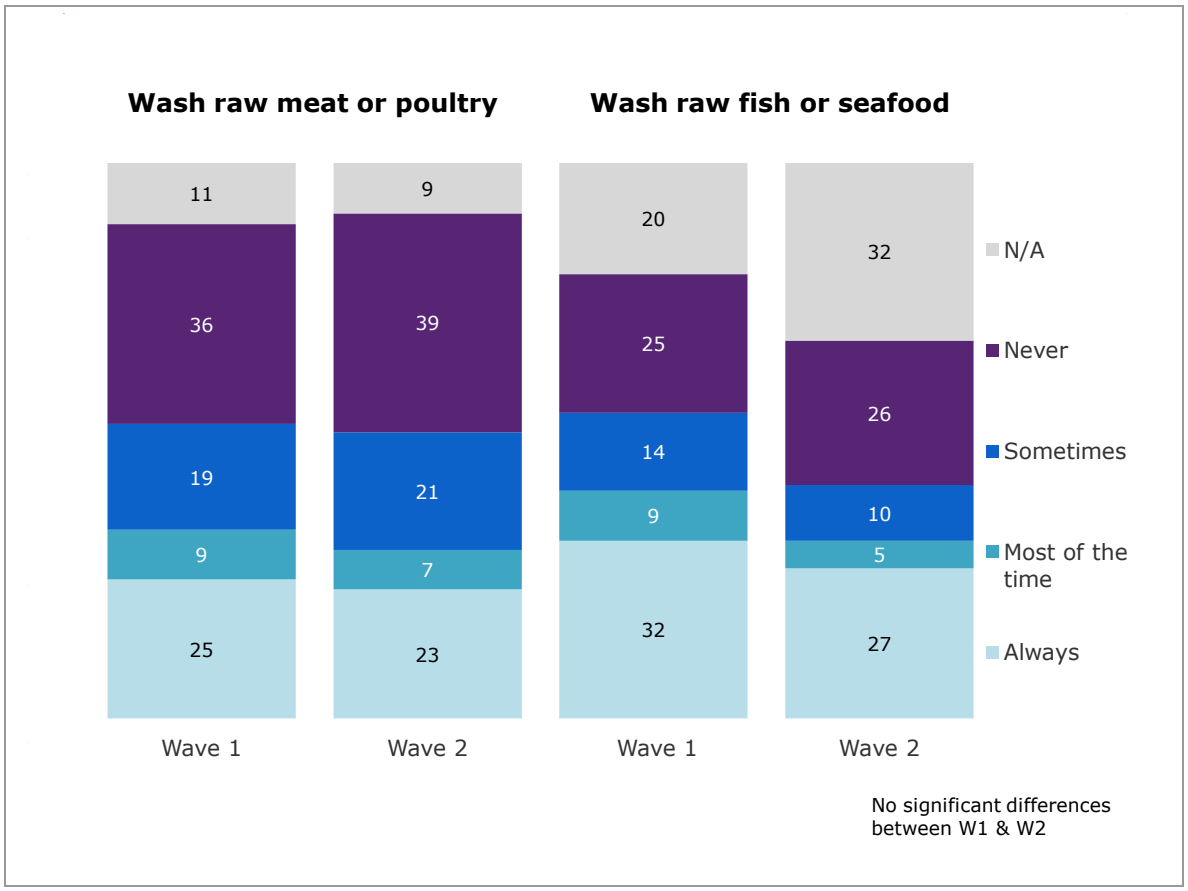
Washing raw meat and fish

Respondents were asked whether they washed raw meat, fish or seafood when preparing and cooking it. **The FSA recommends that meat and fish are not washed because of the risk of cross contamination**.

A quarter (26%) reported that they never washed raw fish or seafood whilst 52% said they did it at least some of the time. This is similar to Wave 1 (53%).

Compared with washing fish and seafood, a higher proportion of respondents reported that they never washed raw meat or poultry (39%). Fifty-two per cent reported they washed raw meat or poultry at least some of the time and 23% said they always washed raw meat or poultry. Results are shown in Figure 3.7.

Figure 3.7 Frequency of washing raw meat, fish or poultry (Wave 1 and Wave 2)



Source: Q4_1 Thinking about when you are storing, preparing and cooking food, I would like you to tell me whether you do the following things at all when you are in the kitchen and if so how frequently
Base: All NI respondents: Wave 1 (506); Wave 2 (504)

Washing fruit and vegetables

In Wave 2, respondents were asked a new series of questions, about whether they washed fruit or vegetables, which were going to be eaten raw or cooked. **FSA guidance is that unless packaging around vegetables says it is 'ready-to-eat', these foods should be washed, peeled or cooked before consumption. Vegetables which are going to be eaten raw should be washed to help minimise the risk of food poisoning (for instance from soil).**

Around half (54%) of respondents reported that they always washed fruit which was going to be eaten raw, while 84% said they did this at least some of the time and 12% said they never did. Respondents were more likely to say they washed vegetables that were going to be eaten raw; two thirds (64%) said that they always did, 89% said they did this at least some of the time and 3% said they never did.

When fruit was going to be cooked, a lower proportion of respondents said they would wash it compared to when it was to be eaten raw. Thirty-eight per cent of respondents said they always washed fruit that was going to be cooked, 64% said they did at least some of the time, while 15% stated that they never did. Respondents were more likely to say that they washed vegetables which were going to be cooked; 59% said they always did, 88% said they did this at least some of the time and 4% said they never did.

3.2.4 Reported behaviours relating to the '4 Cs' - Chilling

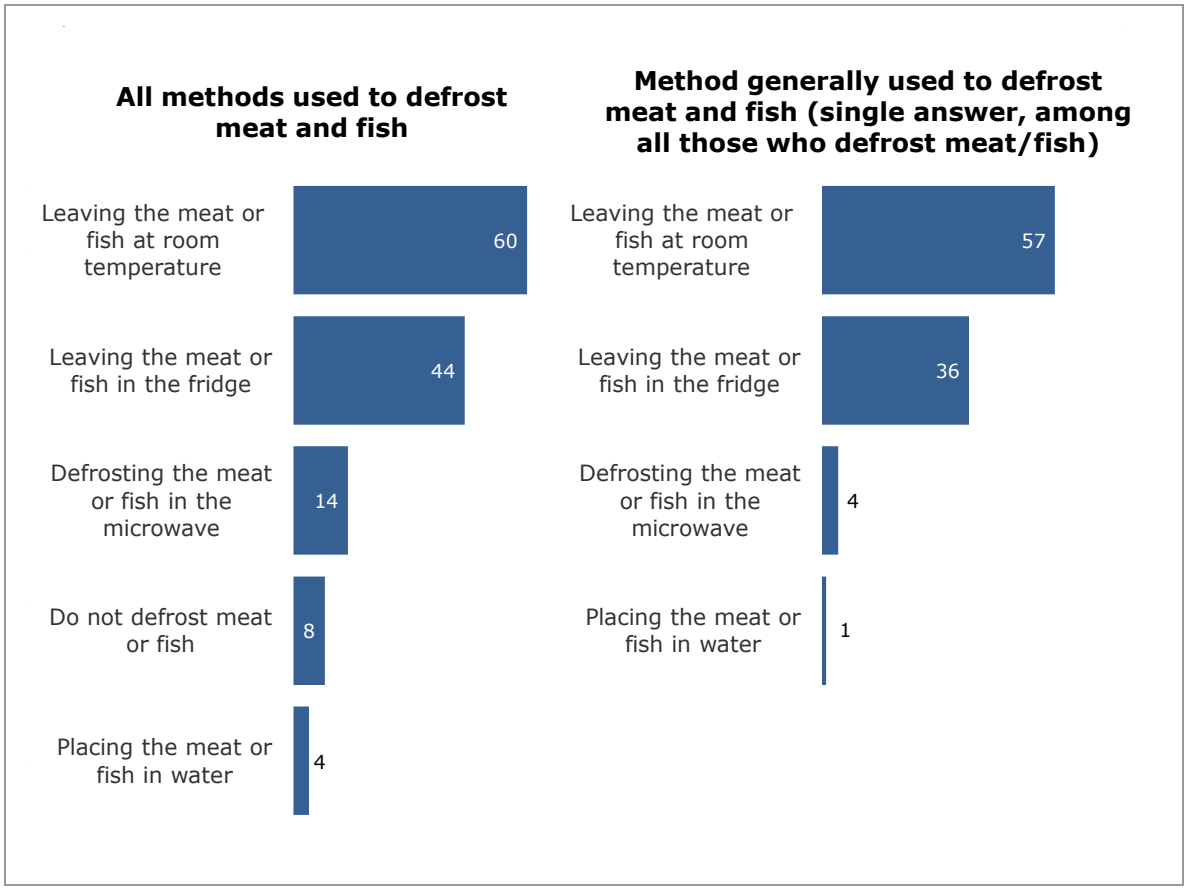
Chilling and defrosting

Respondents were asked about their habits concerning storing open tins in the fridge. The majority of respondents (77%) said they never did this, which is in line with recommended FSA guidance. A fifth (20%) said they did this at least some of the time, and 2% said they always did this. There were no significant differences between Wave 1 and Wave 2 in response to this question.

Respondents were also asked what methods they used to defrost frozen meat or fish. **FSA guidance is to defrost food slowly and safely overnight in the refrigerator or to use a microwave oven (carefully ensuring that the food is fully defrosted before cooking it straight away). The FSA recommends not defrosting food at room temperature as this provides ideal conditions for bacteria to grow.**

When answering the question, respondents could select more than one response. The most frequently given answer was leaving the meat or fish at room temperature (60%). Forty-four per cent of respondents said that they defrosted meat or fish in a refrigerator, and 14% in a microwave, in line with FSA guidelines (Figure 3.8).

Figure 3.8 Defrosting meat and fish (Wave 2)



Source: Q4_1B Which of the following methods do you use to defrost frozen meat or fish? & Q4_1C And which method do you generally use to defrost frozen meat or fish?
Base: Q4_1B All NI respondents (504) & Q4_1C All NI respondents who defrost frozen fish or meat (459)

All respondents who said they did defrost meat or fish were asked which method they generally used. Over half (57%) of respondents said they generally left the meat or fish at room temperature. A third (36%) reported that they generally defrosted it in a refrigerator, and 4% said they generally used a microwave oven, in line with recommended practice.

Checking fridge temperatures

Respondents were asked various questions about their knowledge of appropriate fridge temperatures and how frequently, if at all, they checked their fridge temperature. **The FSA recommends that fridge temperatures be checked regularly and that the temperature is kept between 0-5°C to help stop food poisoning bacteria such as listeria from growing in food.**

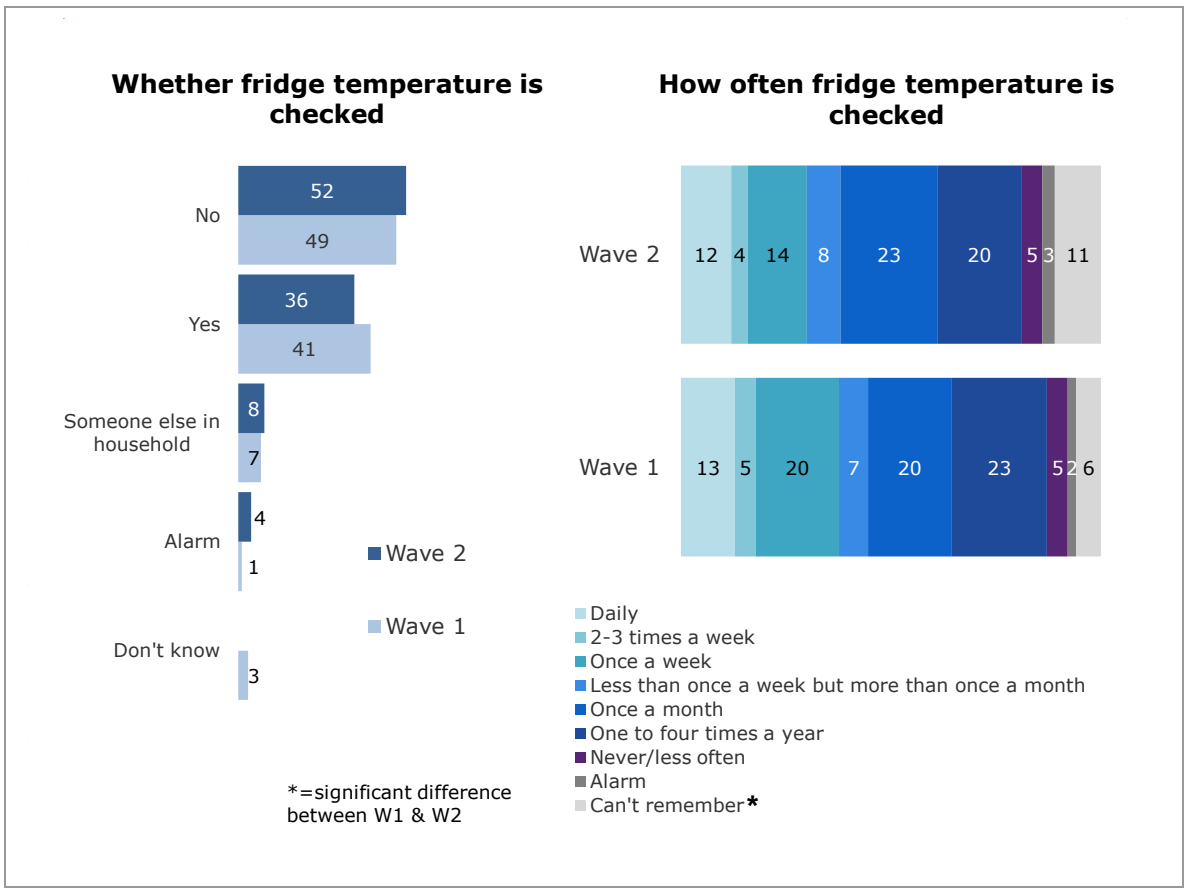
Amongst respondents who had a fridge, 36% said that they did check the temperature, whilst 52% said that they never checked it. A small minority of respondents (4%) said they did not need to check as their fridge had an alarm to indicate if the temperature is too hot

or cold and 8% said someone else in the household checked. Results are shown in Figure 3.9.

Just under a third of all respondents (30%) who checked their fridge temperature did so at least once a week. Twelve per cent said they checked it on a daily basis, and 48% said they checked it once a month or less.

There were no significant differences between Wave 1 and Wave 2 in the proportion who said they checked their fridge temperature. In terms of frequency of checking the temperature, the proportion of people checking the temperature at least once a week was found to have decreased compared to Wave 1, whilst the proportion who said they can't remember had increased.

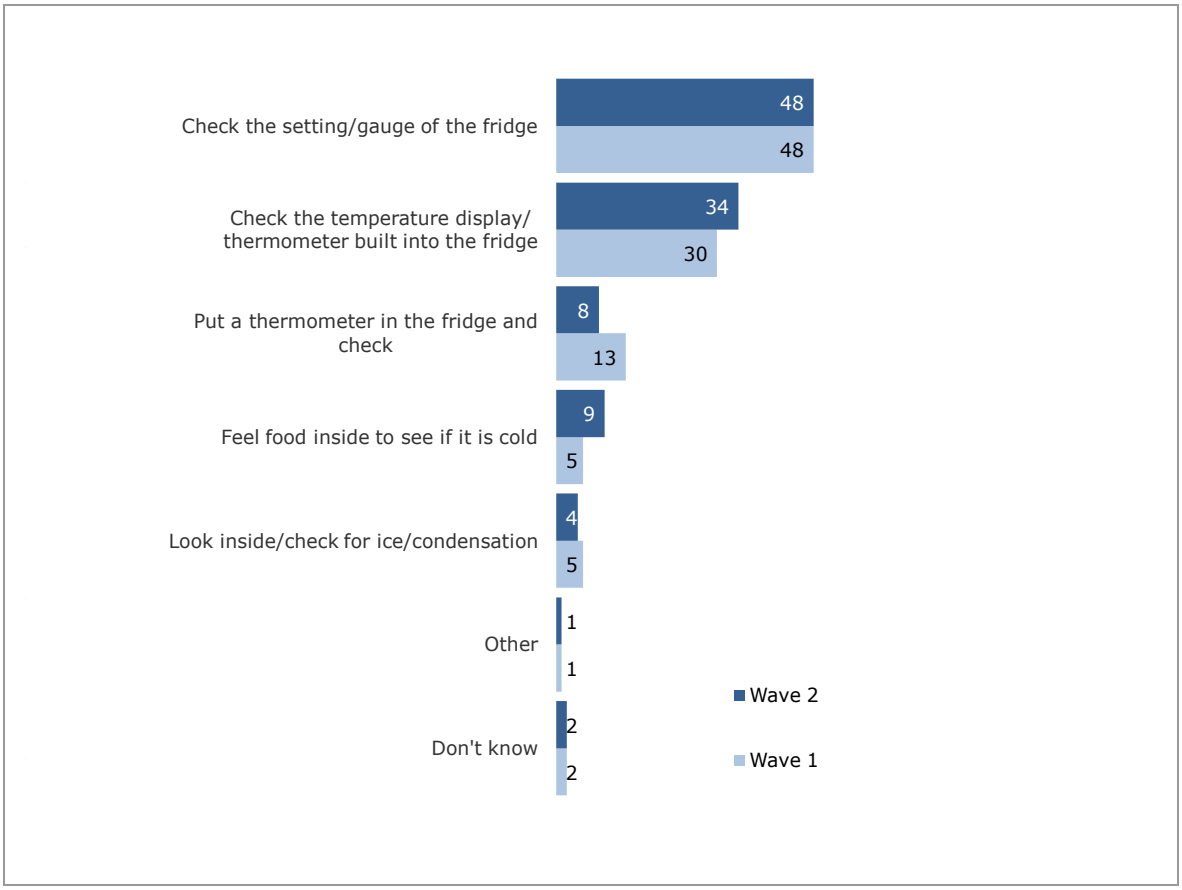
Figure 3.9 Checking fridge temperatures (Wave 1 and Wave 2)



Source: Q4_9 Do you ever check your fridge temperature? & Q4_10 How often do you or another person in your household check the temperature of the fridge?
Base: Q4_9 Wave 1 – All NI respondents (506); Wave 2: All NI respondents who have a fridge in their household (494) & Q4_10 All NI respondents who check their fridge temperature – Wave 1 (242); Wave 2 (215)

Respondents who said they checked their fridge temperature, but did not have an alarm, were asked how they normally checked it. **The use of a thermometer is the recommended method for checking fridge temperature** and 8% of respondents reported using this method. The most common method of checking was to check the setting/gauge of the fridge (48%), followed by looking at the temperature display/thermometer built into the fridge (34%).

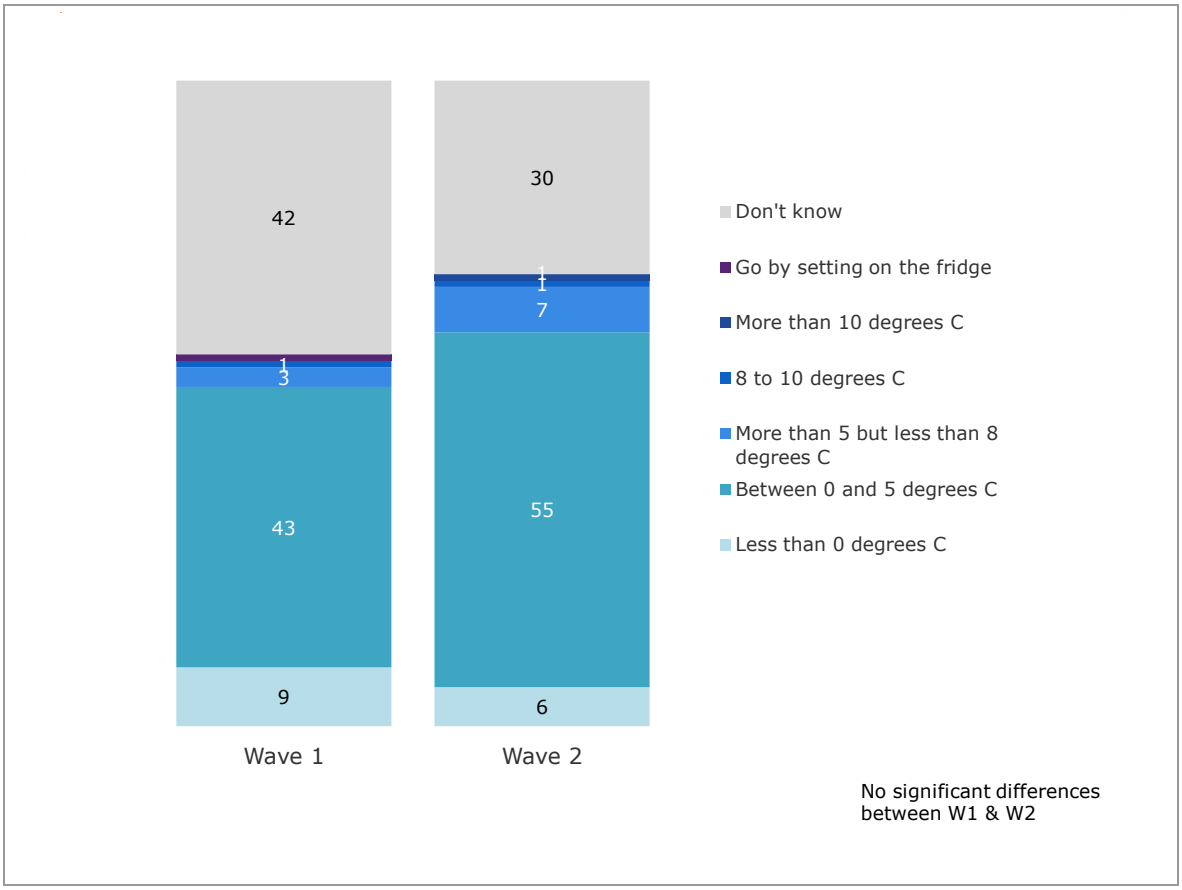
Figure 3.10 How fridge temperature is checked (Wave 1 and Wave 2)



Source: Q4_11 Still thinking about fridge temperatures, can you tell me how you normally check the temperature? &
Base: NI respondents who do not have a fridge alarm- Wave 1 (237); Wave 2 (209)

When all respondents were asked what they thought the temperature inside a fridge should be, just over half (55%) said between 0 and 5°C, which is in line with the FSA's guidelines. The proportion that knew fridge temperature should be between 0 and 5°C increased from 43% in Wave 1 to 55% in Wave 2. Almost a third (30%) said they did not know and a range of other answers was given. The full results are shown in Figure 3.11.

Figure 3.11 Knowledge of what fridge temperature should be (Wave 1 and Wave 2)



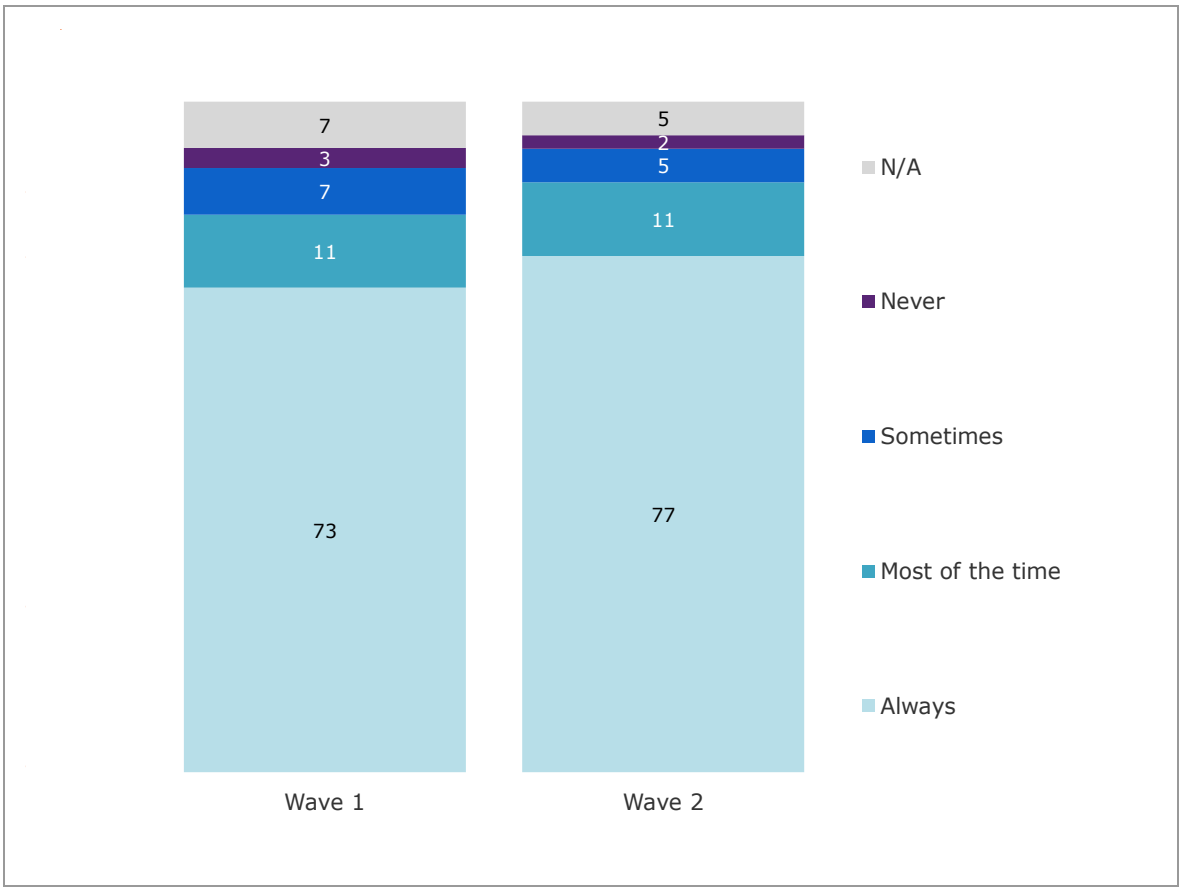
Source:Q4_12 What do you think the temperature inside your fridge should be?
Base: Wave 1 All NI respondents (506); Wave 2 All NI respondents with a fridge in their household (494)

3.2.5 Reported behaviours relating to the '4 Cs' – Cooking

Cooking food until steaming hot

The FSA recommends that all food is cooked to steaming hot. In Wave 2 77% of respondents reported that they always did this, with only 2% of respondents reporting that they never did this. These figures are similar to Wave 1, as shown in Figure 3.12.

Figure 3.12 Frequency of cooking food until it is steaming hot (Wave 1 and Wave 2)



Source: Q4_1 Thinking about when you are storing, preparing and cooking food, I would like you to tell me whether you do the following things at all when you are in the kitchen and if so how frequently?
Base: Q4_1 All NI respondents- Wave 1(506); Wave 2 (504)

Cooking meat, poultry and sausages or burgers

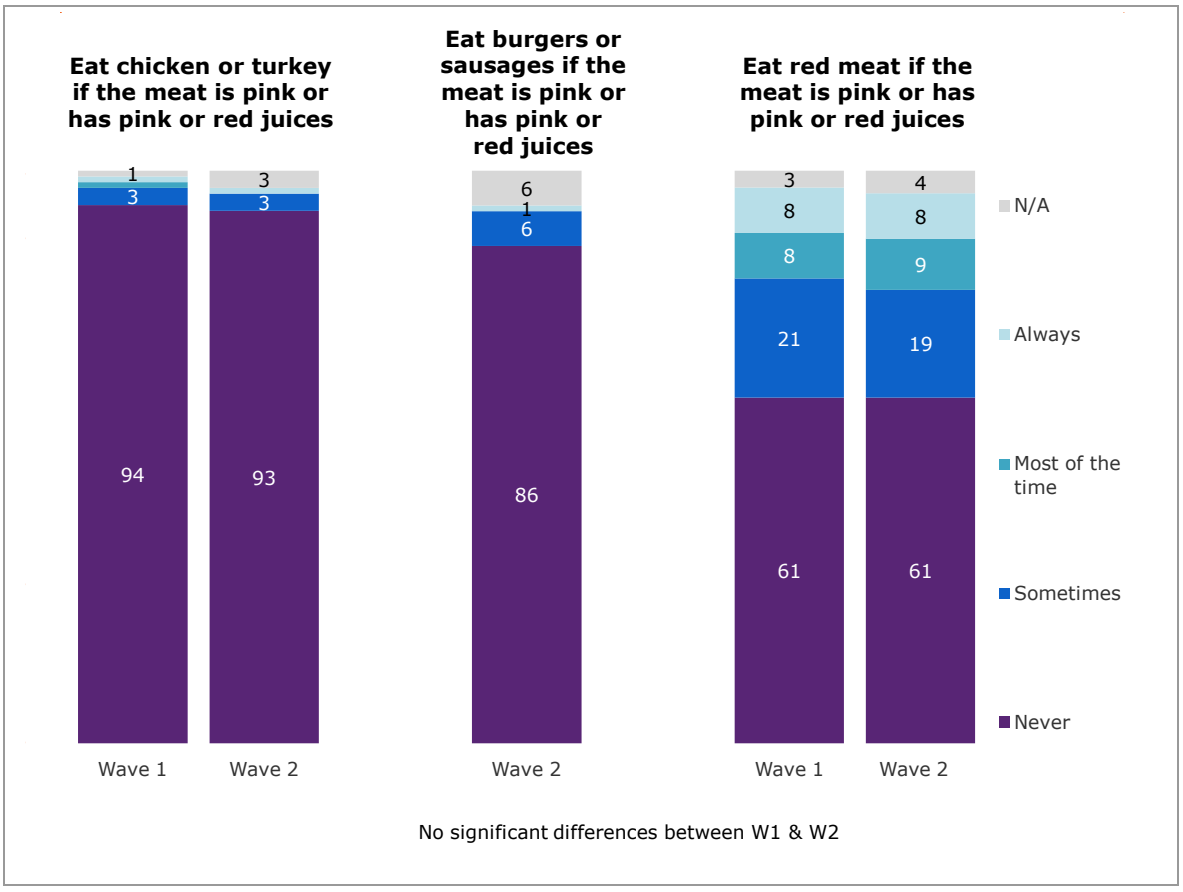
Respondents were asked how often they ate meat when it was pink or had pink/red juices. **The FSA guidance is to ensure that poultry, pork, burgers, sausages and kebabs are properly cooked all the way through, that is, they are not pink and have no pink/red juices. Steaks and other whole cuts of beef and lamb may be eaten rare, as long as they have been properly cooked and sealed on the outside[16].**

Ninety-three per cent of respondents reported that they never ate chicken or turkey if the meat was pink or had pink/red juices. Only 1% of respondents said they always ate

[16] Advice about steak and beef is fine for the majority, but the FSA advises at risk groups (especially pregnant mothers, the very elderly and those who are immuno-compromised) not to eat rare lamb owing to risk of toxoplasmosis.

chicken or turkey if the meat was pink or had pink/red juices whilst another 3% said that they sometimes did. Eighty-six per cent of respondents said they never ate burgers of sausages if the meat was pink or had pink/red juices. One per cent of respondents said that they always, and 6% said they sometimes, ate burgers or sausages if the meat was pink or had pink/red juices and 6%. For red meat, 61% reported they never ate red meat if it was pink or had pink/red juices, and 8% reported they always did. Nineteen per cent said they sometimes did and 9% said they did most of the time. All these proportions are similar to Wave 1 (Figure 3.13).

Figure 3.13 Frequency of eating chicken or turkey and burgers or sausages or red meat if the meat is pink or has pink/red juices (Wave 1 and Wave 2)



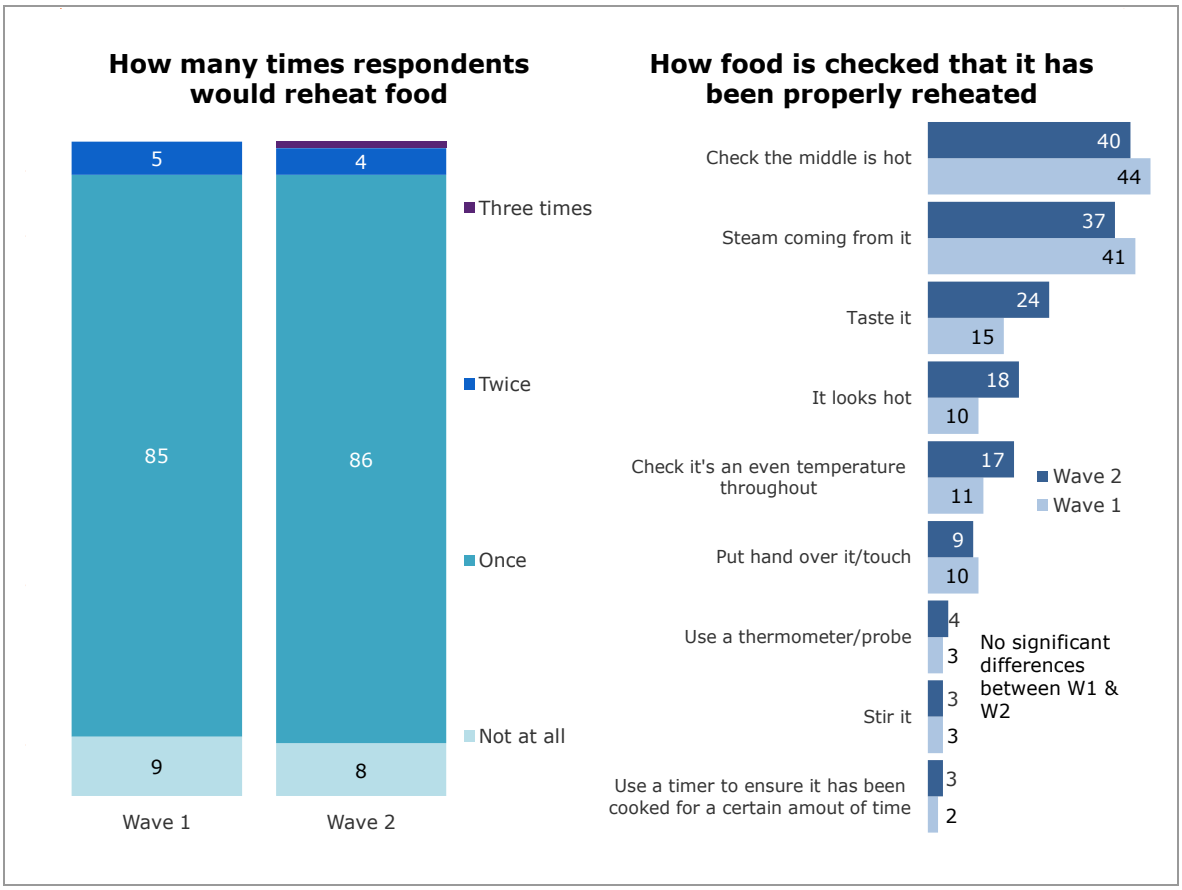
Source: Q4_1 Thinking about when you are storing, preparing and cooking food, I would like you to tell me whether you do the following things at all when you are in the kitchen and if so how frequently?
Base: Q4_1 All NI respondents- Wave 1(506); Wave 2 (504)

Reheating

All respondents who reported they ate leftovers were asked how many times they would consider re-heating food, and how they could tell that food had been re-heated properly. **FSA guidance is not to reheat leftovers more than once and to cook the leftovers until they are steaming hot throughout.** Eighty-six per cent said that they would only re-heat food once, while 8% said that they would not re-heat food at all. A small group of respondents (4%) said they would re-heat food twice and 1% said they would reheat food three times (Figure 3.14).

Checking the middle is hot was the most common method (40%) reported by respondents to tell if food had been reheated properly followed by seeing steam coming out of it (37%). A small minority of respondents (2%) said they did not check to see if food had been re-heated properly. Compared to Wave 1 an increase was seen in the proportion of respondents reporting they checked to see if food had been properly reheated by tasting it (up 9 percentage points), seeing if it looks hot (up 8 percentage points) and checking if it's an even temperature throughout (up 6 percentage points).

Figure 3.14 Reheating food (Wave 1 and Wave 2)



Source: Q4_25 How many times would you consider re-heating food after it was cooked for the first time? & Q4_26 And how do you usually tell that food has been re-heated properly?
Base: Q4_25 All NI respondents who have leftovers: Wave 1(480); Wave 2(444) & Q2_46 All NI respondents who have leftovers and would consider re-heating: Wave 1(437); Wave 2(409).

3.2.6 Methods used to tell whether food is safe to eat

Respondents were asked a series of questions about:

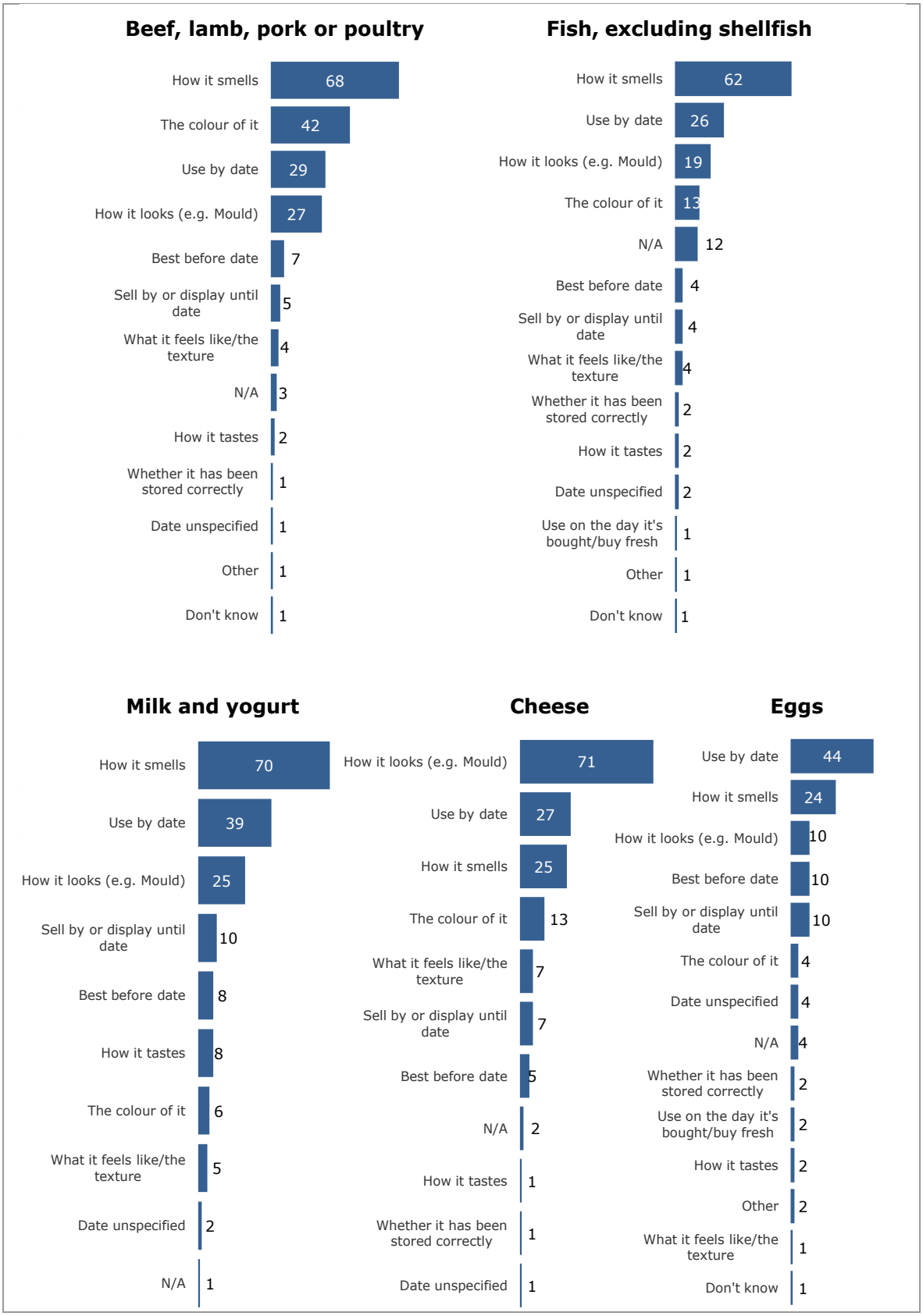
- how they could tell if food was safe to eat or use in cooking;
- what they thought was the best indicator of whether food was safe to eat; and,
- whether they checked use-by dates when buying and using food.

FSA guidance is that even if the food looks and smells fine, the use-by date is the best indicator of whether food is safe to eat.

How food smelled was one of the most common ways respondents said they used to tell whether a food was safe to eat, and was the most commonly-used method for meat, fish and, milk/yoghurt. For example just under three quarters (70%) of respondents said they used this method when checking whether milk or yoghurt was safe to eat and three-fifths (62%) used smell as an indicator for fish. How food looks (for example the appearance of mould) was the most common practice (71%) for telling whether cheese was safe to eat. For meat, colour was the second most commonly reported method (42%).

Use-by dates were also mentioned as an indicator of whether food was safe; this was the most commonly reported method for eggs (44%) and the second most commonly reported method for milk/yoghurt, cheese and fish. Eleven per cent also said they checked whether eggs floated in water to tell whether they were safe to eat. Very few respondents said they used food on the day it was bought or bought it fresh so that they knew it was safe to eat (Figure 3.15).

Figure 3.15 Methods used to tell whether food is safe to eat (Wave 2)



Source: Q4_18 For each of the following foods, please say how you can tell whether it is safe to eat or use in cooking? Base: All NI respondents (504)

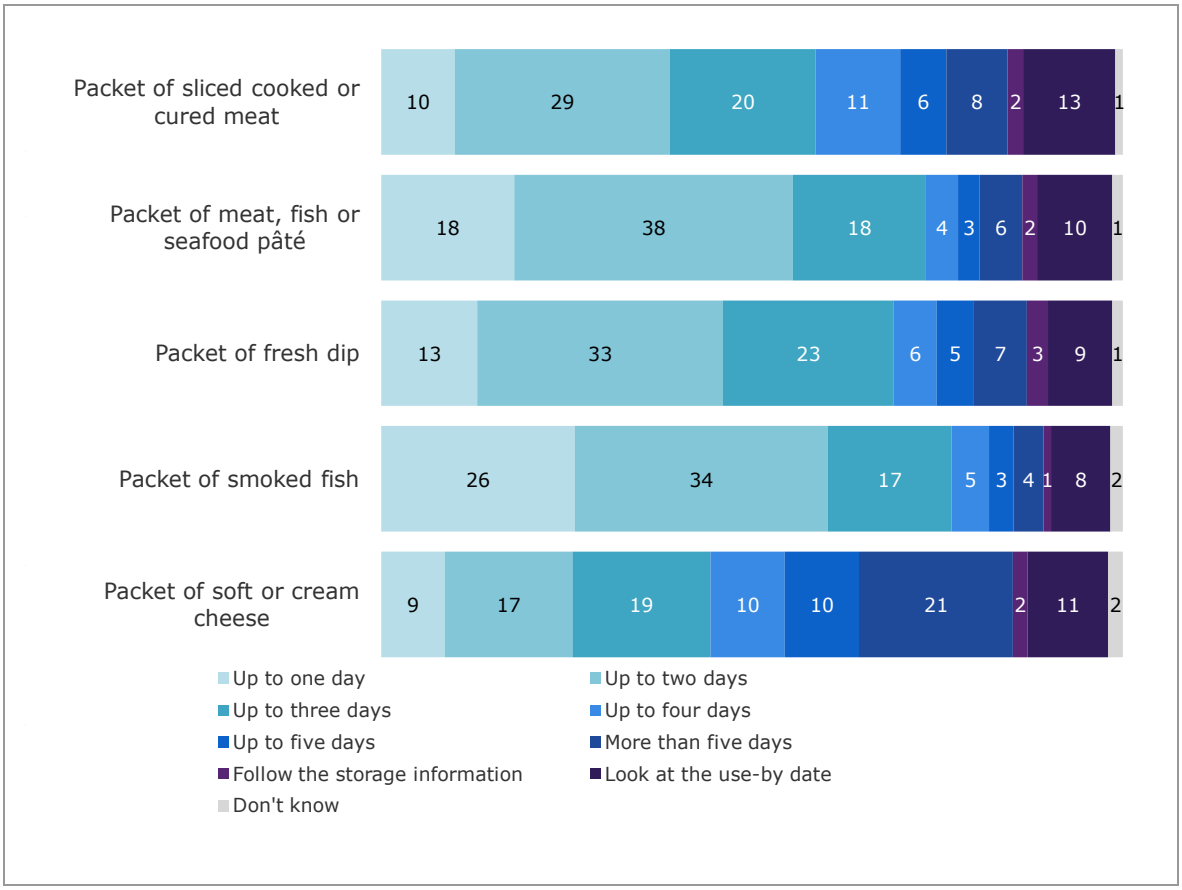
Storage information

Respondents were asked what would be the maximum number of days they would keep various food items in the fridge after opening them. All respondents were asked about a number of different food items, but were given the option to state that they did not eat/use each item[17]. These respondents have been removed from the data reported, so that it is reflective only of those actually using each item, making it easier to make comparisons across the different food types. **The FSA recommends using opened foods within two days, unless the manufacturer's instructions say otherwise.**

Respondents were most likely to report consuming food within two days for 'smoked fish' (60%) and 'meat, fish or seafood pâté' (56%). Respondents were least likely to report consuming soft cheese (26%) within two days. A minority of users reported that they would look at the use-by date or follow the storage information on the product (between 8% and 13% of respondents stated they would look at the use-by date and between 1% and 3% stated that they would follow storage information). See Figure 3.16 for more detail.

[17] Out of all respondents, 5% said they did not eat/use packets of sliced cooked or cured meat, 14% did not eat/use packets of meat, fish or seafood pâté, 21% did not eat/use packets of fresh dip, 25% did not use packets of smoked fish and 19% did not eat/use packets of soft or cream cheese.

Figure 3.16 Maximum time respondents would eat/use food after opening it (Wave 2)



Source: Q4_23A If you open ... and keep it stored in the fridge, what is the maximum number of days you would keep it in the fridge for before deciding you would definitely not eat/drink it?
Base: Q4_23A All NI respondents, excluding those who do not eat/use each food item – Packet of sliced cooked or cured meat (479); Packet of meat, fish or seafood pâté (331); Packet of fresh dip (325); Packet of smoked fish (287); Packet of soft or cream cheese (332)

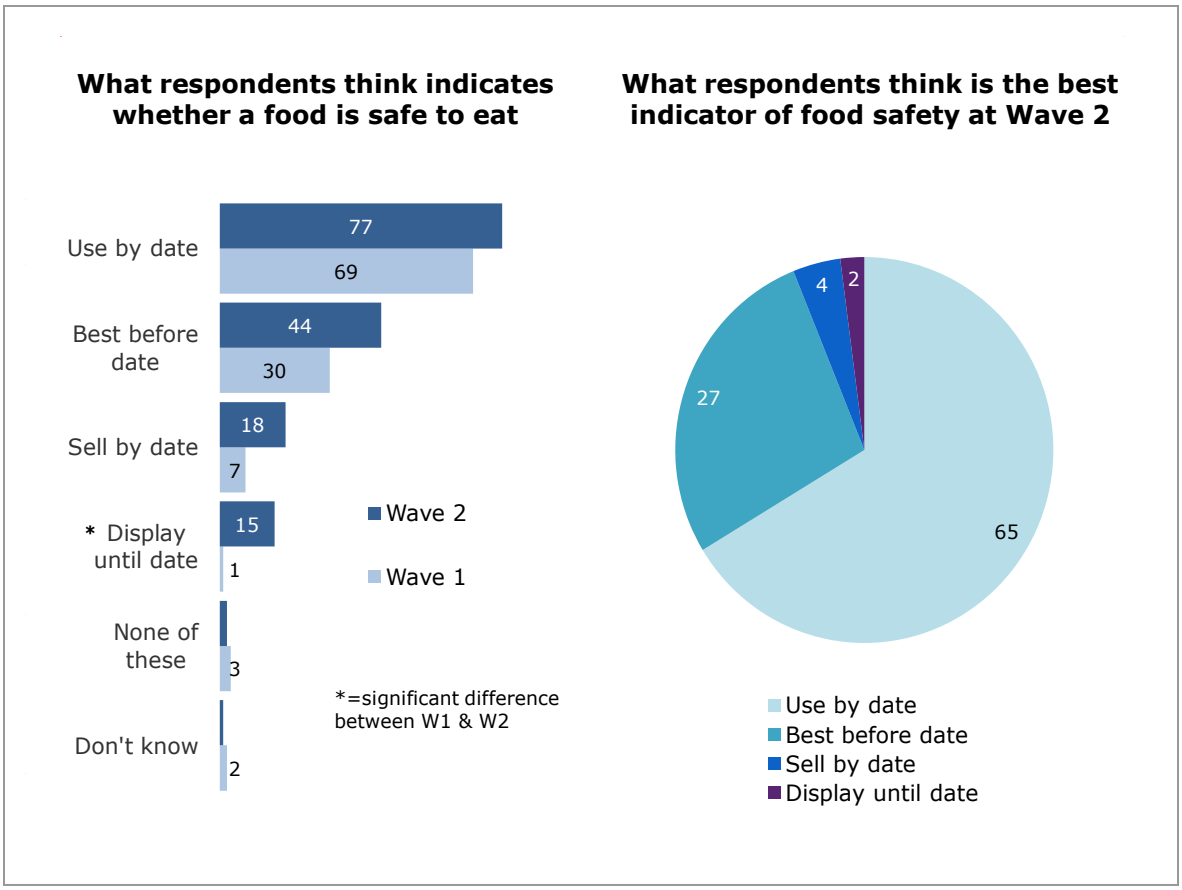
Use-by and best-before dates

Respondents were presented with a list of indicators which are typically found on food packaging and were asked which of these indicated whether food was safe to eat; respondents were able to select more than one response in both waves therefore the increase seen across all indicators should be interpreted with this in mind. **FSA guidance is that the use-by date is the best indicator of whether food is safe to eat and food should not be eaten after this date.**

The majority of respondents (77%) cited the use-by date as an indicator of whether food was safe to eat. This is higher than Wave 1 (69%). However, the proportion of respondents in Wave 2 who *only* mentioned the use-by date had decreased since Wave 1 (48% at Wave 2, a drop from 54% at Wave 1). Twelve per cent of respondents mentioned all four options (use-by, best-before, sell-by, display until dates) as indicators.

Respondents were then asked which one of the four dates was the best indicator of food safety; 65% selected the use-by date while 27% selected the best-before date. Results are also shown in Figure 3.17.

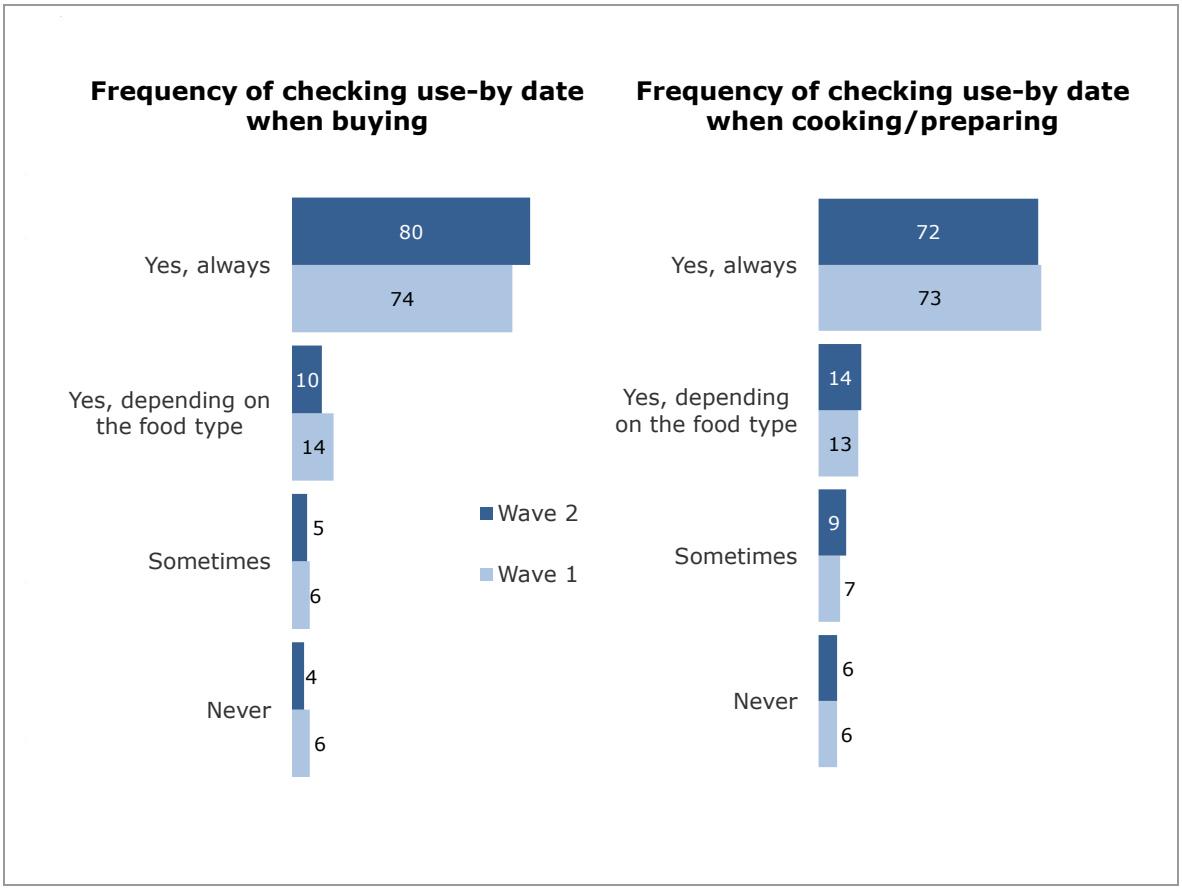
Figure 3.17 Indicators of food safety(Wave 1 and Wave 2)



Source: Q4_19 Which of these indicates whether food is safe to eat? & Q4_19B Which of these is the best indicator of whether food is safe to eat?
Base: Q4_19 All NI respondents: Wave 1 (506); Wave 2 (504) & Q4_19B All NI respondents: Wave 2 (504)

When asked if they checked use-by dates when buying food; 80% said that they always did regardless of food type (unchanged from Wave 1). A very small proportion in both waves said they never checked, 6% in Wave 1 and 4% in Wave 2. Almost three-quarters (72%) reported always checking use-by dates when cooking or preparing food and this was not found to have changed since Wave 1 (Figure 3.18).

Figure 3.18 Frequency of checking use-by date (Wave 1 and Wave 2)



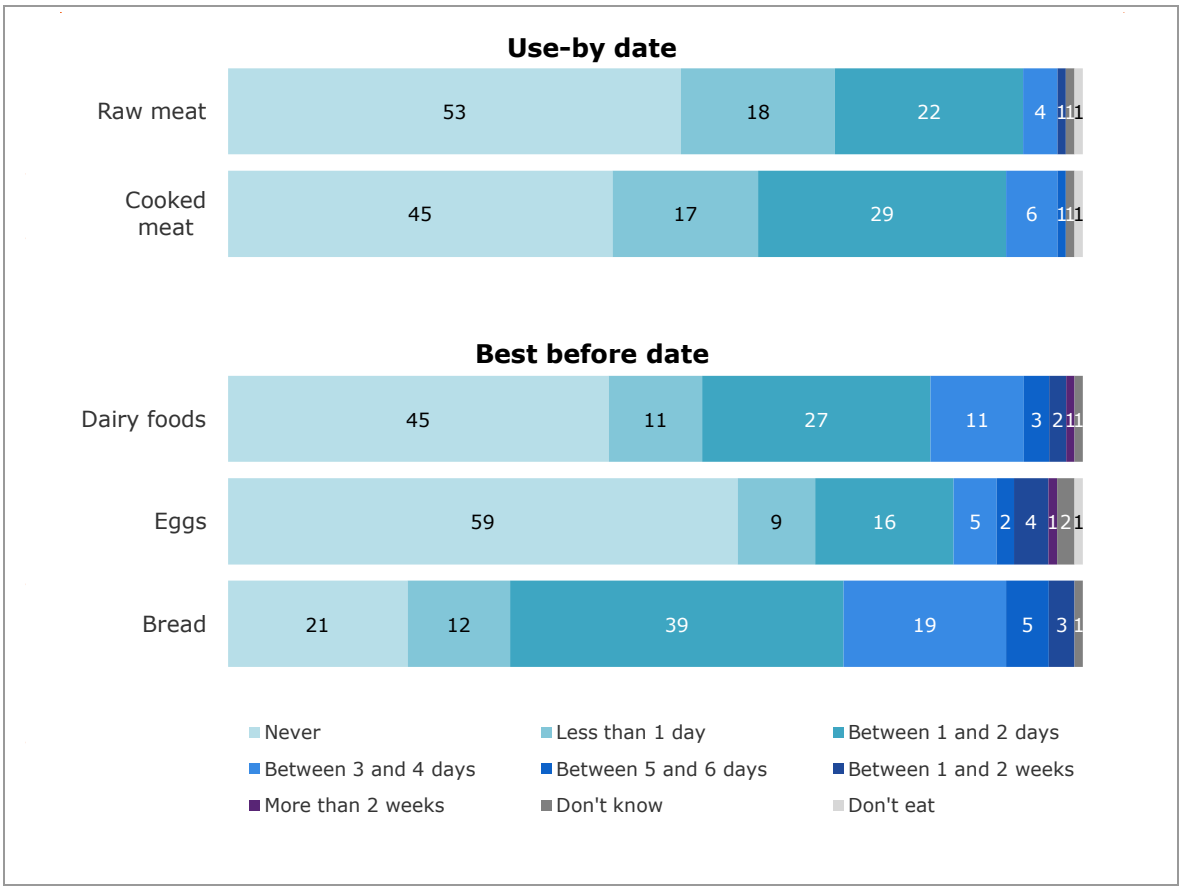
Source: Q4_21 Do you check use-by dates when you are buying food? & Q4_22 Do you check use-by dates when you are about to cook or prepare food?
Base: Q4_21 & Q4_22 All NI respondents- Wave 1(506); Wave 2(504)

Respondents were asked what would be the maximum time after the use-by or best-before date that they would eat certain foods. **FSA guidance on use-by dates is that foods should be consumed before the specified use-by date as it could be dangerous to eat food after this, even though it might look and smell fine.** Best-before dates appear on food with a longer shelf life. They show how long the food will be at its best quality. Using food after the best-before date does not mean it will be unsafe with the exception of eggs (raw egg must be consumed by the best-before date although cooked egg, provided it is cooked thoroughly by the best-before date, can be consumed a day or two after the best-before date).

Around half of all respondents said that they would never use or eat beyond the use-by/best-before date any raw meat (53%), cooked meat (45%), eggs (59%) or dairy foods (45%). Respondents were more likely to say they would eat bread after its use-by/best-before date – 21% said they would never do so. Around two-fifths of respondents said they would use or eat raw meat (40%), dairy products (38%) and cooked meat (46%) up to two days after the use-by/best-before date and 59% said they would do so for bread. Only a minority of respondents said they would eat the products more than two days after the

use-by/best-before date, with bread the most commonly mentioned food (27%), followed by dairy products (16%) and eggs (11%) (Figure 3.19).

Figure 3.19 Maximum time after use-by date/best-before date that respondents would eat/use food(Wave 2)



Source: Q11_6 What is the maximum time after the USE-BY/BEST-BEFORE END date that you would use/eat...?
Base: All NI respondents - (504)

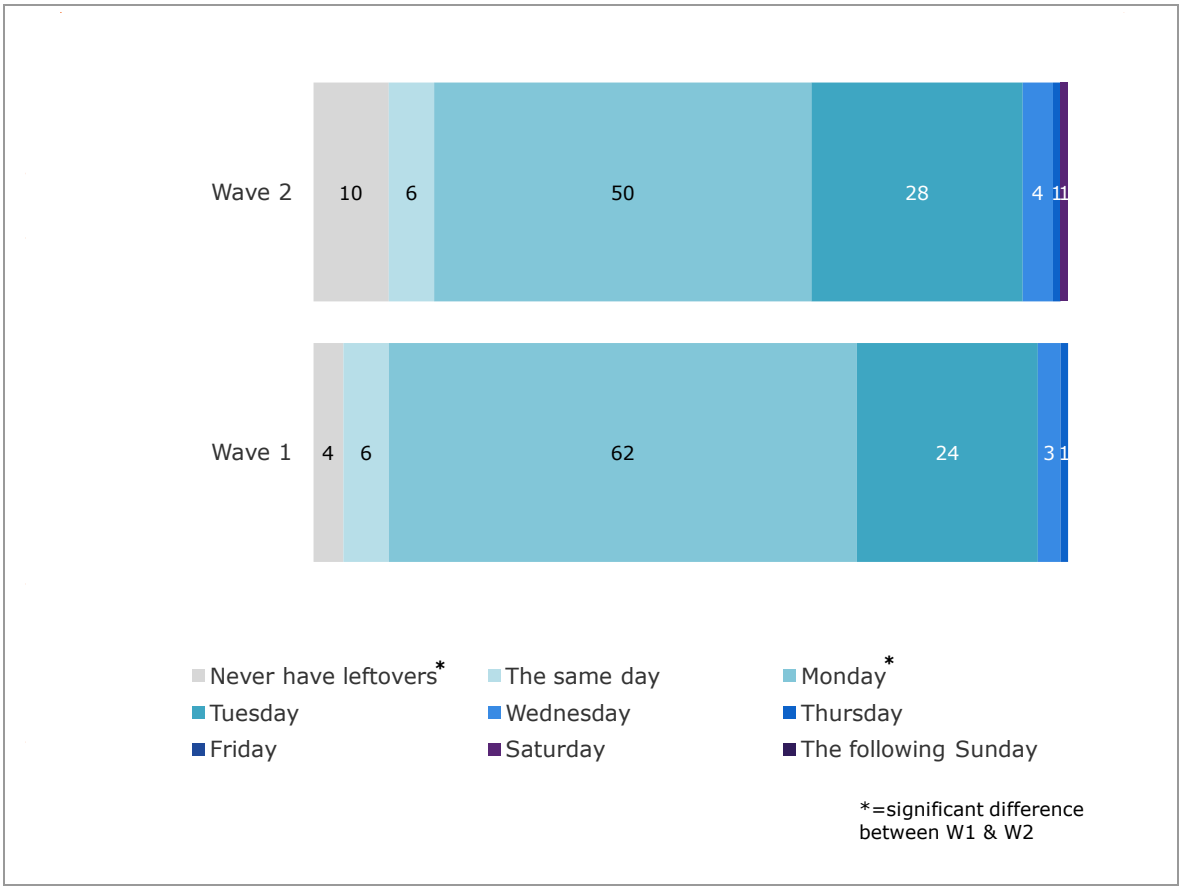
Maximum time for keeping leftovers

Respondents were asked what would be the last day they would consider eating leftovers if they made a meal of Sunday. **FSA guidance is that leftovers should be used within two days (that is, up to Tuesday).** Results for both waves are shown in Figure 3.20.

Eighty-four per cent of respondents reported that, if they cooked a meal on Sunday, they would eat the leftovers within two days (50% reported that they would eat leftovers the next day and 28% said they would eat them on the Tuesday). Six per cent of respondents said they would eat the leftovers on the same day they first cooked it. Six per cent of respondents said they would eat the leftovers three days or more after cooking (i.e. Wednesday or after).

Compared with Wave 1, there was an increase in the number of respondents who reported that they never have leftovers (up 6 percentage points). There has also been a decrease in the proportion who said that they would eat leftovers the next day (50% compared with 62% in Wave 1).

Figure 3.20 Last day respondents would consider eating leftovers from a meal (having cooked it on Sunday) (Wave 1 and Wave 2)



Source: Q4_24 If you made a meal on Sunday, what is the last day that you would consider eating the leftovers?
Base: All NI respondents - Wave 1 (506); Wave 2 (504)

3.2.7 Variation in food safety practices (4Cs and methods used to tell whether food is safe to eat) by different groups in the population

Reported food safety practices were found to vary considerably by **gender.** In general, women were more likely than men to report food safety practices in line with Agency recommended practice (RP). For example:

- Cleaning the sink and draining board thoroughly at least once a week (98% of women reported this compared with 87% of men);
- Always washing hands after handling raw meat (86% compared with 72%);

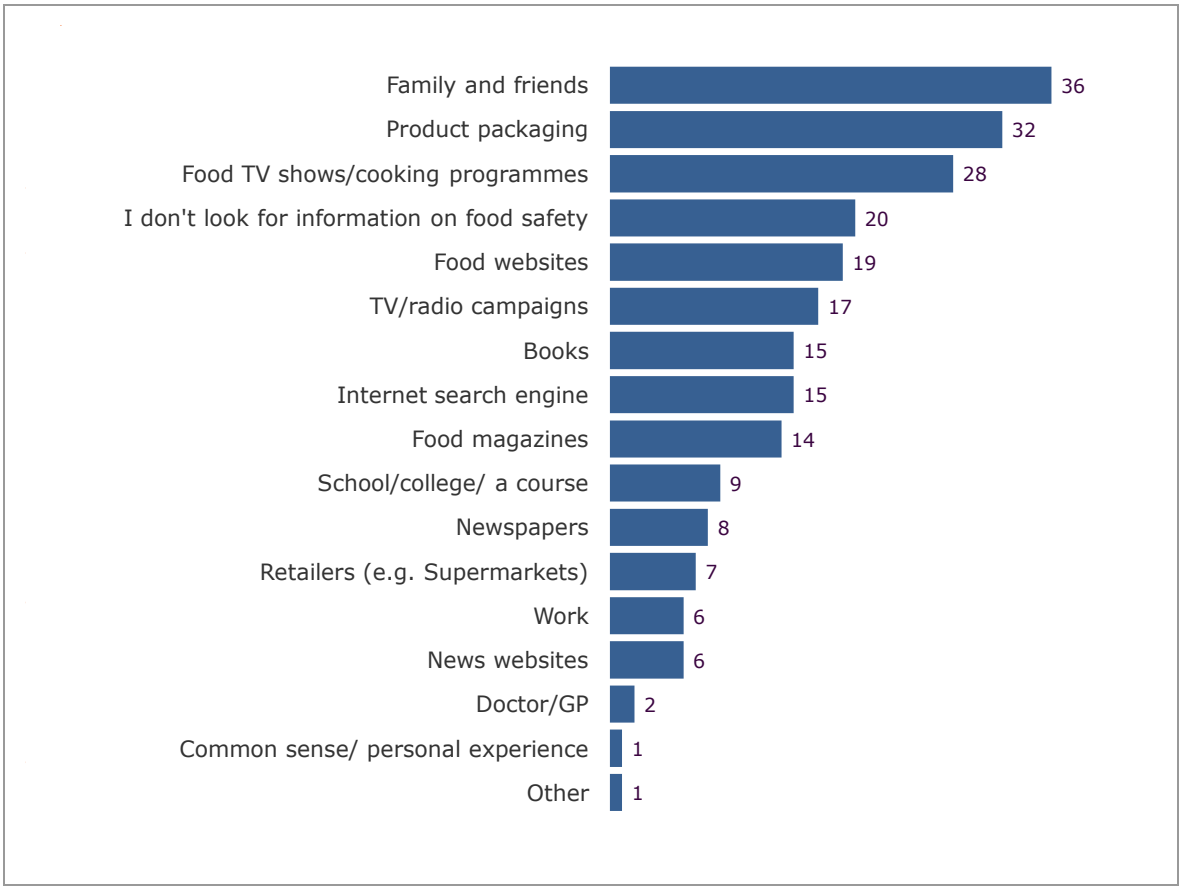
- Always cooking food till steaming hot throughout (85% compared with 69%);
- Always using different chopping boards for different foods (59% compared with 40%)

However, an area where women were less likely than men to report practices that were in line with RP was washing raw meat or poultry (56% compared with 47% of men).

3.3 Sources of information on food safety at present and in the future

Respondents were asked how they gathered information on how to prepare and cook food safely. Thirty-six per cent said they used family and friends whilst a third (32%) said they relied on product packaging. A very small proportion (2%) said they obtained information from a doctor or GP and a fifth said they didn't look for this information (Figure 3.21).

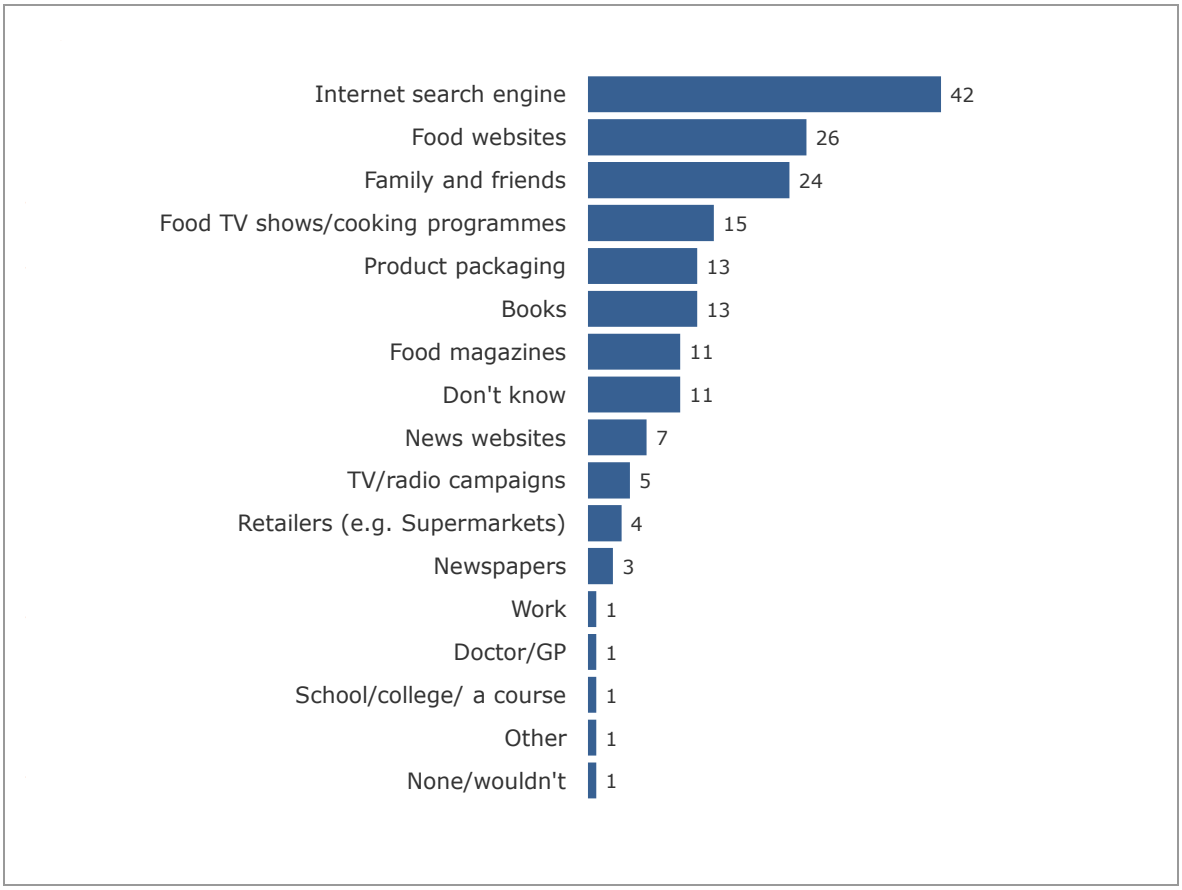
Figure 3.21 Sources of information on food preparation and cooking food safely (Wave 2)



Source: Q11_8B Looking at this screen, do you get information about how to prepare and cook food safely at home from any of these sources?
Base: All NI respondents - Wave 2 (504)

When asked where, if they decided to look for it, respondents would get information about safely preparing and cooking food in the future, the top two sources were different to the sources respondents reported they currently used. The most popular source for future information was an internet search engine, which was selected by 42% of respondents compared with 15% who said they currently use this source. Similarly, the proportion of respondents who said they would use food websites in the future was higher (26%) than the proportion who said they currently used them (19%). There were fewer respondents who said they would use product packaging and food TV shows as a future source of information compared to the proportion that said they currently use them (Figure 3.22).

Figure 3.22 Future sources of information on preparing and cooking food safely (Wave 2)



Source: Q11_8C In the future if you decided to look for more information about how to prepare and cook food safely at home, where would you look for this information?
Base: All NI respondents - Wave 2 (504)

3.3.1 Variation in sources of information on preparing and cooking food safely by different groups in the population

Both the reported current and future sources of information on preparing and cooking food safely were found to vary by **age**. Respondents aged 16-24 were more likely than those aged 60 and over to say they currently got information from family and friends (53% compared with 18%), the internet (30% compared with 5%) and school/college/course (29% compared with 2%).

As for **gender**, men and women did not vary greatly when reporting current sources of information on preparing and cooking food safely. The only difference found was that men were more likely to use food websites (26%) than women (11%) to get their information.

3.4 Comparisons between Northern Ireland and the rest of the UK

There were some differences in food preparation behaviours by country. Table 3.1 shows the breakdown by country of the proportions of respondents who reported carrying out a domestic food safety practice that was in line with Agency recommended practice (either never or always, depending on Agency guidance). Respondents in Northern Ireland were more likely than those in England and Wales to say they never wash raw fish/seafood, or raw meat/poultry. Respondents in Northern Ireland were also more likely than respondents in England to never store open tins in the fridge and never eat red meat or burgers/sausages if the meat is pink or has pink or red juices.

Table 3.1 Food preparation behaviour - % who reported carrying out a food safety practice, by country (Wave 2)

	Northern Ireland	England	Wales	Scotland
Never				
Store open tins in the fridge	*77%[E]*	*69%*	*72%*	*79%*
Eat red meat if it is pink or has pink or red juices	*61%[E]*	*45%*	*59%*	*59%*
Eat burgers or sausages if the meat is pink or has pink or red juices	*86%[E]*	*79%*	*87%*	*86%*
Wash raw meat or poultry	*39%[EW]*	*32%*	*25%*	*32%*
Wash raw fish or seafood	*26%[EW]*	*19%*	*13%*	*21%*
Always				
Wash vegetables (including salad) which are going to be eaten raw	*64%*	*68%*	*71%*	*72%[NI]*
Wash hands immediately after handling raw meat, poultry or fish	*79%*	*84%*	*90%[NI]*	*86%[NI]*
Cook food until it is steaming hot throughout	*77%*	*79%*	*86%*	*85%[NI]*
Base	*(504)*	*(2116)*	*(104)*	*(507)*

Source: Q4_1 Thinking about when you are storing, preparing and cooking food in the kitchen do you...
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

Respondents in Northern Ireland were less likely than those in Scotland to say they always wash vegetables which are going to be eaten raw or cooked, or wash fruit which is going to be cooked.

Respondents in Northern Ireland were less likely than those in Wales and Scotland to say they always wash their hands immediately after handling raw meat, poultry or fish, and less likely than those in Scotland to say they always heat food until it is steaming hot.

There were also some differences in reported behaviour around cleaning practices; Table 3.2 shows the percentage of respondents who reported that they did each activity, broken down by country. Respondents in Northern Ireland were more likely than respondents in England to change their tea towels at least every day (36% compared with 29%) and they

were also more likely than those in England to change their dishcloths used for washing up, and more likely than those in England and Wales to change their dishcloths used for and cleaning their kitchen a couple of times a week. Respondents in Northern Ireland were less likely however, to clean their sink and draining board thoroughly than respondents in Wales (75% compared with 86%).

Table 3.2 Kitchen cleaning - % who said they did each task by country (Wave 2)

	Northern Ireland	England	Wales	Scotland
Change dishcloths or sponges used for washing up - at least twice a week	*66%^{E}*	*43%*	*59%*	*63%*
Change dishcloths or sponges used for cleaning the kitchen - at least twice a week	*60%^{EW}*	*42%*	*50%*	*58%*
Clean sink and draining board thoroughly – at least twice a week	*75%*	*74%*	*86%^{NI}*	*79%*
Change tea towels - at least every day	*36%^{E}*	*29%*	*47%*	*42%*
Base	*(504)*	*(2116)*	*(104)*	*(507)*

Source: Q4_1A How often do you use...
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

Respondents in Northern Ireland were less likely than those in England to say they checked their fridge temperature. There were no significant differences by country between respondents who said they didn't check the fridge temperature or those who said someone else in the household checks it. Results are shown in Table 3.3.

Table 3.3 Checking fridge temperature, by country (Wave 2)

	Northern Ireland	England	Scotland
Whether respondent checks fridge temperature:			
Yes	*36%*	*42%*[NI]	*38%*
Base	*(494)*	*(2105)*	*(503)*

Source: Q4_9 Do you ever check your fridge temperature?
Base: All respondents who have a fridge in their household
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

Responses on what the temperature inside the fridge should be did not vary significantly by country. Likewise, the proportion who said they always kept certain types of food in certain parts of the fridge did not vary significantly between countries.

There were a few differences by country in reported practices of reheating food. Respondents in Northern Ireland were more likely to say they would reheat food once (86%), compared with respondents in Scotland (74%) and England (81%).

Table 3.4 shows differences by country in reported sources of information on preparing and cooking food safely. Respondents living in Northern Ireland (17%) were more likely to report TV or radio campaigns as a source of information than those in Scotland (10%) and England (12%). Northern Ireland respondents were also more likely to have obtained information from food websites than those in Scotland and England (18%, 12% and 13% respectively).

Table 3.4 Sources of information on preparing and cooking food safely, by country (Wave 2)

	Northern Ireland	England	Wales	Scotland
Books	*15%*	*20%*^{NI}	*22%*	*16%*
Food magazines	*14%*	*18%*	*31%*^{NI}	*17%*
TV / radio campaigns	*17%*^{ES}	*12%*	*15%*	*10%*
Food websites	*18%*^{ES}	*13%*	*15%*	*12%*
News websites	*6%*^{ES}	*3%*	-	*1%*
Base	*(504)*	*(2116)*	*(104)*	*(507)*

Source: Q11_8B Do you get information about how to prepare and cook food safely at home from any of these sources?
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

When asked where, if they decided to look for it, respondents would get information about safely preparing and cooking food in the future there was some variation by country. Respondents in Northern Ireland were more likely to say they would get information about food safety in the future from:

- news websites (7% compared to 1-3% of respondents in England, Wales and Scotland).

However, compared to other countries, respondents in Northern Ireland were less likely to report future sources of information as:

- product packaging (13% compared with 21% and 24% of respondents in England and Scotland respectively)
- Food TV shows/ cooking programmes (15% compared with 22% of respondents in Scotland)
- Magazines (11% compared with 26% and 17% of respondents in Wales and Scotland respectively).

Table 3.5 Future sources of information on preparing and cooking food safely, by country (Wave 2)

	Northern Ireland	England	Wales	Scotland
Product packaging	*13%*	*21%*^{NI}	*17%*	*24%*^{NI}
Books	*13%*	*19%*^{NI}	*21%*	*13%*
Food TV shows/ cooking programmes	*15%*	*17%*	*19%*	*22%*^{NI}
Food magazines	*11%*	*13%*	*26%*^{NI}	*17%*^{NI}
News websites	*7%*^{EWS}	*3%*	*1%*	*3%*
Doctor/ GP	*1%*	*3%*^{NI}	*4%*	*2%*
Work	*1%*	*3%*^{NI}	*5%*	*4%*^{NI}
Base	*(504)*	*(2116)*	*(104)*	*(507)*

Source: Q11_8C In the future if you decided to look for more information about how to prepare and cook food safely at home, where would you look for this information?
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

4. Further analysis of food safety practices among different groups of the population

This chapter explores, in more depth, variation in reported food safety practices by different socio-demographic groups. An index of recommended practice (RP) for food safety was constructed by combining a number of food safety practices into a single composite measure. This index was then analysed to explore the characteristics of respondents who are more or less likely to follow Agency RP.

Summary

Frequency and distribution of the index

- The index is a scale from 0-10. Higher numbers indicate a lower likelihood of reporting food safety practices that are in line with Agency recommended practice (RP). A fifth (19%) of respondents were classified in the upper band of the index (5 or more on the index).

- The most common areas that respondents reported practices that were not in line with RP were use-by dates, e.g. checking the use-by date before eating food (87%) and chilling, e.g. method of checking the fridge temperature (83%). Only 7% of respondents reported a practice that was not in line with RP for hand washing.

Variations in the index by socio-demographic groups

Key groups found to be *less* likely to report food safety practices in line with RP were:

- Men.
  The odds of a male respondent being in the upper band of the index were 200% higher than the odds of a female respondent.

- Older respondents aged 55 to 64 and 75 or older.
  The odds of a respondent aged 75 or older being in the upper band of the index were 280% higher than the odds of a respondent aged 35-44. Likewise, compared with the odds of a respondent aged 35-44, the odds for a respondent aged 55-64 were 170% higher.

- Not having continuous use of a motor vehicle
  The odds of being in the upper band of the index were 90% higher for those that did not have a motor vehicle.

4.1 Derivation of the index of recommended practice (RP) for food safety

The index measures the extent to which reported food safety behaviour was in line with Agency recommended practice (RP). The food safety practices included in the index were selected by the FSA from all the RPs asked about in Wave 2, on the basis that if they were not followed they were most likely to increase the chance of contracting a foodborne illness. The index is a scale from 0-10, with higher numbers indicating a lower likelihood to report behaviour that was in line with Agency recommended practice. So, a score of zero would indicate that all reported food safety practices were in line with RP, while a score of 10 would indicate that all reported food safety practices were not in line with RP.

The specific food safety practices that make up the index and the weighting given to them are detailed in Technical Appendix 10.2.

4.2 Frequency and distribution of the index

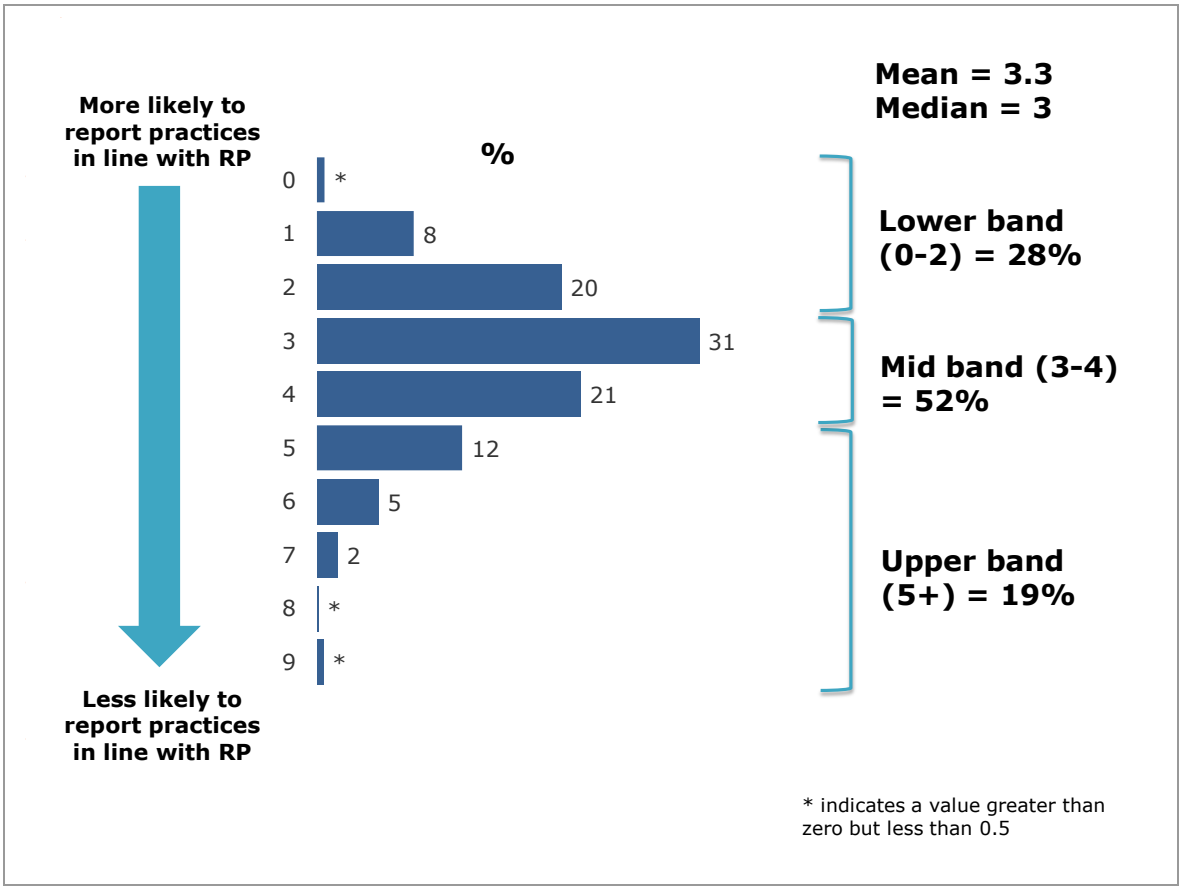
All respondents had a RP index score within the range 0-9 meaning there were no respondents who reported food safety practices that were fully not in line with RP. However, only a very small minority (0.6%) of respondents in Northern Ireland had an RP index score of 0, indicating reported practices were fully in line with RP. The median index score was 3 (mean 3.3).

Figure 4.1 shows the distribution of raw index scores, and a summary classification which categorises respondents into three bands:

- Lower band (score 0-2, most likely to report practices that are in line with RP);
- Mid band (score 3-4); and
- Upper band (score of 5+, least likely to report practices that are in line with RP).

As shown, around half were classified into the mid band, while a fifth was classified into the upper band.

Figure 4.1 Distribution of the index of RP for food safety (Wave 2)



Source: Derived index of RP for food safety- a full explanation can be found in Technical Appendix 10.2
Base: All respondents: (504)

Table 4.1 shows how the distribution within the three bands varied by country. Respondents in Northern Ireland were more likely than those in England to be classified in the lower band, and less likely to be classified in the higher band.

Table 4.1 Distribution of the index of RP for food safety, by country

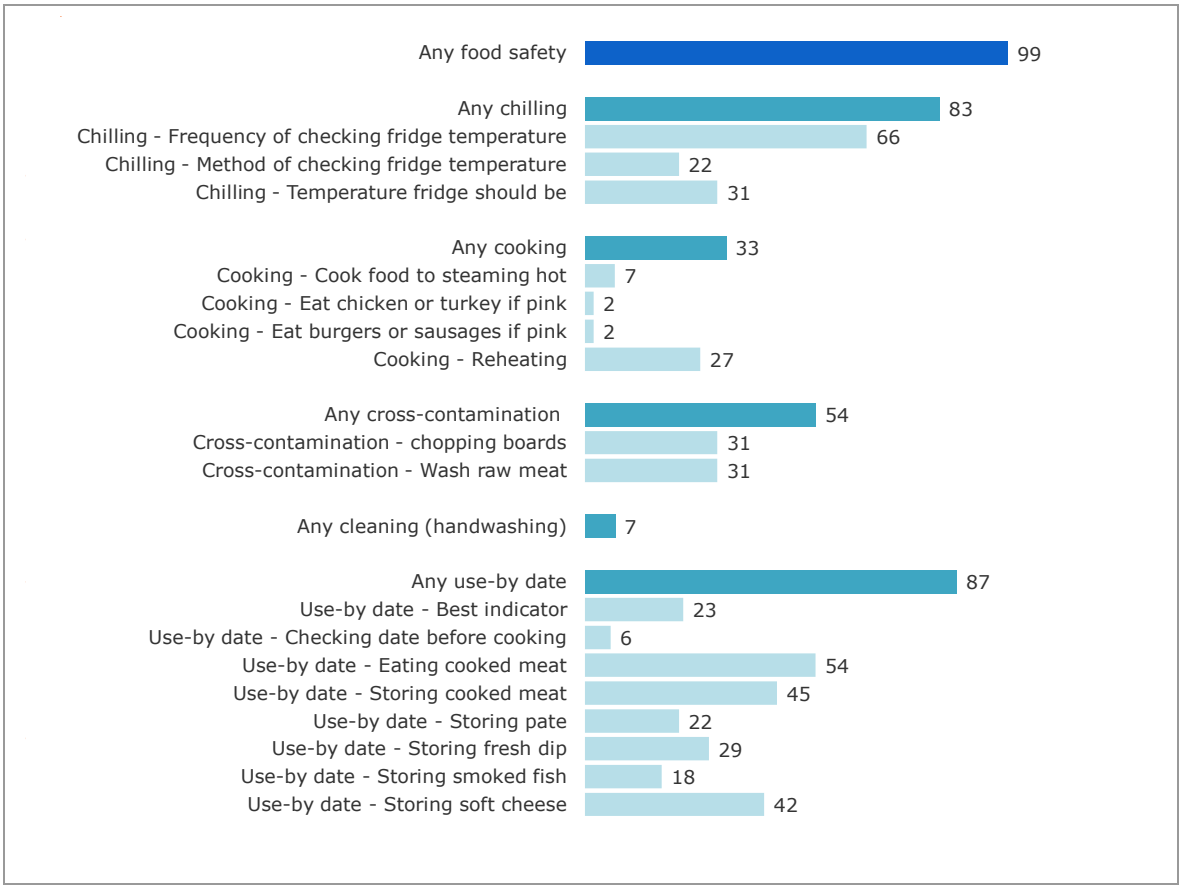
	Northern Ireland	England	Scotland
Lower band (0-2)	28% [E]	21%	22%
Medium band (3-4)	52%	52%	56%
Higher band (5+)	19%	27% [NI]	22%
Base	*(504)*	*(2116)*	*(507)*

Source: Derived index of RP for food safety
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

4.3 Components of the index of RP for food safety

Looking at the different components that make up the index, the most common area in which reported practice was **not** in line with RP was use-by dates, with 87% of respondents reporting at least one non-RP practice in this category. The second most common area was chilling, with 83% of respondents reporting at least one chilling practice that was not in line with RP. The areas where reported practice was most in line with RP was cooking and cleaning, with only 7% of respondents reporting any cleaning practice, and 33% of respondents reporting any cooking practice, that was not in line with RP (Figure 4.2).

Figure 4.2 Percentage of respondents reporting practices that were not in line with RP by different components of the index of RP for food safety (Wave 2)



Source: Derived index of RP for food safety - explanation can be found in Technical Appendix 10.2
Base: All respondents - (504)

For chilling, the reported practice which was most commonly not in line with RP was frequency of checking fridge temperature (66%). For cooking, the most commonly reported practice that was not in line with RP was checking that food was properly reheated (27%). Under the cross-contamination heading, 31% of respondents reported practices not in line with RP for washing raw meat and cleaning chopping boards. For the use-by date component, over half of respondents reported practices that were not in line with RP in relation to eating cooked meat (54%).

4.4 Introduction to the regression analysis

A logistic regression model was used to analyse the significance and contribution of a number of demographic factors to the extent in which a respondent reported food safety practices that were not in line with RP[18].

A forward stepwise approach was adopted, whereby the model starts with the variables used in the weighting and then tests the addition of each new predictive variable in turn. The model only adds variables which were found to improve the predictive power. The approach was used to run regression models on the UK sample, the Northern Ireland sample, and the Scotland sample[19].

Table 4.2 below shows the summary outcomes of the regression analysis for Northern Ireland. The principal output from logistic regression is the **odds ratio**. The odds ratio indicates the size of the effect, that is, by how much a variable increases or decreases the likelihood of being in the upper band of the index compared with the reference category. If the odds ratio was **less than 1**, it means that the odds of being in the upper band of the index were lower for this category than they were for the reference category. If the odds ratio was **greater than 1**, then the odds of being in the upper band were higher for this category than for the reference category.

The final model only included variables which were found to be significant and the odds ratio statistics are only shown for significant subgroups in the summary table. Where data is not shown, findings were not significant (full statistics are detailed in Technical Appendix 10.3).

Further information on the methodology used for the regression analysis can be found in the UK report.

[18] Logistic regression is based on the prediction of a binary outcome. For this purpose, a summary binary variable was created based on the composite 0-10 scale index discussed in Section 4.1 above. Thus, for the purposes of the regression analysis, a respondent was classified as reporting a high number of practices which were not in line with RP if their score was in the upper band of 5 or more.

[19] The full results from each model can be found in section 10.3.2 of the Appendix.

Table 4.2 Results of regression analysis

Variable	Categories (reference category[20] in italics)	Significant (p<0.05)*	Odds ratio
Gender	*Women*		
	Men	*	3.0
Age	*35-44*		
	16-24		
	25-34		
	45-54		
	55-64	*	2.7
	65-74		
	75+	*	3.8
Continuous use of a motor vehicle?	*Yes*		
	No	*	1.9

The key findings from the model were as follows:

- **Gender** was found to be a significant predictor of whether or not a respondent reported food safety practices that were not in line with RP, with men having odds of being in the upper band of the index that were 200% higher than the odds for women.

- **Age** was also found to be a significant factor, with those aged 55-64 and 75+ more likely to be in the upper band compared with respondents aged 35-44. In particular, respondents aged 75 or older had odds of being in the upper band of the index that were 280% higher than the odds for respondents aged 35-44. Respondents aged 55-64 had odds of being in the upper band of the index that were between 170% higher than the odds for respondents aged 35-44. No significant difference was found between respondents aged 35-44 and all other age groups.

- The likelihood of a respondent being in the upper band was also found to differ depending on whether respondents had **continuous use of a motor vehicle**. Those who did not have access to a motor vehicle were found to have a 90% higher chance of being in the upper band.

In order to provide further context, these results were also examined alongside regression models for the UK, England and Wales, and Scotland (see Technical Appendix 10.3.2 in the Appendix for full regression findings).

[20] In calculating odds ratios, a **reference category** was selected for each variable as the category against which the odds for all other categories of that variable were compared.

A country variable was included in the UK regression model to test whether there were significant differences between countries in the extent to which respondents reported food safety practices that when not in line with Agency guidance. Compared to respondents in England and in Scotland, respondents in Northern Ireland were less likely to report practices that were not in line with Agency guidance (the odds of being in the upper band of the index were 90% higher for respondents in England, and 50% higher for respondents in Scotland compared with respondents in Northern Ireland).

Using separate regression models for Northern Ireland, Scotland and England and Wales samples it was possible to consider whether the size of sub-group differences varied between countries.

Compared to respondents in England and Wales and in Scotland, the gender difference in Northern Ireland was more pronounced. The odds of a male respondent being in the upper band of the index compared to a female respondents was 200% in Northern Ireland compared to 40% in England and Wales and 90% higher in Scotland.

Looking at the results by age, the difference in the likelihood of older respondents being in the upper band of the index compared to younger respondents was greater in Northern Ireland compared to England and Wales, but was similar to the difference in Scotland. The odds of a respondent aged 75 or older being in the upper band of the index compared to a respondent aged 35-44 was 280% in Northern Ireland compared with 140% higher in England and Wales and 260% in Scotland.

There were a number of other variables which were found to be significant in the England and Wales and Scotland regression models. Working status was found to be significant in these three countries but was not significant in the Northern Ireland model. Furthermore, a number of other variables were found to be significant in England and Wales (such as diet, having a separate kitchen, ethnicity), which were not significant in Northern Ireland. It is likely that some of these were not found to be significant in Northern Ireland due to the smaller sample size.

5. Eating outside the home

This chapter explores reported practices and attitudes towards eating outside of the home, how hygiene was ranked in terms of other considerations when eating out, and awareness and use of hygiene standards rating schemes.

Summary

Frequency of eating out

- Around three-quarters (73%) reported that they had eaten out in the last seven days. This is at a similar level to Wave 1. Respondents were most likely to have eaten out in restaurants (30%).

Awareness of hygiene standards when eating out

- Just over a third (36%) of respondents felt food was less safe when eating out compared with eating at home. Half (53%) considered there to be no difference.
- Two-thirds (64%) said that cleanliness and hygiene was an important consideration when deciding where to eat out. This has increased compared with Wave 1 (58%). Other important factors were service (56%) and price (49%), both of which have increased compared to Wave 1 (41% and 39% respectively). A good hygiene rating or score were cited by 29%.
- Over three-quarters (78%) of respondents said that they were aware of standards of hygiene when eating out.
- Asked how they know about the hygiene standards of places they eat out at or buy food from, respondents were most likely to say they used the general appearance of the premises (66%) and the appearance of staff (46%). Just over a quarter (28%) of respondents said they know about hygiene standards from a hygiene certificate and 38% said a hygiene sticker (an increase compared to 11% in Wave 1)

Awareness of Food Hygiene Rating Scheme (FHRS)/Food Hygiene Information Scheme (FHIS)

- Two-thirds (66%) of respondents recalled having seen the Food Hygiene Rating Scheme sticker and certificate before.
- Respondents who said they had seen a FHRS sticker and / or certificate were most likely to report having seen it on the window or door of a food establishment (92%).
- Over a quarter (27%) said they had used a scheme when deciding whether to eat at a food establishment.

- Almost all respondents who said they had used a food hygiene rating scheme said they had found it helpful (96%), with two-thirds saying it had been very helpful (64%).

Comparisons with the rest of the UK

- Respondents in Northern Ireland (29%) were more likely than those in Scotland (19%) to say that a good hygiene score is an important factor in deciding where to eat out, and were more likely to say they were aware of hygiene standards when eating out (78% compared with 71%).

- Respondents in Northern Ireland were more likely than those in the other countries to report they had seen the FHRS sticker/certificate before (66% compared to 33% in England, 43% in Wales and 12% in Scotland).

5.1 Background

Eating out encompasses a broad range of practices and relates to a variety of locations, motivations and implications. Eating out may be for convenience, for entertainment or as a means to display 'cultural capital[21] (Bourdieu, 1984; Warde and Martens, 2000). It may involve snacking, the eating of street food or consumption of a full meal – all from a wide variety of potential venues. The definition of eating out in the Food and You survey encompasses a wide range of establishments: restaurants, pubs, cafés or coffee shops, sandwich bars, fast food, work canteens, leisure facilities such as cinemas, bowling alleys or theme parks, and takeaway food (e.g. Indian/Chinese/Pizza/Fish and chips).

5.1.1 Trends

While there has been much discussion on the growth of eating out and the expansion of the catering industry, eating out is not a modern phenomenon, dating back to the Middle Ages. The origins of modern, global, fast-food consumption date back to the 1950s with the emergence of fast-food outlets. Oddy (2003) identifies the 1970s in Britain as a critical turning point in eating out practices, characterized by reductions in eating in institutional settings such as work canteens and schools but accompanied by increases in the incidence of eating in commercial venues (restaurants, pubs, fast-food outlets etc.). Between 1975 and 1984, take-away meals rose from 14% to 27% of all meals eaten.

Nowadays, on average one in every six meals in the UK is consumed outside the home, making these meals an important part of our diet. Food consumed outside of the home can represent up to 20-25% of calories eaten (Bates et al, 2010; Department for Environment

[21] Cultural capital is defined as a form of knowledge that has value in a given society in relation to status and power.

Food and Rural Affairs, 2007). A wide range of determinants have driven these trends including: increasing affluence, greater spatial mobility, increased labour market participation of women and food technology developments, including the ability to separate the location of food production and consumption[22].

Cheng et al's (2007) time use study observes an increase in the amount of time allocated to eating and drinking away from home. With the growth in the range and number of 'fast food' outlets and of eating out, food hygiene and safety among food business operators have become increasingly important.

5.1.2 Food hygiene rating schemes

The FSA's strategic objective is safer food for the nation and a key element in achieving this is the Food Hygiene Rating Scheme (FHRS) for England, Wales and Northern Ireland and the Food Hygiene Information Scheme (FHIS) for Scotland.

The schemes, which are being introduced in partnership with local authorities, are designed to help consumers choose where to eat out or shop for food by giving them information about the hygiene standards of food premises at the time they were inspected to check compliance with legal requirements. They are also intended to encourage food businesses to improve their standards. FHIS inspection results / FHRS ratings are published at www.food.gov.uk/ratings and businesses are given stickers / certificates and encouraged – though not currently required – to display these where their customers can easily see them[23]. The FHRS was launched on June 2011 in Northern Ireland, in partnership with 17 district councils, and has now increased to 25 out of 26 participating councils. Some district councils currently operate 'Scores on the Doors' schemes (SoTD) which are not part of the FHRS.

Studies of a number of schemes adopted in the USA, Canada, Denmark and New Zealand have found that providing the public with hygiene ratings is welcomed by consumers and can lead to improved standards of food safety and better sales[24]. Denmark is the only European Union country where the display of ratings at the entrance to food business premises and on business homepages is a legal requirement. Studies of the Danish

[22] This separation is possible by means of food preservation techniques such as canning, pre-cooking, freezing and dehydration of food which can then be re-assembled and re-heating as a meal in a variety of locations (Hartog, 2003)

[23] Display of stickers at food business premises in Wales will be mandatory once the provisions of the Food Hygiene Rating (Wales) Act 2013 come into force – this is expected to be late in 2013.

[24] Basrur, S. (2003) Evaluation of the Food Premises Inspection and Disclosure System available at http://www.toronto.ca/legdocs/2003/agendas/committees/hl/hl030127/it004.pdf; http://www.legco.gov.hk/yr07-08/english/sec/library/0708in19-e.pdf; http://www.findsmiley.dk/en-US/Forside.htm; Morris, J. (2005) Publication of hygiene inspection information, CIEH; Farley, T (2011) Restaurant Letter Grading: the first 6 months, NYC Department of Health and Mental Hygiene; Zhe Jin, G. and Leslie, P. (2003) The effect of information on product quality: evidence from restaurant hygiene grade cards. *The Quarterly Journal of Economics*, 409-451.

scheme have found that consumer awareness is very high and that consumers are making informed choices based on publicised food business hygiene standards. Studies of mandatory schemes such as the Dine Safe in Toronto, Canada and the Los Angeles County (USA) grade card initiative indicate an increase in food business compliance as well as raised consumer awareness of food hygiene standards. An impact study of the Los Angeles County scheme attributed a decrease in food-borne illness to the grade card scheme.

A full evaluation of the FHRS / FHIS has been commissioned by the Agency and is currently underway[25].

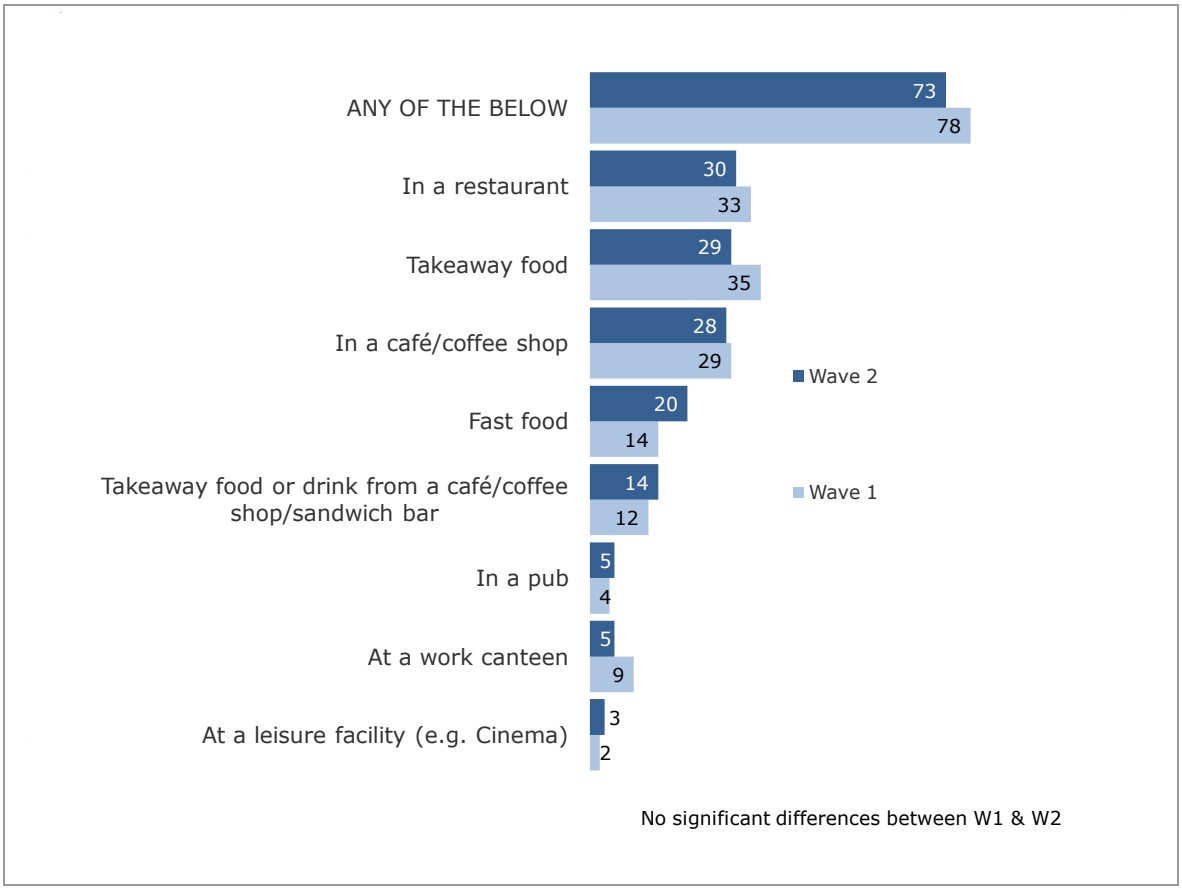
5.2 Frequency of eating out

Around three-quarters (73%) of respondents reported that they had eaten out in the previous seven days; this was not significantly different from Wave 1 (78%).

The type of establishments respondents most frequently reported eating out at over the previous seven days were restaurants (30%), take-away food outlets (29%) and a cafe/coffee shop (28%). The proportions of people reporting using each of these were not found to have changed since Wave 1 (Figure 5.1).

[25] The full evaluation of the FHRS focuses on various impact and process strands, including: uptake of the FHRS and FHIS by Local Authorities; businesses' understanding of, and response to, the FHRS and FHIS; and the impact of the FHRS and FHIS on consumer practice.

Figure 5.1 Eating out behaviour in the last 7 days: prevalence of eating at different establishments (Wave 1 and Wave 2)



Source: Q2_33 Have you done any of the following things in the last 7 days, that is since last...
Base: One third of total NI sample – Wave 1(169); All NI respondents - Wave 2 (504)

5.2.1 Variation in eating out behaviour by different groups in the population

Looking at **gender,** men were more likely than women to report eating out. 82% of men did so in the last 7 days compared with 66% of women. This difference was particularly pronounced for consumption of food from takeaway and fast-food outlets; around a third (36%) of men reported having consumed take-away food in the last seven days compared with 23% of women and 31% of men said they had eaten fast food in the last 7 days compared with 11% of women).

Age also made a difference. Respondents aged under 35 were much more likely to have eaten out in the last 7 days (83% of 16-24s and 93% of 25-34s) than respondents aged 60 and over (54%). The younger age groups most commonly reported eating takeaway food (39% of 16-24s and 59% of 25-34s, compared with 7% of those aged 60 and over).

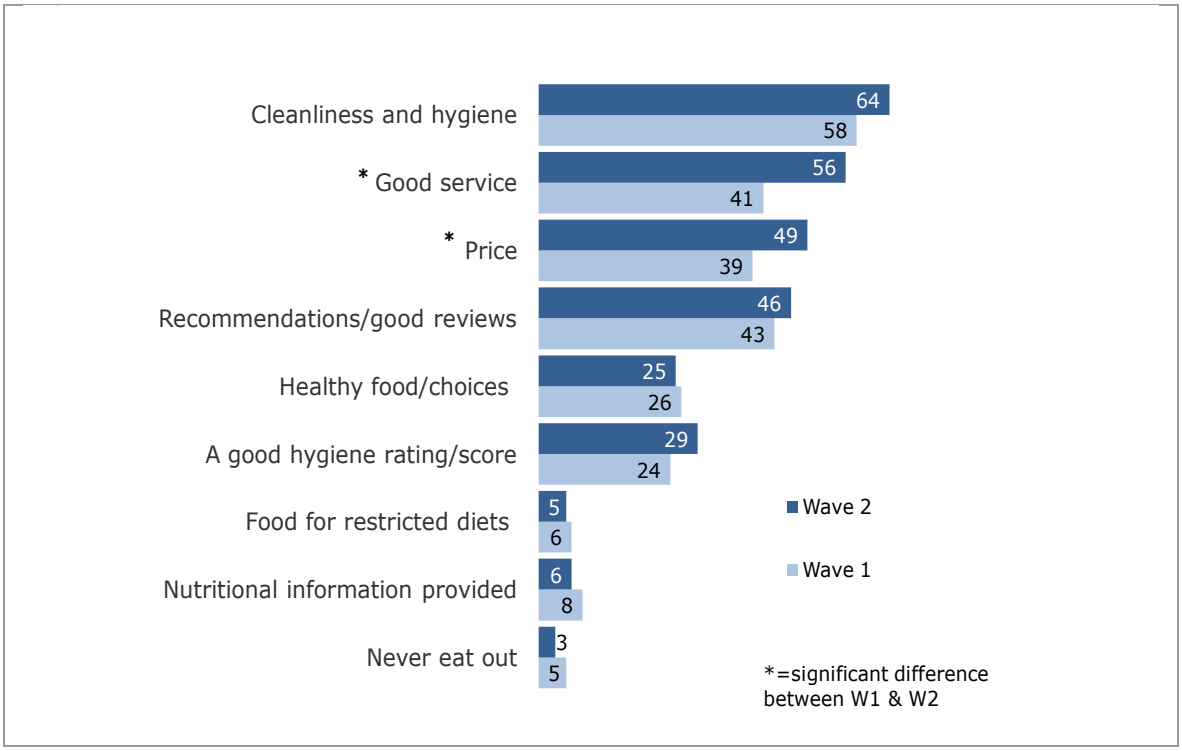
5.3 Perception of food safety and hygiene when eating out

Respondents (aside from those who said that they never eat out at all) were asked how safe they considered food to be when eating out compared with eating at home. Just over a third (36%) of respondents felt food was less safe when eating out compared with eating at home and only 5% considered food to be safer when eating out. Half (53%) said that they felt there was no difference.

Respondents were shown a list of factors that might affect their choice of where to eat out or purchase take-away food and were asked to select those that they considered important. Two-thirds (64%) said that cleanliness and hygiene was a factor when deciding where to eat out, with good service (56%) and price (49%) also being prevalent deciding factors. The consideration of a good hygiene rating score was cited by 29% of respondents (Figure 5.2).

Between Wave 1 and Wave 2, there has been a considerable increase in the proportion mentioning good service (56% in Wave 2 compared with 41% in Wave 1) and price (49% in Wave 2 compared with 39% in Wave 1) as important factors when deciding where to eat out.

Figure 5.2 Importance of factors in deciding where to eat out (Wave 1 and Wave 2)



Source: Q2_35 Generally, when you're deciding where to eat out, which of the following are important to you?
Base: One third of total NI sample – Wave 1 (169); All NI respondents – Wave 2 (504)

Respondents were asked how aware they are of hygiene standards when eating out or purchasing takeaway food. A third (34%) of respondents stated that they were very aware and a further 44% said that they were fairly aware. These figures were not significantly different from those reported in Wave 1 (Figure 5.3).

Figure 5.3 Awareness of hygiene standards when eating out (Wave 1 and Wave 2)

Source: Q2_37 When you eat out, how aware would you say you generally are about standards of hygiene?
Base: All NI respondents who eat out - Wave 1 (159); All NI respondents who eat out – Wave 2 (482)

5.4 Awareness and use of hygiene standards indicators

5.4.1 Indicators of food hygiene standards

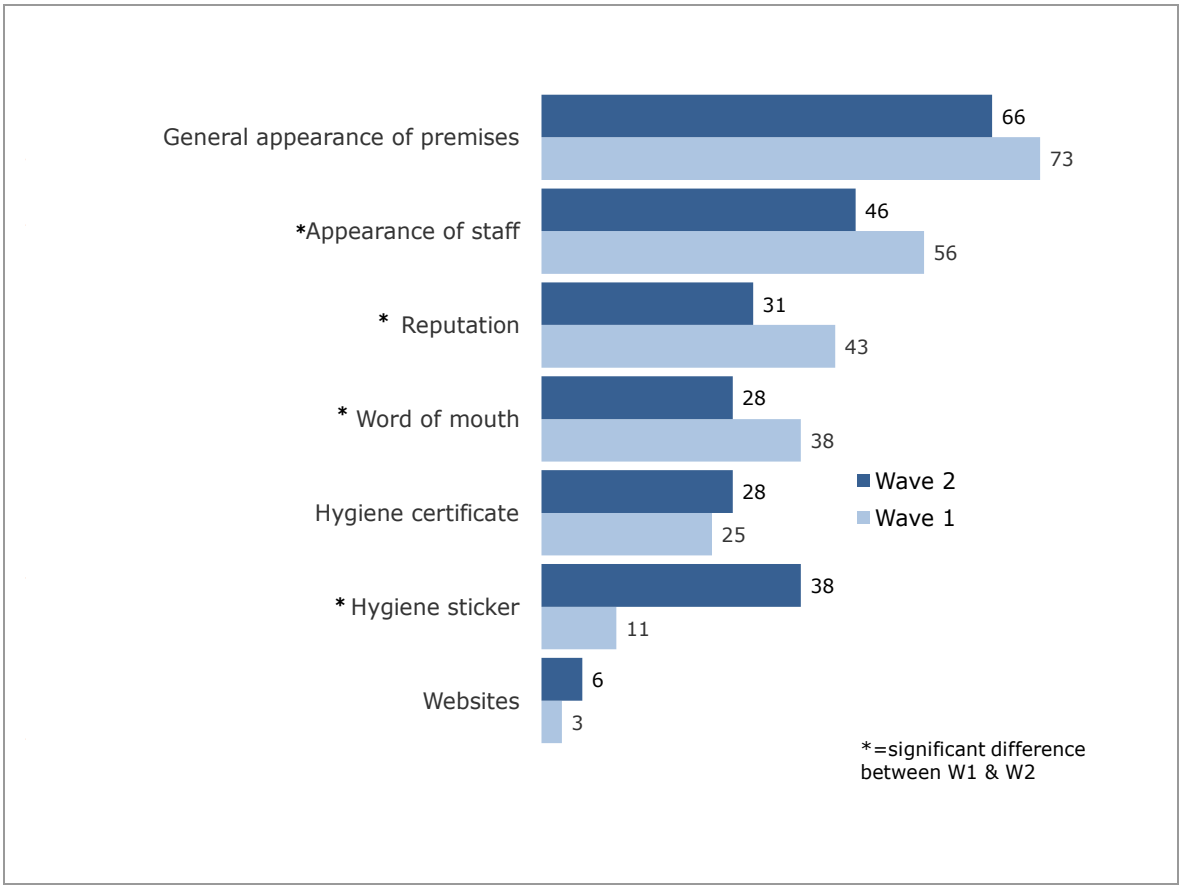
Those who said that they were aware of food hygiene standards at eating establishments were asked how they determined this, selecting responses from a prompted list[26]. The results from this question are displayed in Figure 5.4.

[26] These figures have been re-based on all respondents who ever eat out in order to display the total level of awareness of different sources

At Wave 2, as at Wave 1, respondents most commonly reported using appearance to judge the food hygiene standards of eating out establishments; the most commonly cited indicators being general appearance of premises (66%) and appearance of staff (46%). Thirty-eight per cent mentioned that they use hygiene stickers.

Compared to Wave 1, a smaller proportion of respondents mentioned using the appearance of staff, reputation and word of mouth as indicators of hygiene standards. In contrast to this, the proportion of respondents who said they used hygiene stickers as an indicator of the hygiene standards of the places they eat out at or buy food from has substantially increased from 11% in Wave 1 to 38% in Wave 2 (up 27 percentage points).

Figure 5.4 Indicators used to inform hygiene standards – based on all respondents (Wave 2)

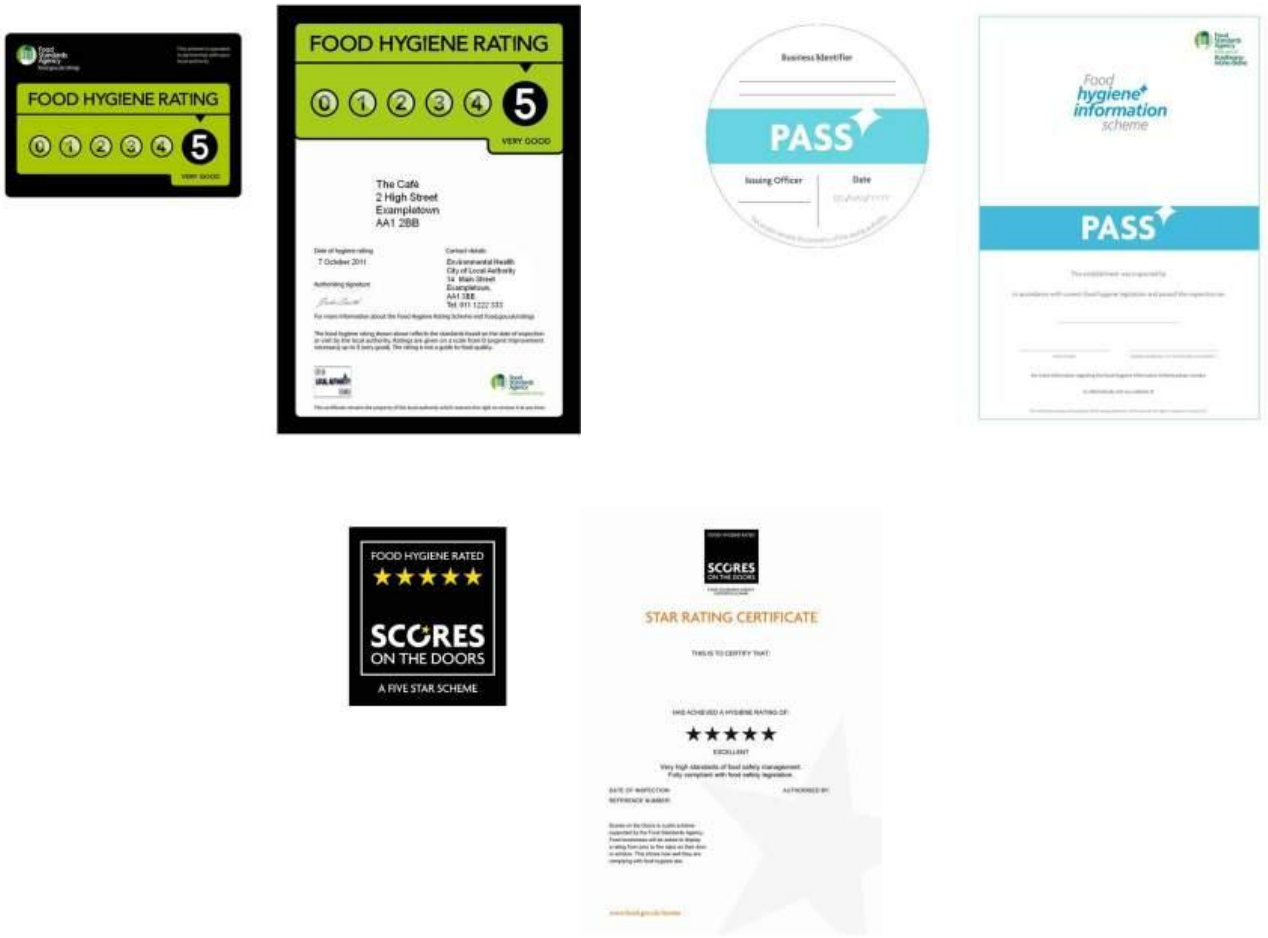


Source: Q2_38 How do you know about the hygiene standards of the places you eat out at or buy food from?
Base: All NI respondents who eat out and are aware of hygiene standards– Wave 1 – a third of NI sample (140); Wave 2 (420)

5.4.2 Recognition and use of the food hygiene rating scheme

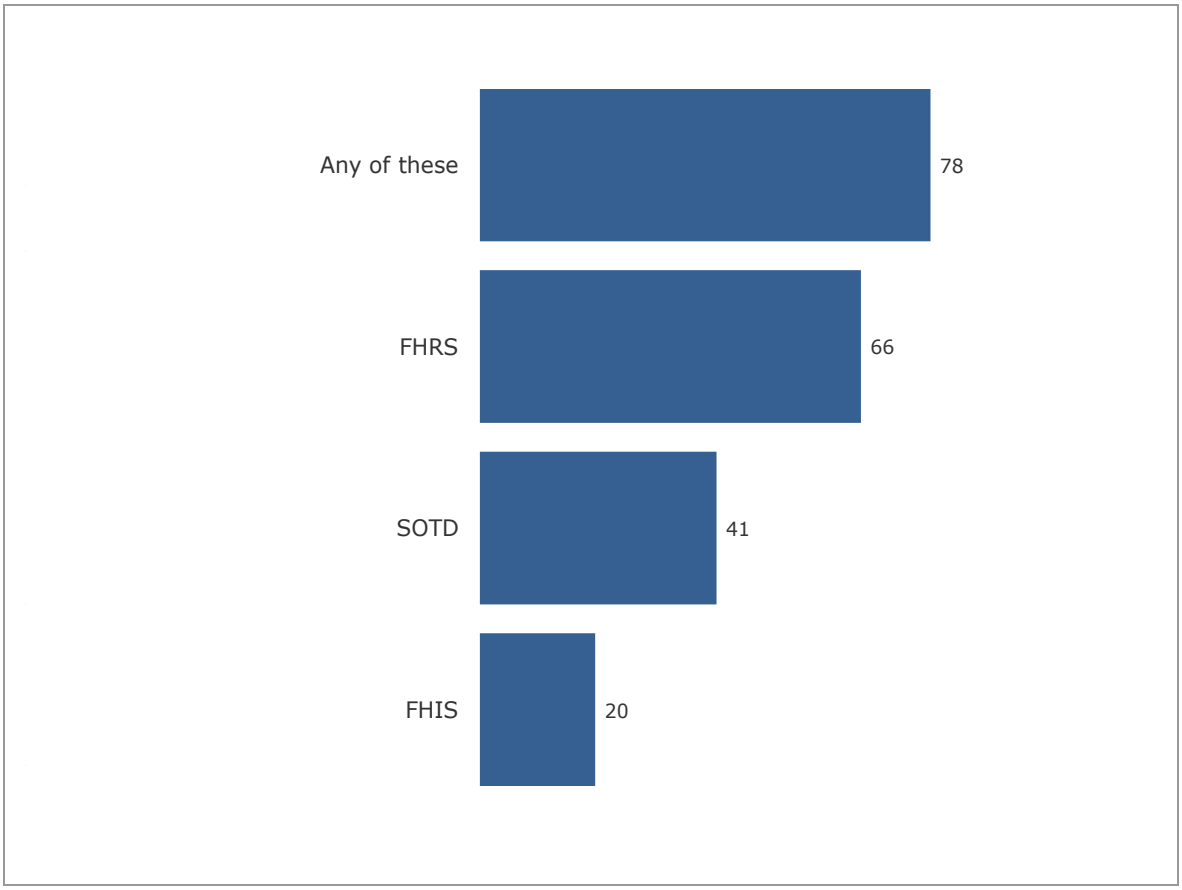
Respondents were shown images of certificates and stickers for the Food Hygiene Rating Scheme (FHRS), the Food Hygiene Information Scheme (FHIS) and Scores on the Doors (SoTD)[27] and were asked whether they had ever seen them before.

Overall, two-thirds of respondents (66%) in Northern Ireland reported having seen the sticker and/or certificate for the Food Hygiene Rating Scheme (which is the scheme used in Northern Ireland), 41% reported having seen the Scores on the Doors scheme before and 20% reported having seen the Food Hygiene Information Scheme sticker and/or certificate before. Seventy-eight per cent of respondents reported that they had seen *any* of these stickers/certificates before (See Figure 5.5).



[27] This last scheme is a set of locally delivered schemes which local authorities have replaced with the national FHRS/FHIS scheme. It was decided to include it in the question as it was the most widespread initiative outside of the FHRS/FHIS.

Figure 5.5 Recognition of stickers and/or certificates belonging to different food hygiene rating schemes



Source: Q12_1 Have you ever seen this before?
Base: All NI respondents (504)

5.4.3 Where the certificate / sticker had been seen

Respondents who said that they had seen each of the three types of certificates / stickers before were asked, unprompted, where they had seen it. Overwhelmingly, the most common place respondents reported seeing any of the three certificates and / or stickers was on the window or door of a food establishment. This was the answer given by 93% for the Food Hygiene Information Scheme, 92% for the Food Hygiene Rating Scheme and 91% for Scores on the Doors.

Table 5.1 Where respondents had seen the three scheme images (Wave 2)

	FHRS	FHIS	SOTD
Window/door of establishment	*92%*	*93%*	*91%*
Website/Internet	*6%*	-	*4%*
Newspaper/magazine	*4%*	-	*4%*
Other	*4%*	*7%*	*2%*
Base	*322*	*85*	*187*

Source: Q12_2 Where have you seen this image?
Base: All NI respondents who have seen the image before

5.4.4 Use of food hygiene rating schemes

After being shown stickers and certificates from the three hygiene standards schemes, respondents were asked if they had used a scheme like this in the past 12 months. Just over a quarter (27%) reported that they had. Of those that had used a scheme, 90% said they had checked the rating on a food establishment door or window and 24% had checked a rating online. Almost all of those that had used the scheme reported that they had found it helpful (96%), with two-thirds saying it had been very helpful (64%).

5.4.5 Variation in awareness of hygiene standards and hygiene certificates and/or stickers by different groups in the population

Looking at **gender**, women and men were equally as likely to mention hygiene / cleanliness as a factor when deciding where to eat out. However, women were more likely than men to say they were aware of hygiene when deciding where to eat out – 84% of women said they were very or fairly aware, compared with 72% of men. There was little difference by gender in terms of awareness of the various food hygiene rating scheme stickers / certificates, except for SoTD, which men were more likely to say they had seen before compared to women (48% compared with 33%).

Differences in awareness of hygiene standards and hygiene certificates and / or stickers by **age** were mixed. Respondents aged 45-54 were most likely to report hygiene and cleanliness as being important when deciding to eat out (76%) and those aged 16-24 least likely (48%). Those aged 45-54 were also most likely to say they were very aware of hygiene when eating out (42%, and 16-24s least likely (23%). However, younger respondents (aged 16-24) were more likely to report they had seen the FHIS, the FHRS and the SoTD certificates and / or stickers before (33%, 82% and 51% respectively) than those aged 60 and over (12%, 42% and 26%).

5.5 Comparisons between Northern Ireland and the rest of the UK

Three quarters (73%) of respondents in Northern Ireland had eaten out in the last week; this was similar to the proportion who said they had done so in England (76%), Scotland (69%) and Wales (69%). In terms of where people ate out, respondents in Northern Ireland were typically not found to be different to those living in other countries. The only exception was for eating in a pub; 5% of respondents in Northern Ireland had reported doing this in the last week compared with 20% in England.

As shown in Table 5.2, respondents in Northern Ireland were more likely than those in England or Wales to report that the safety of the food when eating out is 'about the same' as eating at home. Those living in England and Wales were more likely to say that they thought the safety of food when eating out was a bit or a lot less safe than when eating at home (48% and 55% of respondents in England and Wales respectively compared with 36% of respondents in Northern Ireland).

Table 5.2 Perception of food safety when eating out compared with eating at home, by country (Wave 2)

	Northern Ireland	England	Wales	Scotland
About the same	*53%[EW]*	*41%*	*33%*	*49%*
A lot/bit less safe when I eat out	*36%*	*48%[NI]*	*55%[NI]*	*42%*
Base	*(482)*	*(2032)*	*(98)*	*(485)*

Source: Q2_39 When you eat out, how safe would you say the food that you eat is, compared to when you eat at home?
Base: All respondents who eat out
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

As shown in Table 5.3, respondents in Northern Ireland were more likely than those living in Scotland to say that a good hygiene rating is important when deciding where to eat out (29% compared with 19% of respondents in Scotland).

Table 5.3 Importance of hygiene factors in deciding where to eat out, by country (Wave 2)

	Northern Ireland	England	Scotland
A good hygiene rating/score	*29%[S]*	*26%*	*19%*
Base	*(504)*	*(2116)*	*(507)*

Source: Q2_35 Generally, when you're deciding where to eat out, which of the following are important to you?
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

Table 5.4 shows the breakdown by country of how aware respondents said they were of standards of hygiene when eating out. Respondents living in Northern Ireland were more likely to report that they were aware (either fairly or very aware) of hygiene standards when eating out compared to respondents in England (78% compared with 71%).

Table 5.4 Awareness of hygiene standards when eating out, by country (Wave 2)

	Northern Ireland	England	Scotland
Very/fairly aware	*78%[E]*	*71%*	*77%*
Very/fairly unaware	*13%*	*19%[NI]*	*12%*
Base	*(482)*	*(2032)*	*(485)*

Source: Q2_37 When you eat out, how aware would you say you generally are about standards of hygiene?
Base: All respondents who eat out
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

Those who said they were aware of food hygiene standards when eating out were asked how they determined this, selecting responses from a prompted list. Looking at differences by country (shown in Table 5.5), respondents in Northern Ireland were much more likely to have referred to hygiene stickers than those in the other countries (38% of respondents in Northern Ireland compared to 9%-18% of respondents in England, Wales and Scotland). The proportion of respondents who mentioned hygiene certificates was not found to vary significantly by country.

Respondents in Northern Ireland were less likely to mention general appearance, appearance of staff and reputation as indicators of hygiene standards than respondents in England. See Table 5.5 for full details.

Table 5.5 Indicators used to inform hygiene standards, by country (Wave 2)

	Northern Ireland	England	Scotland
General appearance of premises	*66%*	*78%*[NI]	*73%*
Appearance of staff	*46%*	*58%*[NI]	*57%*[NI]
Reputation	*31%*	*41%*[NI]	*37%*
Word of mouth	*28%*	*32%*	*32%*
Hygiene certificate	*28%*	*28%*	*23%*
Hygiene sticker	*38%*[EWS]	*16%*	*9%*
Websites	*6%*[S]	*6%*	*2%*
Base	*(420)*	*(1687)*	*(423)*

Source: Q2_38 How do you know about the hygiene standards of the places you eat out at or buy food from?
Base: All respondents who eat out and are aware of standards of hygiene
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

A number of differences were also observed when looking at the proportion of respondents who reported having seen and used specific food hygiene initiatives before. This variation was expected, particularly as the FHRS is run in England, Wales and Northern Ireland and the FHIS is limited to Scotland, but also because the extent of publicity accompanying the launch of FHRS/FHIS varied between countries and local authorities. Wales and Northern Ireland conducted a public information campaign while local authorities in England and Scotland were mostly reliant on publicity through the local media. Publicity for the FHRS has been particularly widespread in Northern Ireland.

Local authority participation in the FHRS is voluntary but since its launch in October 2010 the scheme has been adopted by 96% of local authorities across England, Wales and Northern Ireland. This includes all local authorities in Wales and 25 of the 26 in Northern Ireland. It is anticipated that 99% of local authorities across the three countries will be operating the FHRS by early summer 2013. It is also important to note that it is not mandatory for food establishments to display their hygiene rating sticker or certificate.

As shown in Table 5.6, respondents in Northern Ireland were more likely than those living in the other three countries to report that they had seen the FHRS (66% compared to 33% and 43% in England and Wales and 12% in Scotland) and SOTD (41% compared to 15%-26% in England, Wales and Scotland) stickers and certificates before. Those living in Scotland were most likely to report having seen the FHIS certificate and sticker before.

Respondents living in Northern Ireland were also found to be more likely than others to have used a Food Hygiene Rating Scheme in the last 12 months (Table 5.6).

Table 5.6 Awareness of Food Hygiene Rating Schemes, by country (Wave 2)

	Northern Ireland	England	Scotland
Seen sticker/certificate before:			
Food Hygiene Rating Scheme	*66%[EWS]*	*33%*	*12%*
Food Hygiene Information Scheme	*20%*	*22%*	*44%[NI]*
Scores on the Doors	*41%[EWS]*	*26%*	*15%*
Used a Food Hygiene rating scheme in the last 12 months	*27%[EWS]*	*10%*	*6%*
Base	*(504)*	*(2116)*	*(507)*

Source: Q12_1 Have you ever seen this before? & Q12_3 In the last 12 months, have you used a food hygiene rating scheme to check an establishment's hygiene standards before deciding to visit?
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

Respondents who reported having used a rating scheme in the last twelve months were asked a couple of further questions about where they had checked ratings and how helpful they had found the schemes. There were no significant differences found in the responses to these questions between respondents in Northern Ireland and respondents in England (base sizes for Scotland and Wales were too small to analyse further at these questions.)

6. Experience of food poisoning and attitudes towards food safety and food production

This chapter covers experience of food poisoning, attitudes towards food safety and food hygiene, and examines whether levels of concern are associated with differences in behaviours and opinions. The latter part of this chapter focuses on new food technologies, how knowledgeable respondents felt they were about them and whether respondents felt uneasy about their use.

Summary

Food poisoning

- Almost a third (32%) of respondents reported that they had experienced food poisoning in the past, and 37% reported that, as a result of this, they had stopped eating at certain restaurants.

Attitudes towards food safety

- 61% of respondents said they did not worry too much about whether the food they had was safe to eat.
- 87% of respondents agreed with the statement that restaurants should pay more attention to food safety and hygiene.

Concern about food related issues

- Respondents were more concerned about food safety in imported products than food produced in the UK, and in particular imported meat; the proportion who said they were concerned about this was 59% compared with 28% for meat produced in the UK.
- 71% of respondents reported being concerned about food poisoning such as Salmonella or *E.coli*

Concern about new technologies

- There was substantial variation in reported awareness of new technologies involved in food production. Respondents reported being most aware about genetic modification (72%) and the least aware of nanotechnology (17%). Only a minority of respondents considered themselves to be knowledgeable about these technologies.
- Among those aware of each new technology, two-thirds (66%) of respondents reported being uneasy about animal cloning whereas respondents reported the lowest levels of unease for nanotechnology (41%).

Comparisons with the rest of the UK

- Respondents in Northern Ireland were less concerned than those in England about the overall safety of food imported from outside the UK (54% concerned compared with

61%), the safety of fruit and vegetables imported from outside the UK (35% compared with 44%).

- Respondents in Northern Ireland were less likely than those in Wales to be concerned about the safety of fruit and vegetables imported from outside the UK (35% compared with 53%), and about the safety of meat imported from outside the UK (59% compared with 76%).

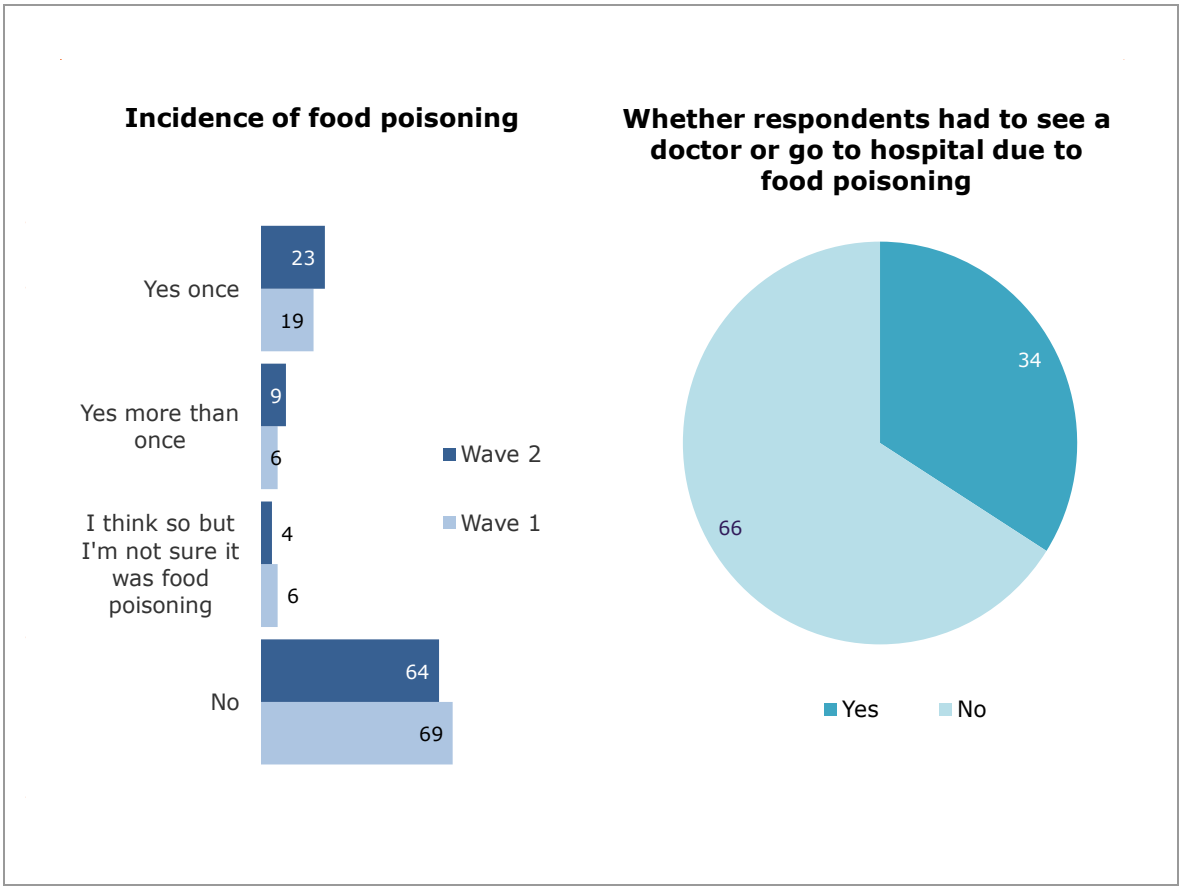
- Respondents in Northern Ireland were less likely to have heard of irradiation and Genetic Modification than respondents in England (72% compared with 81%). However, they were more likely than those in Scotland to have heard of animal cloning (64% compared with 55%).

6.1 Experience of food poisoning

Overall, a third (32%) of respondents reported that they had had food poisoning in the past (23% once and 9% more than once). Two-thirds (64%) of respondents said they had never had food poisoning and 4% were not sure. A third (34%) of those who had experienced food poisoning had to see a doctor or go to hospital as a result of their most recent episode. Results are shown in Figure 6.1.

There was no significant difference in the proportion of respondents who had reported having experienced food poisoning between Wave 1 and Wave 2.

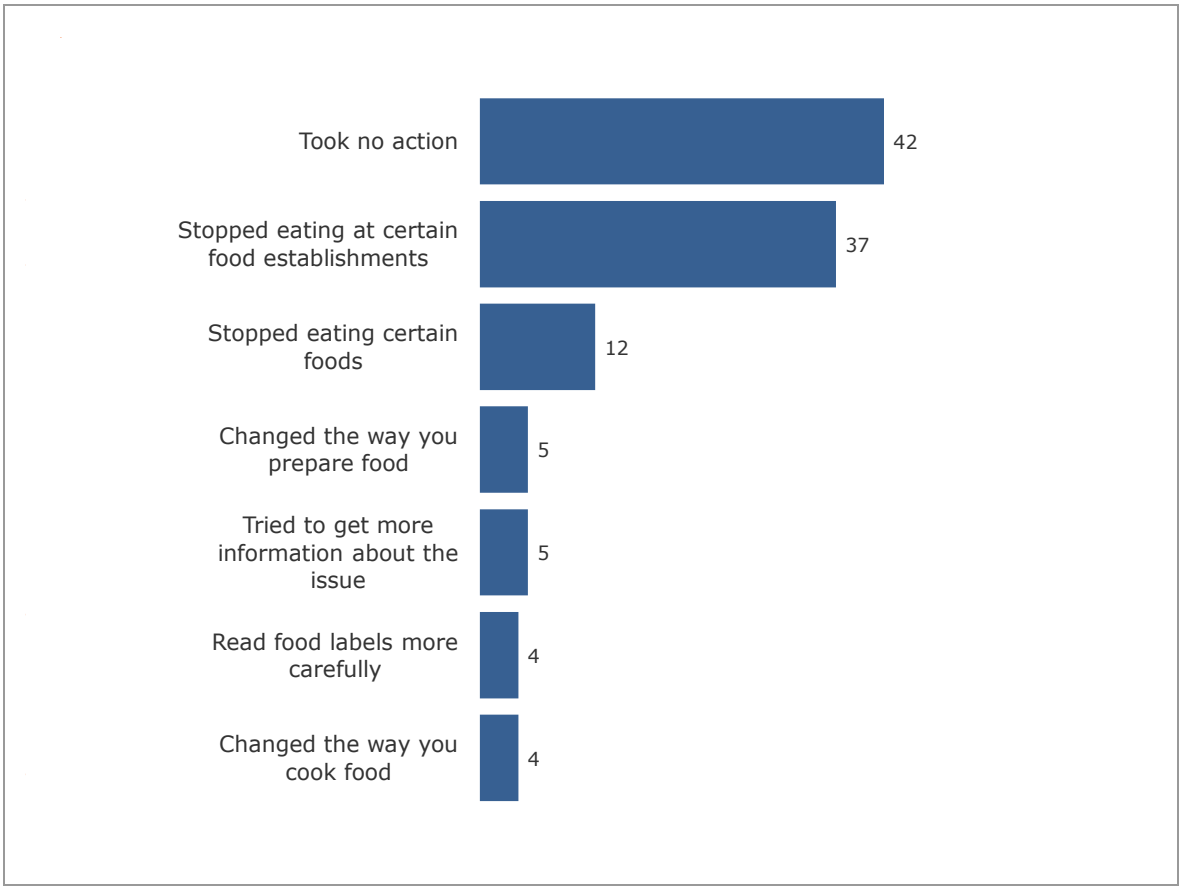
Figure 6.1 Experience of food poisoning (Wave 1 and Wave 2)



Source: Q4_28 Have you personally ever had food poisoning? & Q4_28A Thinking about the most recent occasion you had food poisoning, did you see a doctor or go to hospital because of it?
Base: Q4_28 All NI respondents - Wave 1(506); Wave 2(504) & Q4_28A All NI respondents who have had food poisoning Wave 2 (166)

As a consequence of their food poisoning, 37% of respondents stopped eating at certain food establishments and 12% stopped eating certain foods. Just under half (42%) of respondents reported that they took no action (Figure 6.2).

Figure 6.2 Actions taken as a result of food poisoning (Wave 2)



Source: Q4_28B In response to when you had food poisoning (most recently) have you done any of the following?
Base: All NI respondents who have had food poisoning - (166)

6.1.1 Variation in experience of food poisoning by different groups of the population

Men were more likely than women to report having experienced food poisoning (40% compared with 25%). There were no significant differences by gender in regards to whether respondents had gone to a doctor or hospital as result of their food poisoning.

Older respondents were more likely to report having experienced food poisoning. Eighteen per cent of respondents aged 16-24 reported ever having had food poisoning, increasing to 34% among those aged 25-34. Respondents aged 45-54 were most likely to report having experienced food poisoning (39%). There were no significant differences by age for whether respondents had gone to see a doctor or visited the hospital as a result of their food poisoning.

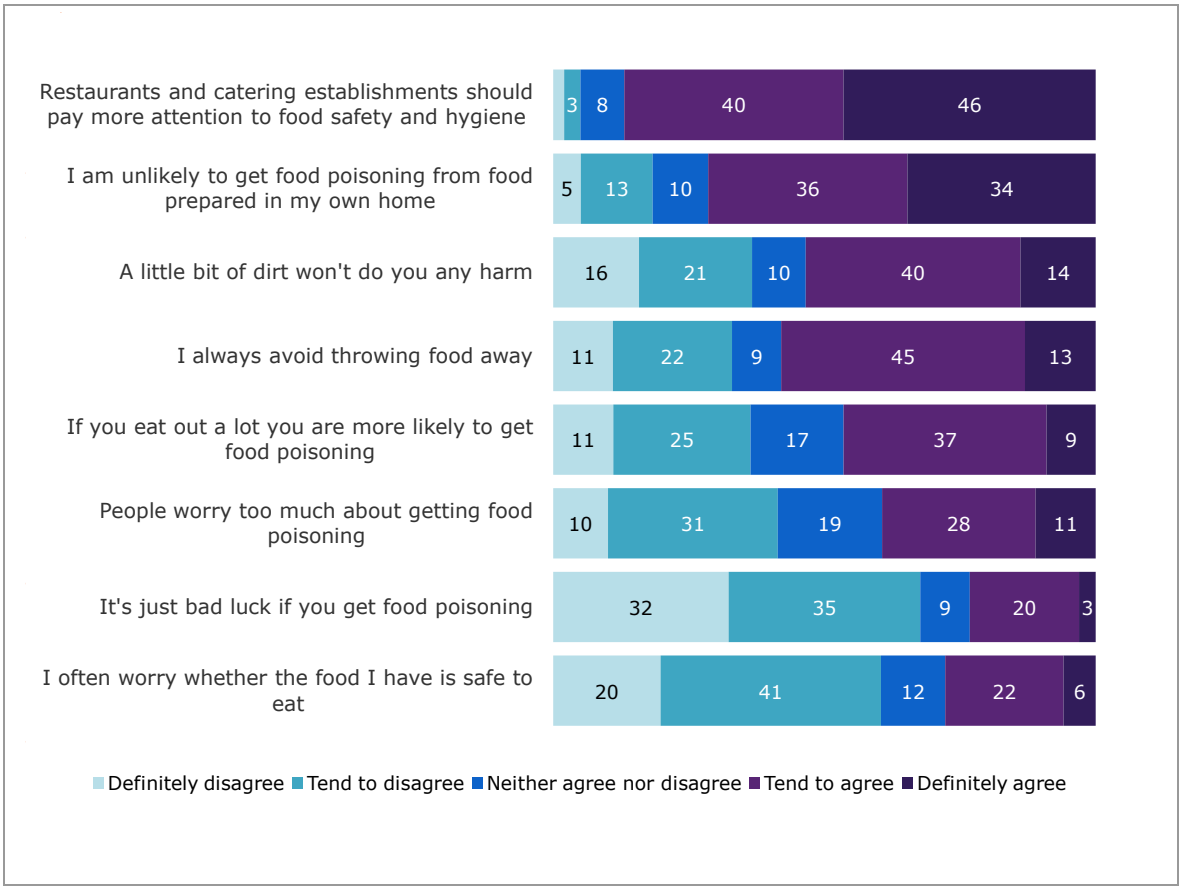
6.2 Attitudes towards food safety

Respondents were asked about the extent to which they agreed or disagreed with a range of statements relating to food safety.

Overall, 87% of respondents said they agreed that restaurants and catering establishments should pay more attention to food safety and hygiene. Seventy-one per cent agreed that they were unlikely to get food poisoning from food prepared at home, and half (54%) agreed that a little bit of dirt would not do any harm. Sixty-one per cent disagreed that they often worried about whether the food they had was safe to eat. The full results are shown in Figure 6.3.

Compared to Wave 1 the proportion of respondents that agreed that it's just bad luck if you get poisoning has decreased (from 31% to 23%).

Figure 6.3 Attitudes towards food safety (Wave 2)



Source: Q4_27 And now I will read out a few statements people have made and would like you to tell me whether or not you agree with them.
Base: All NI respondents - (504)

6.2.1 Variation in attitudes towards food safety by different groups in the population

Attitudes towards food safety were found to vary by age, with older respondents being more likely to agree that they are unlikely to get food poisoning from food prepared at home (83% for those aged 60 and over, decreasing to 50% for those aged 25-34 and 66% for those aged 16-24). Younger respondents aged 16-24 were much less likely to agree that a little bit of dirt won't do any harm, than respondents aged 60 and over (38% compared with 64%).

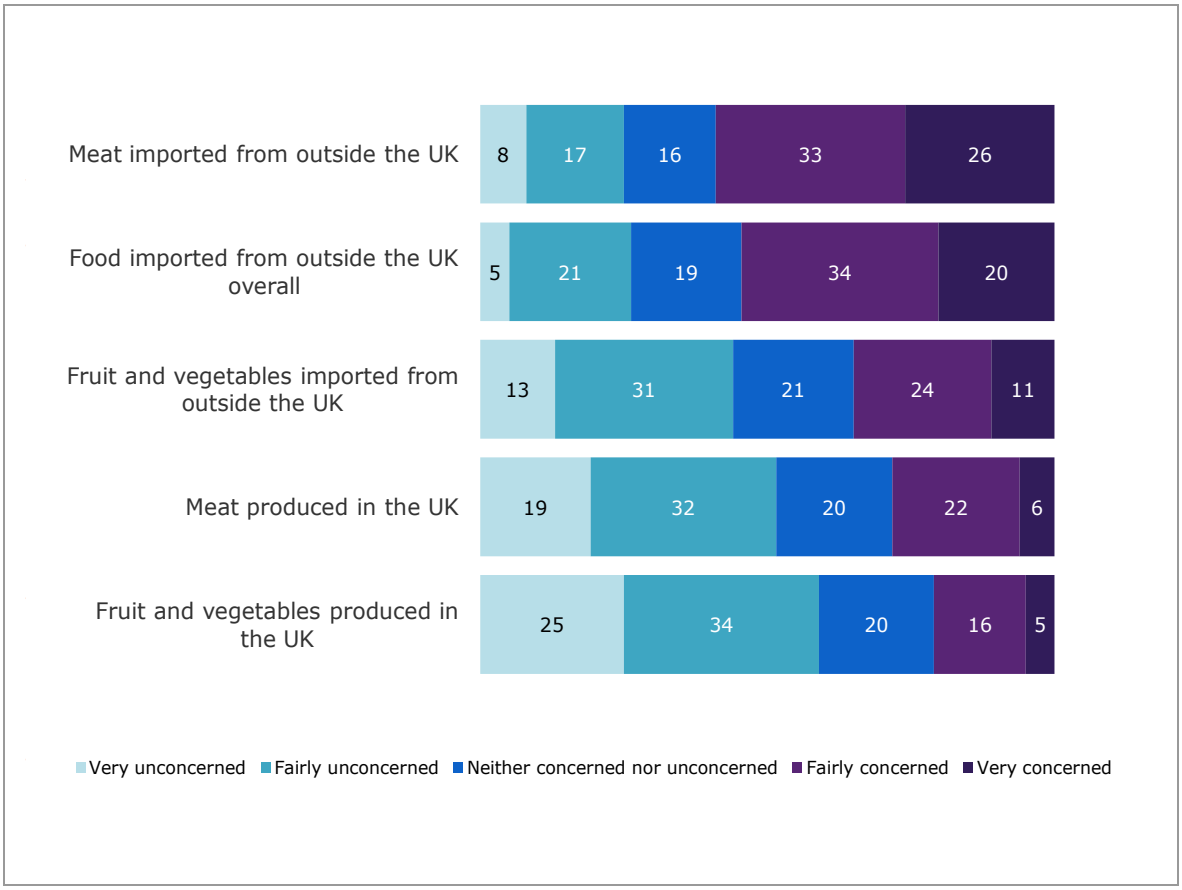
6.3 Concern about where food is produced and other food safety issues

6.3.1 Concern about where food is produced

Respondents were asked how concerned they were about food produced in the UK and food imported from outside the UK. Around half (46%) of respondents said that they were unconcerned about the safety of food produced in the UK, although a third (30%) said they were concerned (Figure 6.4).

There tended to be more concern about food imported from outside the UK, and in particular meat rather than fruit and vegetables. Fifty-nine per cent of respondents expressed concern about the safety of meat imported from outside the UK and a quarter (26%) said they were unconcerned about it. Only 8% of respondents said they were very concerned about meat produced in the UK.

Figure 6.4 Concern about where food is produced (Wave 2)

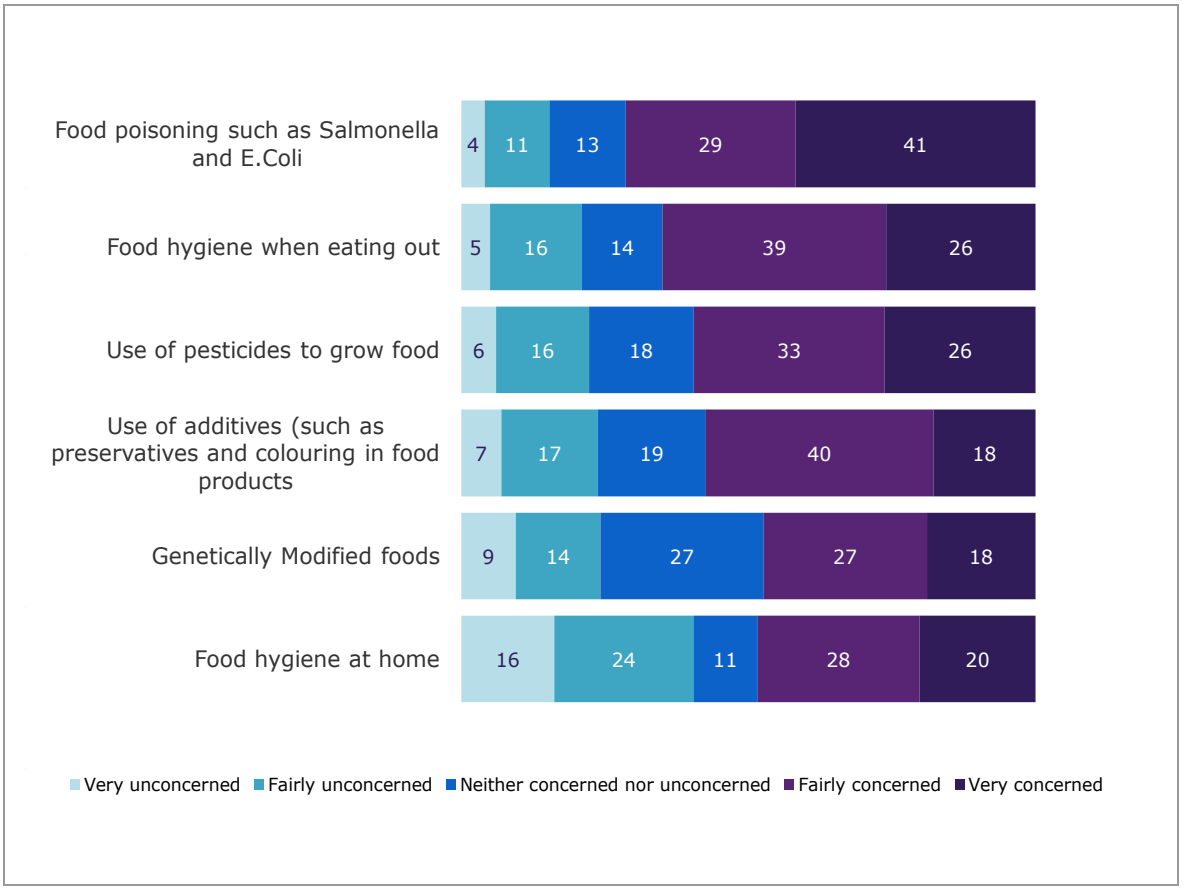


Source: Q9_2 Please tell me the extent to which you are concerned or unconcerned by each of the following issues…
Base: All NI respondents - (504)

6.3.2 Other food safety related issues

Respondents were also asked how concerned they were about a range of specific issues including food poisoning, the use of pesticides and Genetically Modified (GM) foods. For all issues, a higher proportion of respondents reported being concerned than unconcerned. The highest levels of concern were expressed in relation to food poisoning such as Salmonella and *E.coli* (71%) and food hygiene when eating out (65%) Respondents were least concerned about food hygiene at home (48%) and Genetically Modified foods (45%). Figure 6.5 shows the full results.

Figure 6.5 Other food safety related issues (Wave 2)



Source: Q11_3 Please tell me the extent to which you are concerned or unconcerned by each of the following issues?

Base: All NI respondents (504)

6.3.3 Actions taken as a result of food concerns

Respondents who said they were concerned about a food related issue were then asked what they did, if anything, as a result of their concern. The most common answer for all issues was to take no action.

Generally, if people did take any actions as a result of their food concern, the most frequently reported action was reading food labels more carefully (Table 6.1).

Those concerned about food hygiene when eating out paid more attention to the cleanliness of establishments (25%) or checked the hygiene ratings more (21%).

Table 6.1 Actions taken as a result of food concerns (Wave 2)

	Top answer	Second	Third
Food poisoning (e.g. salmonella and *E.Coli*)	Took no action (56%)	Read food labels more carefully (21%)	Changed way food is prepared (11%)
GM foods	Took no action (64%)	Read food labels more carefully (18%)	Read about the issue but did not seek out information (10%)
Use of pesticides	Took no action (64%)	Read food labels more carefully (15%)	Read about the issue but did not seek out information (9%)
Use of additives	Took no action (52%)	Read food labels more carefully (33%)	Stopped eating certain foods (11%)
Food hygiene at home	Took no action (71%)	Read food labels more carefully (15%)	Changed the way food is prepared (13%)
Food hygiene when eating out	Took no action (47%)	Paid more attention to the cleanliness of food establishments (25%)	Checked the hygiene ratings of food establishments more (21%)

Source: Q11_4 You have indicated that you are concerned about.... In response, have you done any of the following over the past year?
Base: All NI respondents who are concerned about the issue – food poisoning (337), GM foods (227), pesticides (299), additives (288), food hygiene at home (239), food hygiene when eating out (322)

6.3.4 Variation in concern about food safety and production issues by different groups in the population

When analysing by **gender,** no significant differences were found in the level of concern reported for food safety issues.

Age was a significant factor with older respondents expressing greater levels of concern on issues such as food imported from outside of the UK. For example, among those aged 60 and over, 68% said that they were concerned about food imported from outside the UK compared with 39% of 16-24 year olds. Those aged 60 and over were also more concerned than younger age groups about a range of issues including the use of additives in food products (65% compared with 44%).

6.4 New food technologies

Despite there being EU regulations in place which ensure that food produced using new technologies, including genetic modification (GM), undergo a safety assessment and approval before being placed on the market, there remains considerable debate and concern over the impact of such technologies on the long term health of both individuals and the environment. It is important, therefore, for the Agency to collect data on awareness, reported knowledge of and levels of unease about GM, and other new food technologies.

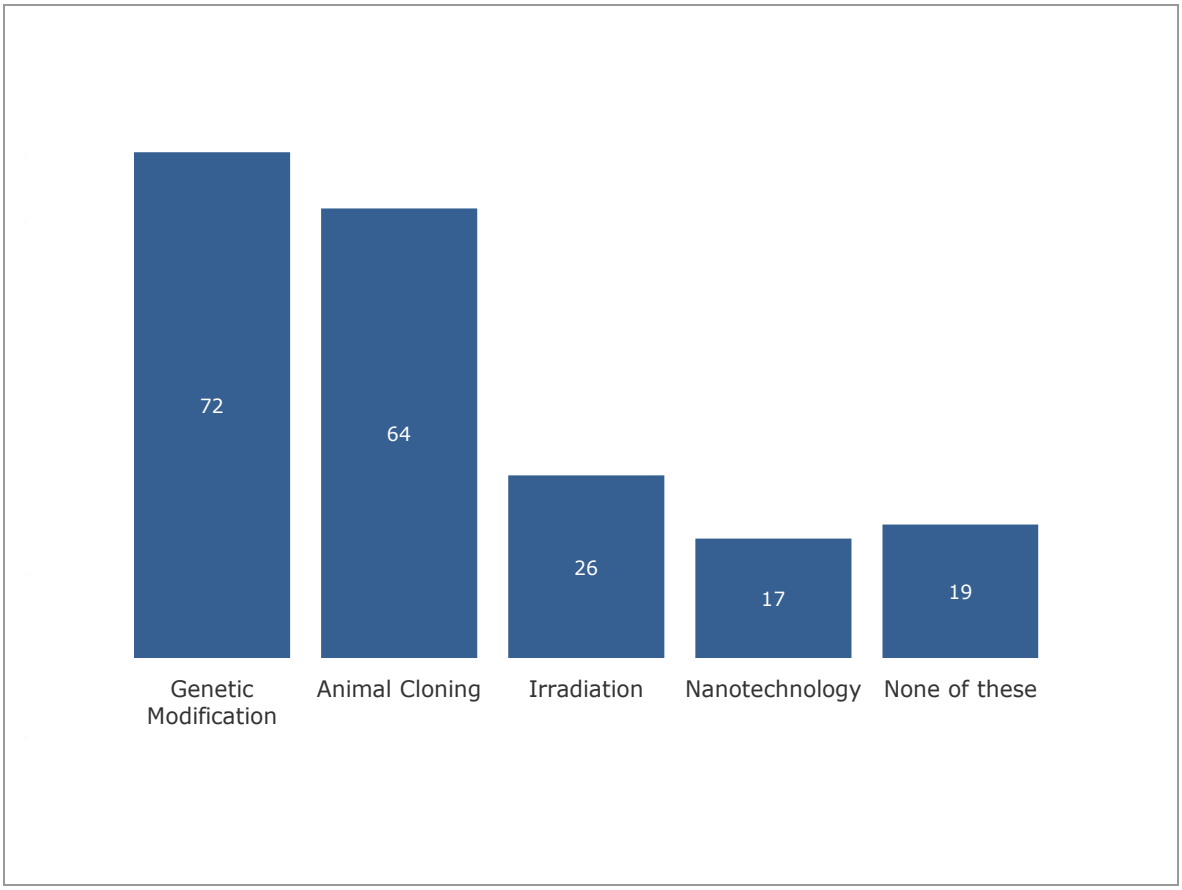
6.4.1 Awareness of new food technologies

Respondents were asked whether they were aware of four new food production techniques[28]. The most widely recognised was Genetic Modification with three quarters (72%) of respondents saying they were aware of this. The least recognised technology was nanotechnology, which 17% of respondents had heard of. Two-thirds of respondents (64%) were familiar with animal cloning and irradiation was recognised by a quarter (26%)[29].

[28] These questions were asked before the questions reported in section 6.3.1 which asked about levels of concern for GM food. Therefore there is no risk that awareness levels of GM could have been raised by previous questioning.

[29] Genetic modification is the process of changing the DNA of any living thing (plants, animals or micro-organisms) in a way that does not occur in nature. Animal cloning is the creation of an animal (the clone) that is an exact genetic copy of an existing animal. Food irradiation is a processing technique that exposes food to electron beams, X-rays or gamma rays. The process produces a similar effect to pasteurisation, cooking or other forms of heat treatment, but with less effect on look and texture. Irradiated food has been exposed to radioactivity but does not become radioactive itself. Nanotechnology is the ability to understand and manipulate materials at the nanoscale, which is usually taken to mean between one and a hundred millionths of a millimetre.

Figure 6.6 Awareness of different methods of food production (Wave 2)

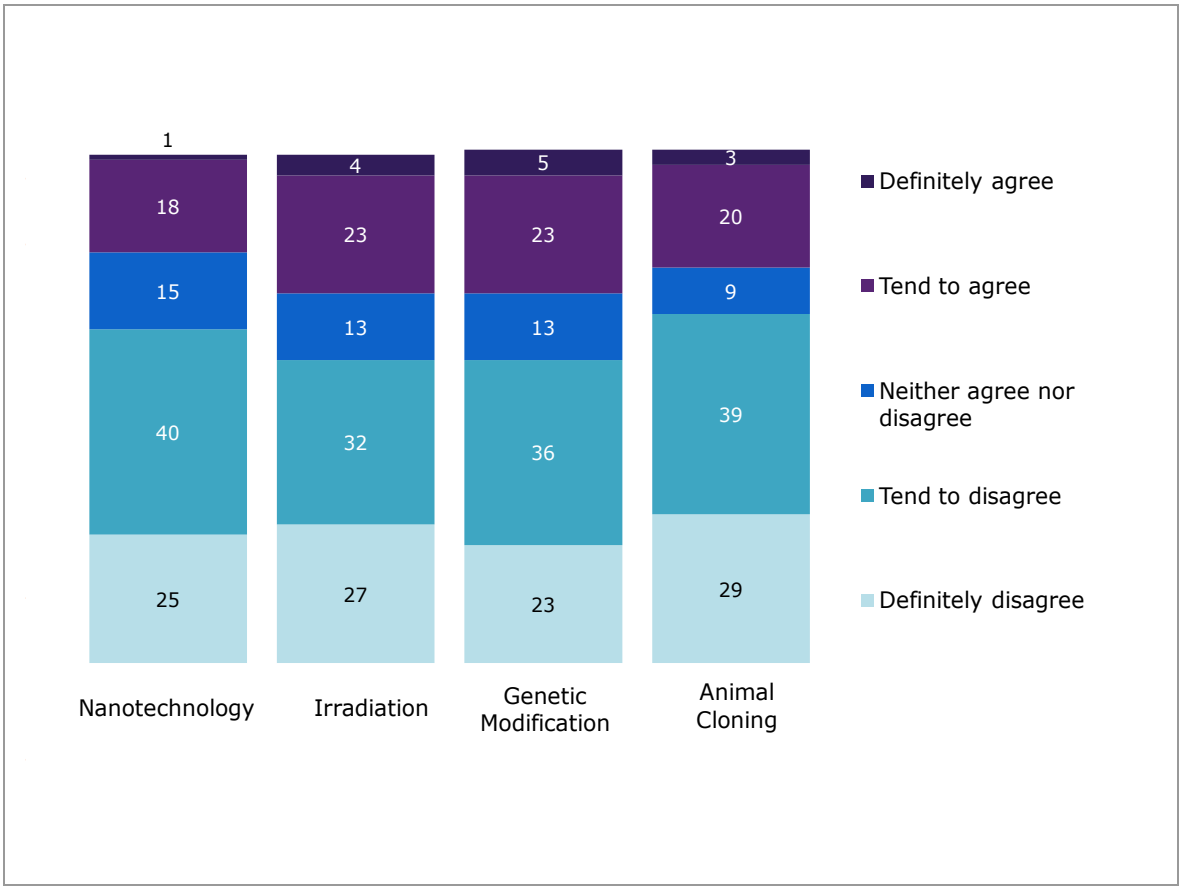


Source: Q8_3 Which of the following have you heard of in relation to food production?
Base: All NI respondents (504)

6.4.2 Knowledge of new food technologies

Respondents who said they had heard of each technology were then asked if they agreed or disagreed that they felt knowledgeable about the use of that technology in food production. Agreement was highest for Genetic Modification (28%) and irradiation (27%). Respondents felt the least knowledgeable about animal cloning (22%) and nanotechnology (19%) (Figure 6.7).

Figure 6.7 Knowledge of different methods of food production (Wave 2)



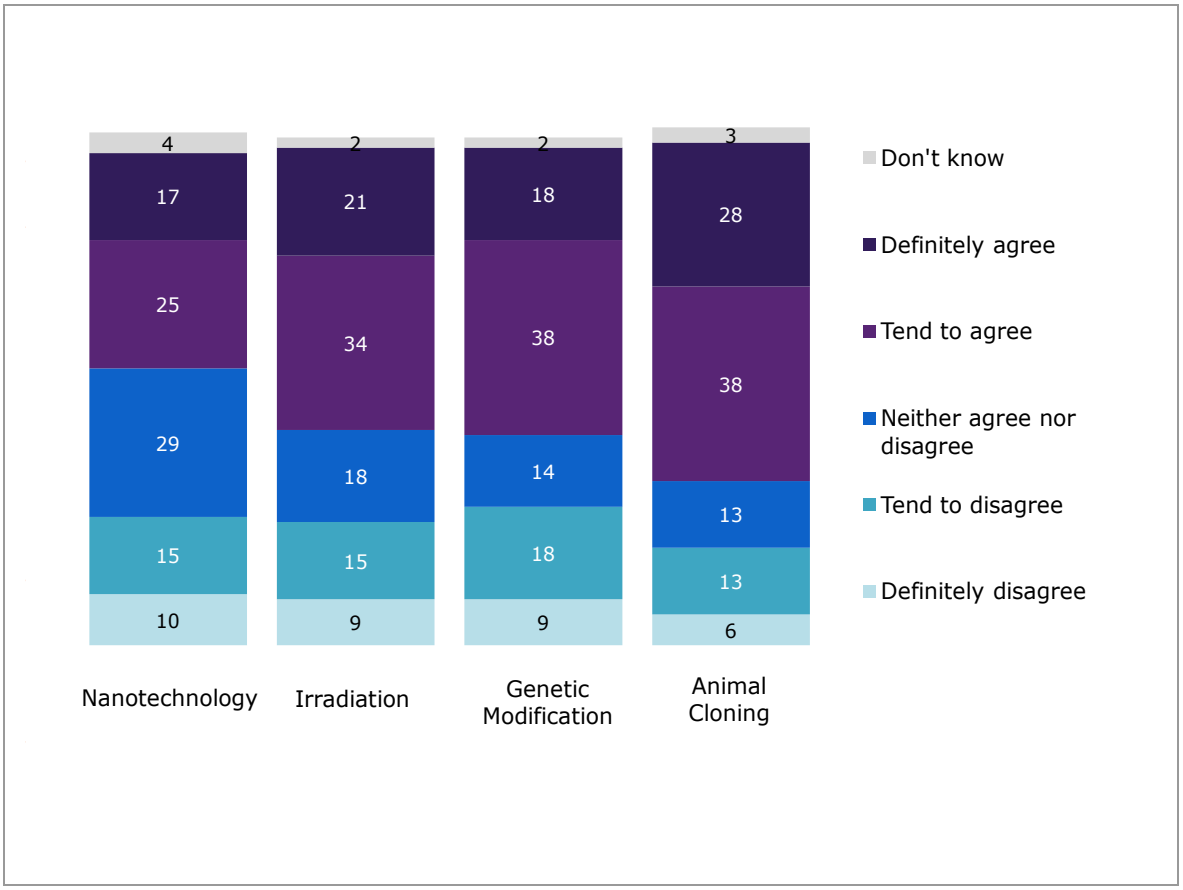
Source: Q8_4 How much do you agree or disagree with the following statement? I feel knowledgeable about the use of ... in food production
Base: NI respondents who had heard of each - Nanotechnology (77), Irradiation (123), Genetic Modification (348), Animal cloning (309)

6.4.3 Unease about new food technologies

Respondents who had heard of each food technology were also asked whether they agreed or disagreed that the use of it in food production made them feel uneasy.

Animal cloning was the technology that made people feel the most uneasy; two thirds (66%) of respondents who had heard of this agreed they were not comfortable with its use in food production. Respondents reported lower levels of unease for nanotechnology: 41% agreed that it made them feel uneasy, whilst 29% neither agreed nor disagreed that it made them feel uneasy. Full results are shown below in Figure 6.8.

Figure 6.8 Unease about different methods of food production (Wave 2)



Source: Q8_5 How much do you agree or disagree with the following statement? ...in food production makes me feel uneasy

Base: NI respondents who had heard of each - Nanotechnology (77), Irradiation (123), Genetic Modification (348), Animal cloning (309)

6.4.4 Variation in awareness, knowledge and reported uneasiness about new food production technologies by different groups in the population

Women were less likely than men to say they had heard of new food production technologies. For example, only 9% of women had heard of nanotechnology compared with 25% of men, 19% of women had heard of irradiation compared with 34% of men, and 67% had heard of genetic modification compared with 77% of men. In terms of how knowledgeable respondents felt about new food technologies, there were no significant differences across gender, nor was a difference apparent for how uneasy the use of the new technologies in food production made them feel.

There was some variation by **age,** with the youngest age group less likely to say they had heard of these technologies. For example, respondents aged 16-24 were less likely than older groups to have heard of animal cloning (45% compared with between 62% and 71% of the older groups), genetic modification (57% compared with 69-79% of older groups) and irradiation (11% compared with 23-36% of older groups). There were no significant

differences by age on the how knowledgeable respondents felt, or how uneasy they felt about the new food technologies.

6.5 Comparisons between Northern Ireland and the rest of the UK

Responses to questions about food poisoning were analysed by country. There were no significant differences in the reported incidence of food poisoning or in the proportion of those with food poisoning who sought medical attention.

There were some differences in attitudes to food safety and hygiene by country. Respondents in Northern Ireland were found to be more likely than respondents in Scotland to avoid throwing food away (58% compared with 47%) and were more likely than respondents in England to think that restaurants and catering establishments should pay more attention to food safety and hygiene (87% compared with 76%). Full results are shown below in Table 6.2.

Table 6.2 % Attitudes to food safety, by country (Wave 2)

% agreeing	Northern Ireland	England	Scotland
I always avoid throwing food away	*58%^{S}*	*52%*	*47%*
Restaurants and catering establishments should pay more attention to food safety and hygiene	*87%^{E}*	*76%*	*82%*
Base	*(504)*	*(2116)*	*(507)*

Source: Q4_27 And now I will read out a few statements people have made and would like you to tell me whether or not you agree with them.
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

Some variation by country was also apparent in levels of concern about where food is produced. Respondents living in Northern Ireland were less concerned than those in England about the overall safety of food imported from outside of the United Kingdom (54% concerned compared with 61%), the safety of fruit and vegetables imported from outside the UK (35% compared with 44%), and the safety of meat produced in the UK (29% compared with 34%).

Respondents living in Northern Ireland were also less concerned than respondents living Wales about the safety of fruit and vegetables imported from outside the UK (35% compared with 53%), and the safety of meat imported from outside the UK (59% compared with 76%). (See Table 6.3 for full details.).

Table 6.3 Concern about where food is produced, by country (Wave 2)

% concerned	Northern Ireland	England	Wales	Scotland
The overall safety of food imported from outside the UK	*54%*	*61%*^{NI}	*68%*	*53%*
The safety of fruit and vegetables imported from outside the UK	*35%*	*44%*^{NI}	*53%*^{NI}	*37%*
The safety of meat produced in the UK	*28%*	*34%*^{NI}	*34%*	*27%*
The safety of meat imported from outside the UK	*59%*	*62%*	*76%*^{NI}	*58%*
Base	*(504)*	*(2116)*	*(104)*	*(507)*

Source: Q9_2 To what extent are you concerned or unconcerned by...
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

When asked how concerned they were about a range of other food issues, respondents in Northern Ireland were less concerned than respondents living in England about the use of additives in food products (58% compared with 65% in England).

Table 6.4 Concern about other food safety related issues, by country (Wave 2)

% concerned	Northern Ireland	England	Scotland
The use of additives (such as preservatives and colouring) in food products	*58%*	*65%[NI]*	*58%*
Base	*(504)*	*(2116)*	*(507)*

Source: Q11_3 To what extent are you concerned or unconcerned by...
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

As shown in Table 6.5, respondents in Northern Ireland were less likely to have heard of irradiation and Genetic Modification than respondents in England (72% compared with 81%). However, they were more likely than those in Scotland to have heard of animal cloning (64% compared with 55%).

Table 6.5 Awareness of new technologies, by country (Wave 2)

% aware	Northern Ireland	England	Scotland
Genetic Modification (GM)	*72%*	*81%[NI]*	*70%*
Animal Cloning	*64%[S]*	*64%*	*55%*
Irradiation	*26%*	*35%[NI]*	*27%*
None of these	*19%[E]*	*12%*	*21%*
Base	*(504)*	*(2116)*	*(507)*

Source: Q8_3 Which of the following have you heard of in relation to food production?
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

In terms of how knowledgeable respondents felt about each technology and how uneasy they felt about each technology, there were no differences across the four countries.

7. Advice on healthy eating

This chapter presents information on awareness of messages included in Agency advice about healthy eating. The final section presents comparisons between respondents in Northern Ireland and Scotland[30].

Summary

The Eatwell plate

- A quarter (27%) of respondents in Northern Ireland placed all food groups in the recommended sections on the Eatwell plate, 63% placed three food groups and 3% placed two food groups in the recommended sections.
- Respondents were most likely to place…..followed by ….and…in the recommended sections of the eatwell plate.

Importance of a healthy lifestyle

- Three-quarters (74%) of respondents said that keeping to a healthy weight, and eating breakfast every day (75%) was very important for a healthy lifestyle

Recommended daily amounts

- Just over a quarter of respondents reported that the recommended intake for women is 2,000 calories a day (30%) and for men is 2,500 calories a day (28%).
- 90% of respondents reported that health experts recommend people should eat five portions of fruit and vegetables every day, this was an increase on Wave 1 (81%).
- A large majority of respondents reported that pure fruit juice (89%), tinned fruit or vegetables (88%), frozen vegetables (91%), fruit smoothies (79%), and dried fruit (83%) could count towards '5 a day' (in line with recommendations).
- 10% reported that the recommended maximum daily intake of salt adults should eat each day is 6g. Levels of awareness of the recommended maximum daily intake for fat were lower with only 1% of men and 6% of women giving an answer in line with Agency recommendation for their gender.

[30] There are no results for England or Wales in this section as the healthy eating questions were not asked to respondents in these countries.

7.1 Background

The Government in Northern Ireland provides advice on nutrition and healthy eating via the nidirect website[31]. In Northern Ireland the Food Standards Agency provides healthy eating advice on its website[32]. The advice centres on the eatwell plate and '8 tips for eating well', including advice on eating at least five portions of fruit and vegetables a day and the recommended maximum daily intake of salt for adults. There are also guidelines on recommended maximum intakes for fat and calories.

7.2 The eatwell plate

The eatwell plate illustrates the types and proportions of foods needed for a healthy balanced diet. It shows how much of a recommended diet should come from each food group. This includes: plenty of fruit and vegetables; plenty of bread, rice, potatoes, pasta and other starchy foods; some milk and dairy foods; some meat, fish, eggs, beans and other non-dairy sources of protein and a small amount of foods and drinks high in fat and/or sugar. The eatwell plate is shown below.

Respondents were shown a blank plate with the eatwell plate sections marked but not labelled, and were asked to place cards showing each of the food groups in the recommended section on the plate to represent what they thought was the recommended balanced diet.

Overall, 27% of respondents in Northern Ireland placed all five food groups in the recommended sections of the eatwell plate. Sixty- three per cent placed three of the five food groups and 3% placed two of the five food groups in the recommended sections of the eatwell plate. No respondents placed four of the five food groups in the recommended

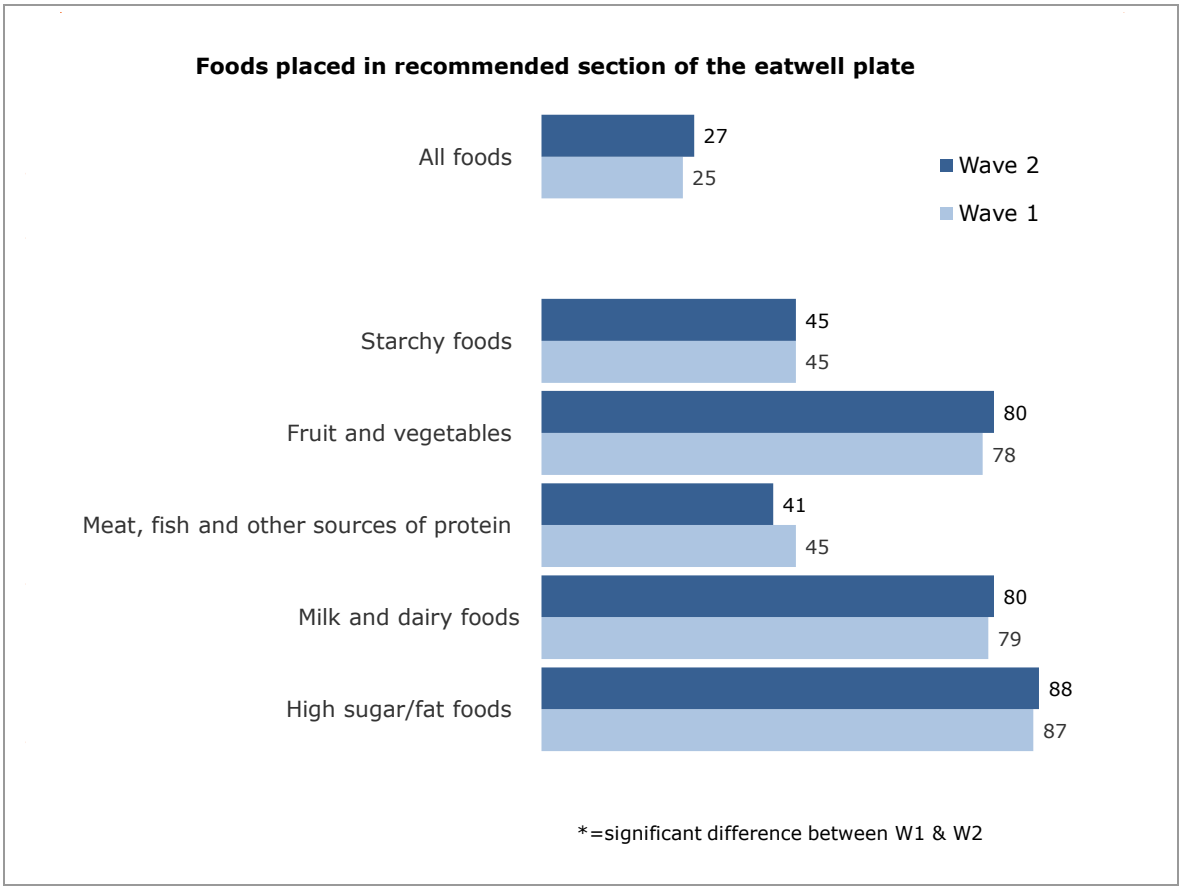
[31] http://www.nidirect.gov.uk/index/information-and-services/health-and-well-being.htm
[32] http://www.food.gov.uk/northern-ireland/nutritionni/

sections of the eatwell plate. Four per cent placed only one of the five food groups, and 3% did not place any food groups, in the recommended sections.

Respondents were most likely to place high sugar/ fat foods in the recommended section of the Eatwell plate (88%). Around 80% of respondents placed milk and dairy foods, and fruit and vegetables, in their recommended sections. The foods which people most commonly positioned in sections that were not in line with recommendations were starchy foods (45% put this in the recommended section) and meat, fish and other sources of protein (41% put this in the recommended section).

Results did not change significantly between Wave 1 and Wave 2.

Figure 7.1 Eatwell plate exercise (Wave 1 and Wave 2)



Source: H2_17 Eat well plate exercise
Base: All NI respondents - Wave 1(506); Wave 2(504)

7.3 Foods for a healthy lifestyle

7.3.1 The 8 tips for eating well

The Government's '8 tips for eating well' are shown in Table 7.1.

Table 7.1 The '8 tips for eating well'

The tip	Detail of advice
1. Base your meals on starchy foods	Most of us should eat more starchy foods - try to include at least one starchy food with each of your main meals
2. Eat lots of fruit and veg	Try to eat at least 5 portions of a variety of fruit and veg every day. It might be easier than you think
3. Eat more fish	Aim for at least two portions of fish a week, including a portion of oily fish.
4. Cut down on saturated fat and sugar	Try to choose more foods that are low in fat and cut down on foods that are high in fat. We should all be trying to eat fewer foods with added sugars, e.g. sweets, cakes & biscuits, and drinking fewer sugary soft & fizzy drinks
5. Try to eat less salt	No more than 6g a day for adults
6. Get active and try to be a healthy weight	Only eat as much food as you need. Make healthy choices - it's a good idea to choose low-fat & low-sugar varieties, eat plenty of fruit & veg & whole grains. Get more active
7. Drink plenty of water	Should be drinking about 6 to 8 glasses (1.2 litres) of water per day
8. Don't skip breakfast	

A number of measures were included in the survey to explore whether respondents were aware of, and followed, the '8 tips' advice. The headline survey findings relating to the '8 tips' are as follows:

Base your meals on starchy foods

- 73% of respondents reported eating starchy foods at least once a day. Six per cent reported eating them once or twice a week or less often
- 35% thought that eating foods such as bread, rice, pasta and potatoes was very important for a healthy lifestyle, and a further 54% that it was fairly important

Eat lots of fruit and veg

- 72% of respondents reported that they ate fruit and vegetables at least once a day. Seven per cent said that they ate these foods once or twice a week or less often
- 87% said that eating fruit and vegetables was very important for a healthy lifestyle
- 48% reported eating five or more portions of fruit and vegetables on the day before the interview

Eat more fish

- 46% reported eating oily fish, 10% shellfish, and 57% other fish (excluding shellfish), at least once a week
- 47% thought that eating fish was very important for a healthy lifestyle, and a further 42% thought it was fairly important

Cut down on saturated fat and sugar

- 78% said limiting food and drinks high in sugar was very important for a healthy lifestyle
- 79% said limiting foods high in saturated fat was very important, and 73% said this for total fat
- 39% reported eating biscuits, pastries and cakes at least once a day, and 18% reported eating fried chips or roast potatoes at least three or four times a week
- 6% of women and 1% of men stated that a maximum recommended daily allowance (RDA) for total fats that was in line with Agency guidance (95g for men and 70g for women)

Try to eat less salt

- 72% said eating less salt was very important for a healthy lifestyle
- 10% stated a maximum daily intake of salt for adults that was in line with Agency guidance (6g)

Get active and try to be a healthy weight

- 74% said keeping to a healthy weight was very important for a healthy lifestyle
- 30% stated the recommended maximum daily intake of calories for women was 2000 calories a day, and 28% said this was 2500 calories a day for men

Drink plenty of water

- 79% of respondents said that this was very important for a healthy lifestyle

Don’t skip breakfast

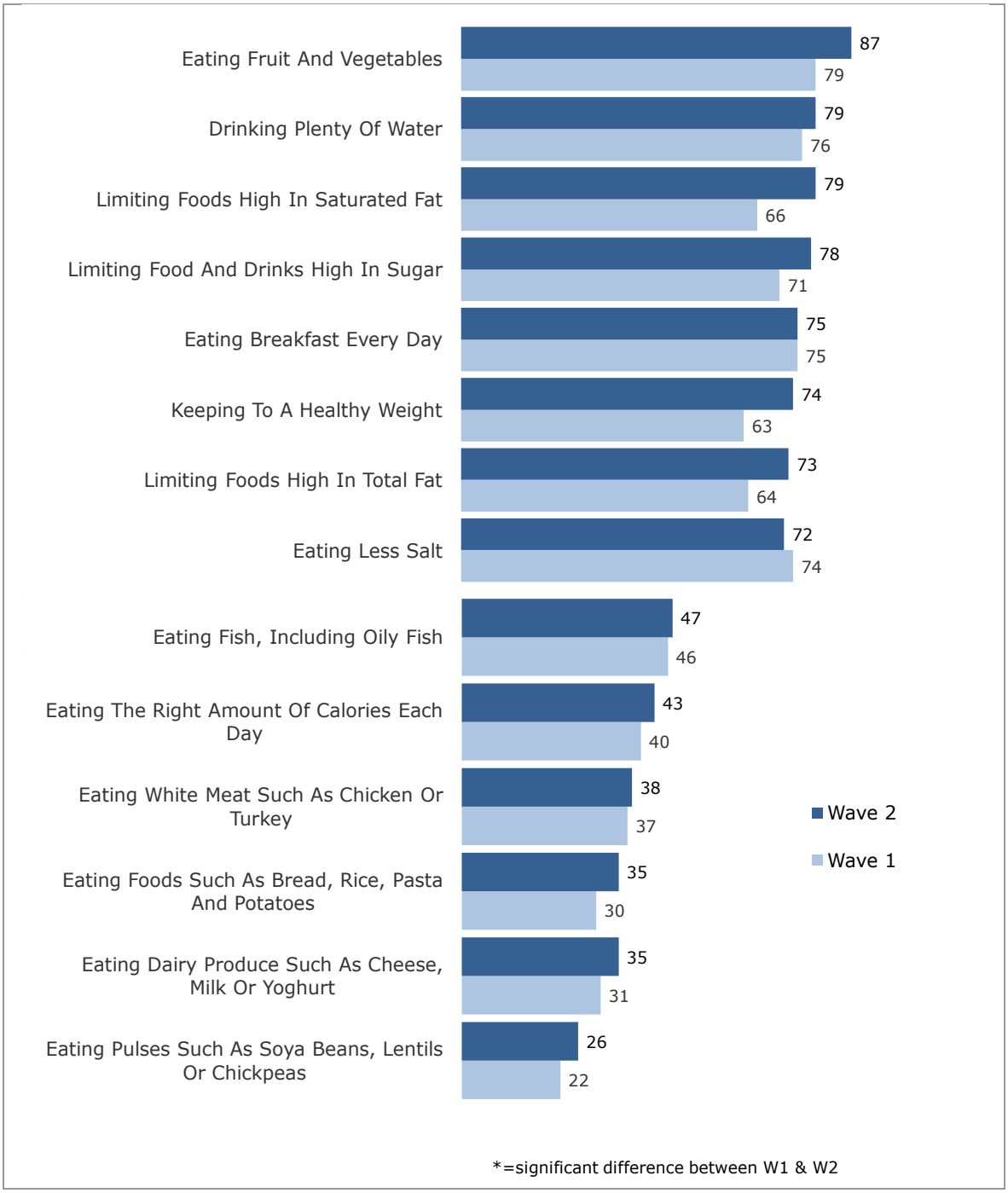
- 75% of respondents said that it was very important for a healthy lifestyle to eat breakfast every day.

7.3.2 Importance of different factors for a healthy lifestyle

All respondents were asked to say how important they thought a variety of factors were for a healthy lifestyle. These covered eating different foods such as fruit and vegetables, as well as other lifestyle factors such as keeping to a healthy weight. The proportion of respondents rating each of the food and eating habits factors as ‘very important’ is shown in Figure 7.2.

There were no significant changes between Wave 1 and Wave 2.

Figure 7.2 % answering very important for a healthy lifestyle (Wave 1 and Wave 2)



Source: H2_18 Thinking about adults, how important do you think the following are for a healthy lifestyle...
Base: All NI respondents - Wave 1(506); Wave 2(504)

7.3.3 Variation in results of the eatwell exercise and importance of healthy lifestyle by different groups in the population

There was little variation by **gender** when respondents were asked to place foods in the recommended sections on the Eatwell plate. The only significant difference found was that women were more likely to place the meat and fish in the recommended section than men, 48% compared with 33%. Gender differences were more apparent when looking at what factors are important for following a healthy lifestyle. Women tended to agree more than men that certain behaviours are important. For example, women were more likely than men to agree that eating fish (94% compared with 84%), eating dairy products (92% compared with 79%) and eating pulses (74% compared with 58%) are important in order to maintain a healthy lifestyle.

When looking at **age**, younger respondents were more likely to place the different foods in the recommended sections of the eatwell plate; over a third (38%) of 16-24 year olds placed all foods in the recommended sections compared with 17% of those aged 60 and over. There were no clear differences across the age groups when looking at what respondents said they thought was important for a healthy lifestyle. So whilst 92% of respondents aged 60 and over said eating fish was important compared with 72% of 16-24 year olds, 16-24 year olds were more likely than the respondents aged 60 and over to say that eating the right amount of calories each day is important (93% compared with 77%).

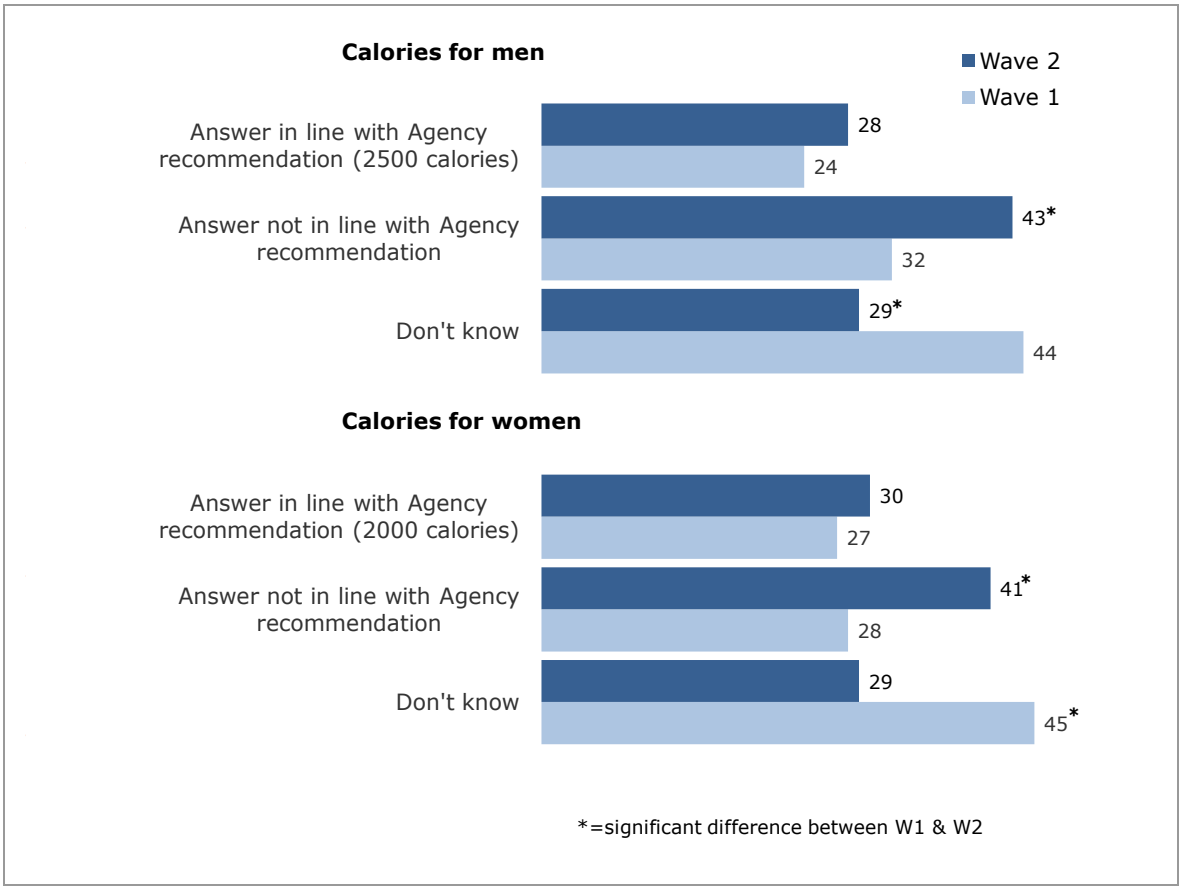
7.4 Awareness and understanding of recommended daily amounts

7.4.1 Calories

Respondents were asked what they thought the recommended number of daily calories for women and men is. **FSA guidance is that the average man should consume around 2,500 calories a day and the average woman around 2,000 calories a day.** Thirty per cent of respondents reported that the recommended number of daily calories if 2,000 for women, and 28% reported that the recommended number is 2,500 for men. Eighteen per cent stated that the recommended number of daily calories for women was between 1,000 and 1,500 and 15% said 2,000 calories was the maximum recommended number of daily calories for men.

Whilst the proportion of respondents who stated the maximum recommended number of daily calories for women was 2,000, and for men was 2,500, has not changed from Wave 1, there was a reduction in the proportion who stated they did not know and a corresponding increase in the proportion who gave a value that was not in line with Agency guidance.

Figure 7.3 Recommended number of daily calories for men and women (Wave 1 and Wave 2)



Source: H2_25 Can you tell me what you think is the recommended number of calories average women should eat a day? & H2_26 Can you tell me what you think is the recommended number of calories average men should eat a day?
Base: All NI respondents - Wave 1(506); Wave 2(504)

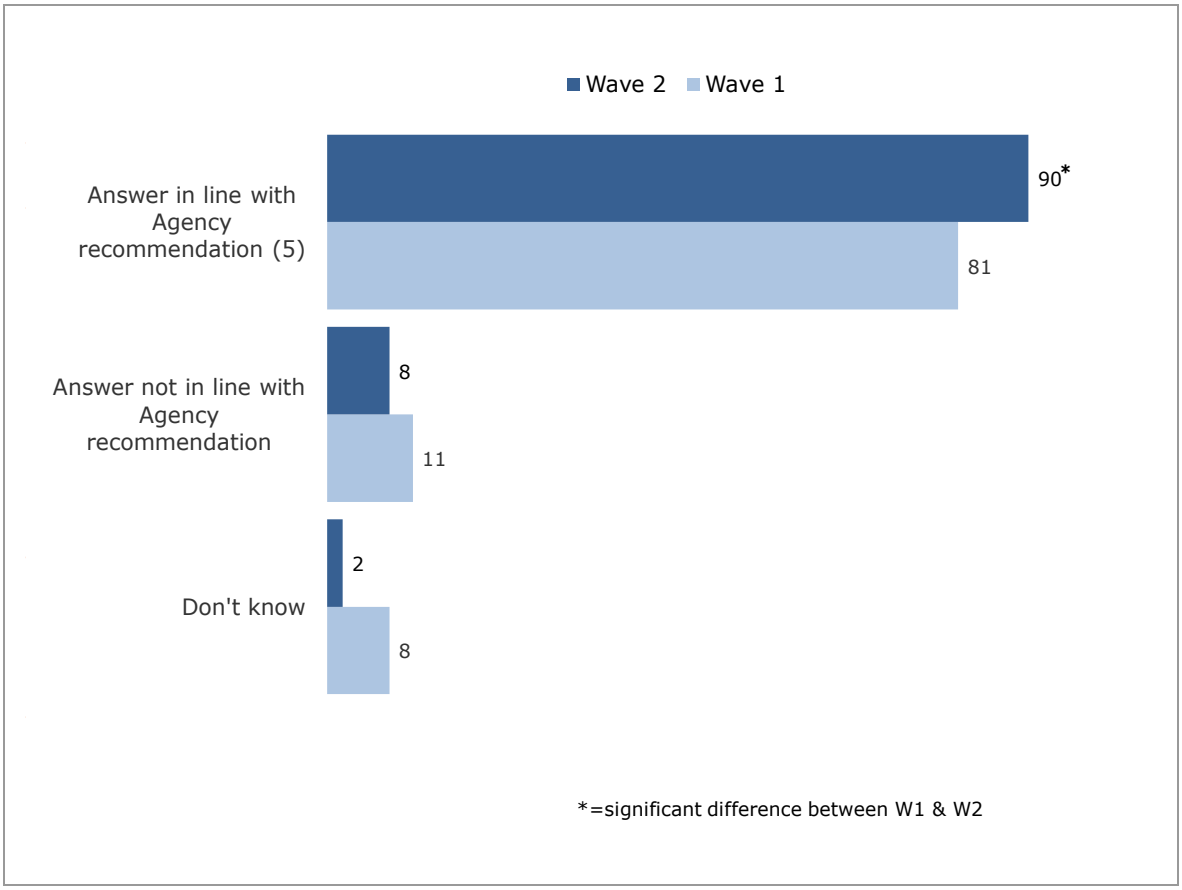
7.4.2 Fruit and vegetables

Respondents were asked how many portions of fruit and vegetables they thought that health experts recommend people should eat every day[33]. **FSA guidance is that people should aim to eat at least five portions of fruit and vegetables every day.**

Overall, 90% of respondents stated that the recommended number of portions was five; this is an increase compared to Wave 1 (81%). Most of those who gave an answer that was not in line with Agency guidance said that the recommended number of portions was under five (7%), with 2% saying it was more than five.

[33] In the questionnaire these questions were asked after the questions about knowledge and consumption, in order to avoid influencing respondents' answers.

Figure 7.4 Recommended fruit and vegetable consumption (Wave 1 and Wave 2)



Source: H2_9 How many portions of fruit and vegetables do you think that health experts recommend people should eat every day?
Base: All NI respondents - Wave 1(506); Wave 2(504)

Respondents were shown a list of different food items and asked whether they thought they could be counted towards the daily recommended fruit and vegetable intake. The items asked about, whether they do in fact count towards the '5 a day' recommendation, and the proportion of respondents who stated that each would count towards the fruit and vegetable recommendation, are shown in Table 7.2.

More than three-quarters of respondents said, in line with FSA guidance, that frozen vegetables (91%), pure fruit juice (89%), tinned fruit or vegetables (88%), dried fruit (83%), fruit smoothies (79%), baked beans (73%) and pulses (68%) could count towards '5 a day'.

There was more confusion over the other items; contrary to Agency guidance, 73% of respondents said that a jacket potato would count towards the '5 a day'. Twenty-seven per cent of respondents thought that rice and 14% thought that jam would count towards the recommended daily intake.

Since Wave 1, the proportion of respondents who stated, in line with Agency recommendations, that frozen vegetables, baked beans, dried fruit and tinned fruit or vegetables can count towards the five a day target, increased.

Table 7.2 Foods that can count towards '5 a day' (Wave 1 and Wave 2)

	% who said food counted towards '5 a day'	
	W1	W2
Foods that count as a portion of fruit and vegetables		
Tinned fruit or vegetables	82	88[S]
Frozen vegetables	81	91[S]
Dried fruit	76	83[S]
Baked beans	64	73[S]
Pulses	60	68[S]

Source: H2_10 Do you think these foods can be counted towards the daily fruit and vegetable intake?
Base: All NI respondents - Wave 1(506); Wave 2(504)

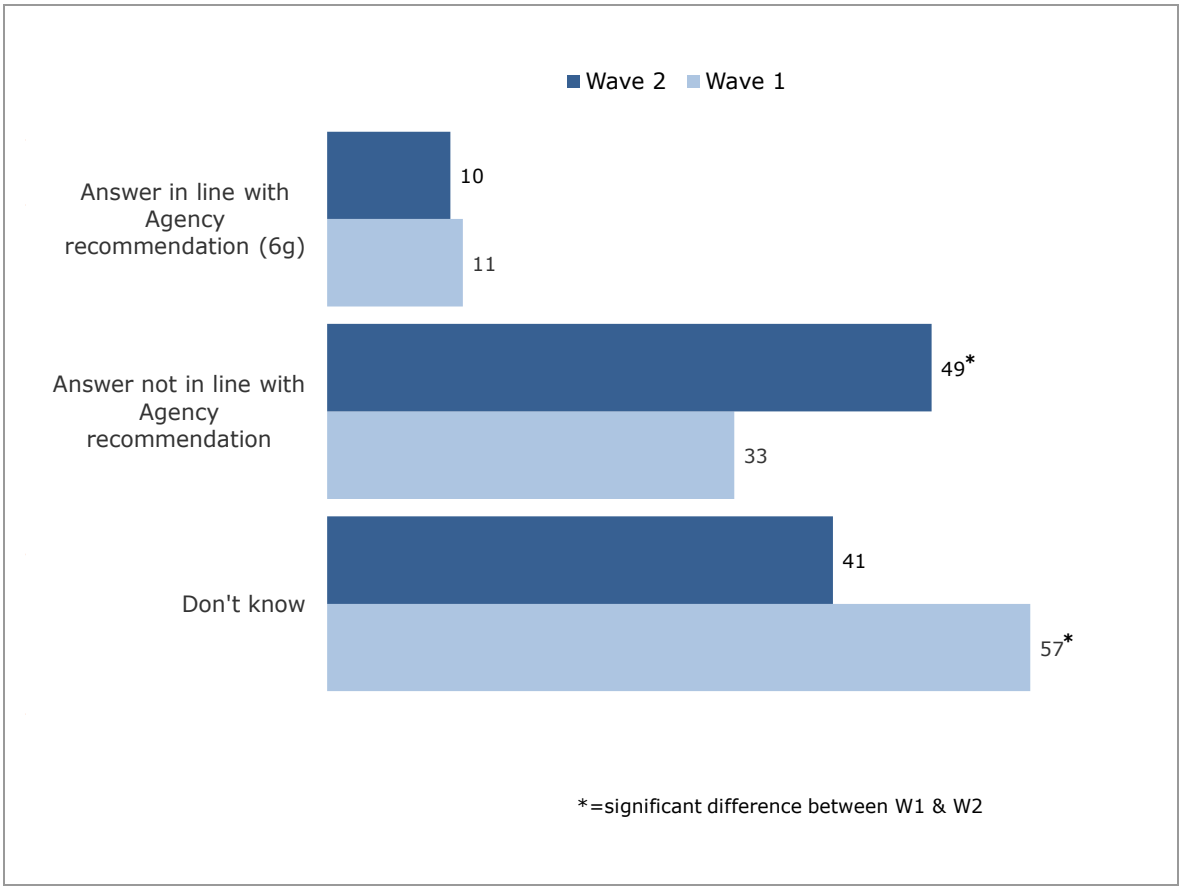
[S] Denotes where the result is significantly higher compared with the other Wave

7.4.3 Salt

Respondents were asked what they thought was the recommended maximum daily intake of salt adults should eat each day. **FSA guidance is that adults should consume no more than 6g of salt a day.**

There was limited knowledge of the adult's maximum daily intake, with 10% of respondents stating the recommended amount of 6g (unchanged since Wave 1). Half of respondents (49%) gave an answer that was not in line with Agency guidelines and 41% said they did not know.

Figure 7.5 Recommended maximum daily intake of salt (Wave 1 and Wave 2)



Source: H2_30 It is recommended that we should eat no more than a certain amount of salt each day. How much do you think this is for adults?
Base: All NI respondents - Wave 1(506); Wave 2(504)

Respondents were asked (unprompted) what effects they thought eating too much salt could have on their health.

The main risk related to excessive salt consumption is that it increases blood pressure, and hence the risk of heart disease, heart attacks and strokes.

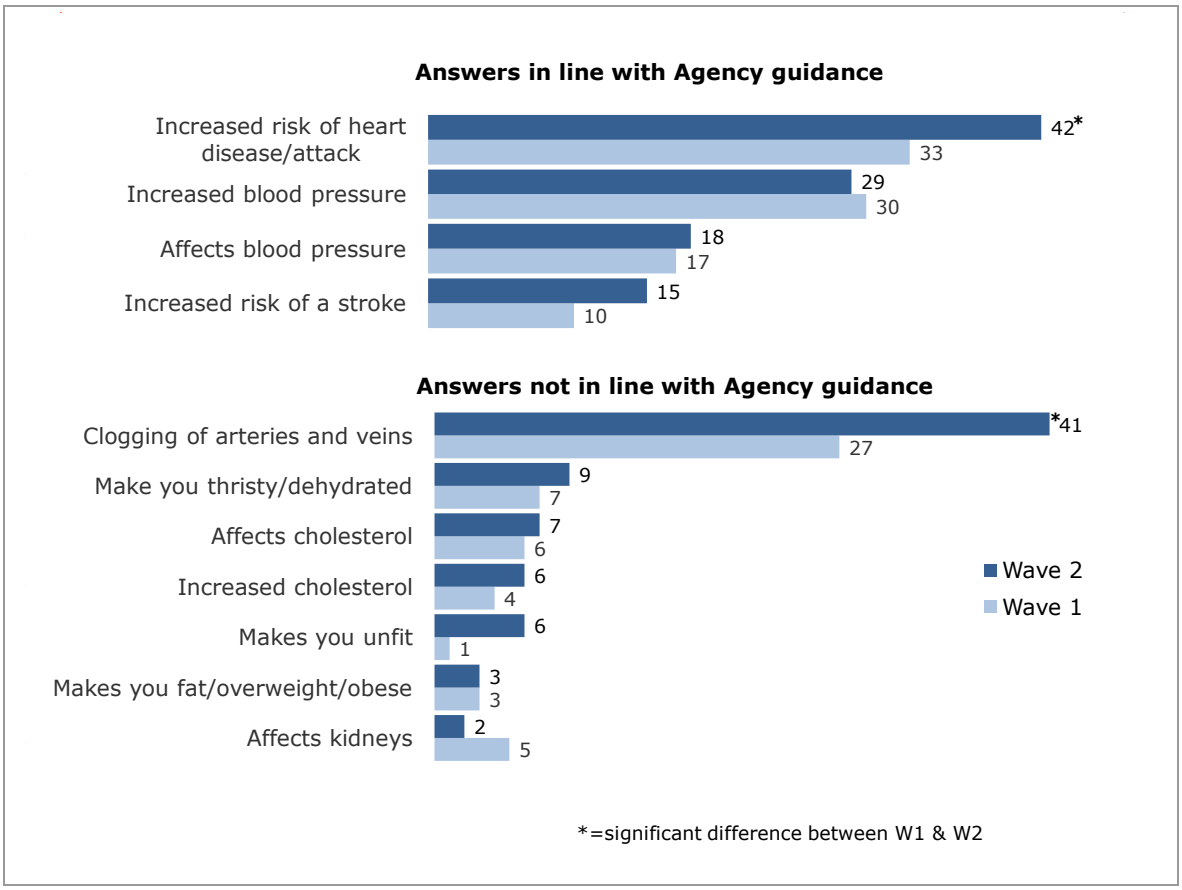
Forty-two per cent of respondents said, in accordance with FSA advice, that eating too much salt could increase the risk of heart disease or a heart attack, and 29% said that it could increase blood pressure. Eighteen per cent said it would affect blood pressure (without specifying that blood pressure would increase).

Some respondents gave answers that were not in line with Agency advice such as ‘affects cholesterol’ (7%) or ‘increases cholesterol’ (6%). Around two-fifths (41%) said it would cause clogging of arteries and veins.

The proportion of respondents who said that eating too much salt can lead to an increased risk of heart disease increased compared with Wave 1. However, the proportion that said

that clogging of arteries and veins was linked to excessive salt consumption also increased (Figure 7.6).

Figure 7.6 Impact eating too much salt can have on health (Wave 1 and Wave 2)



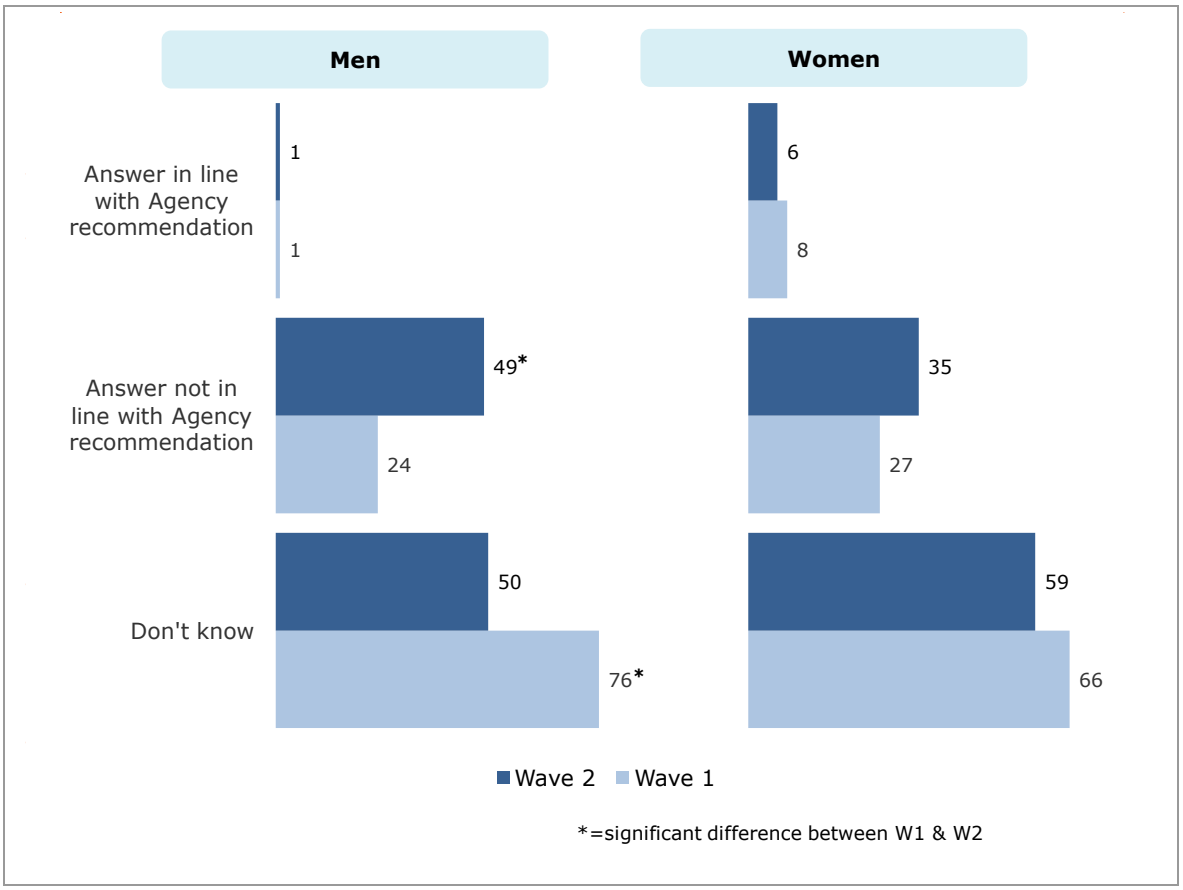
Source: H2_32 What effects do you think eating too much salt can have on your health?
Base: All NI respondents - Wave 1(506); Wave 2(504)

7.4.4 Fat

Men were asked what they thought the recommended maximum daily intake of total fat that men should eat each day is, and women were asked about the maximum daily intake of total fat for women. **FSA guidance is that men should not exceed 95g total fat each day and women should not exceed 70g a day.** Respondents were then told of the recommended maximum amount for total fat and were asked how much of this amount (in grams) they thought was made up of the recommended maximum daily intake of saturated fat. **FSA guidance is that a man's maximum daily intake of saturated fat should not be more than 30g and for women no more than 20g.**

There was limited knowledge of the recommended maximum daily intakes for both total and saturated fat, with many giving answers that did not conform to Agency recommendations or saying they did not know, as shown in Figures 7.7 and 7.8.

Figure 7.7 Recommended daily allowance for total fat (Wave 1 and Wave 2)

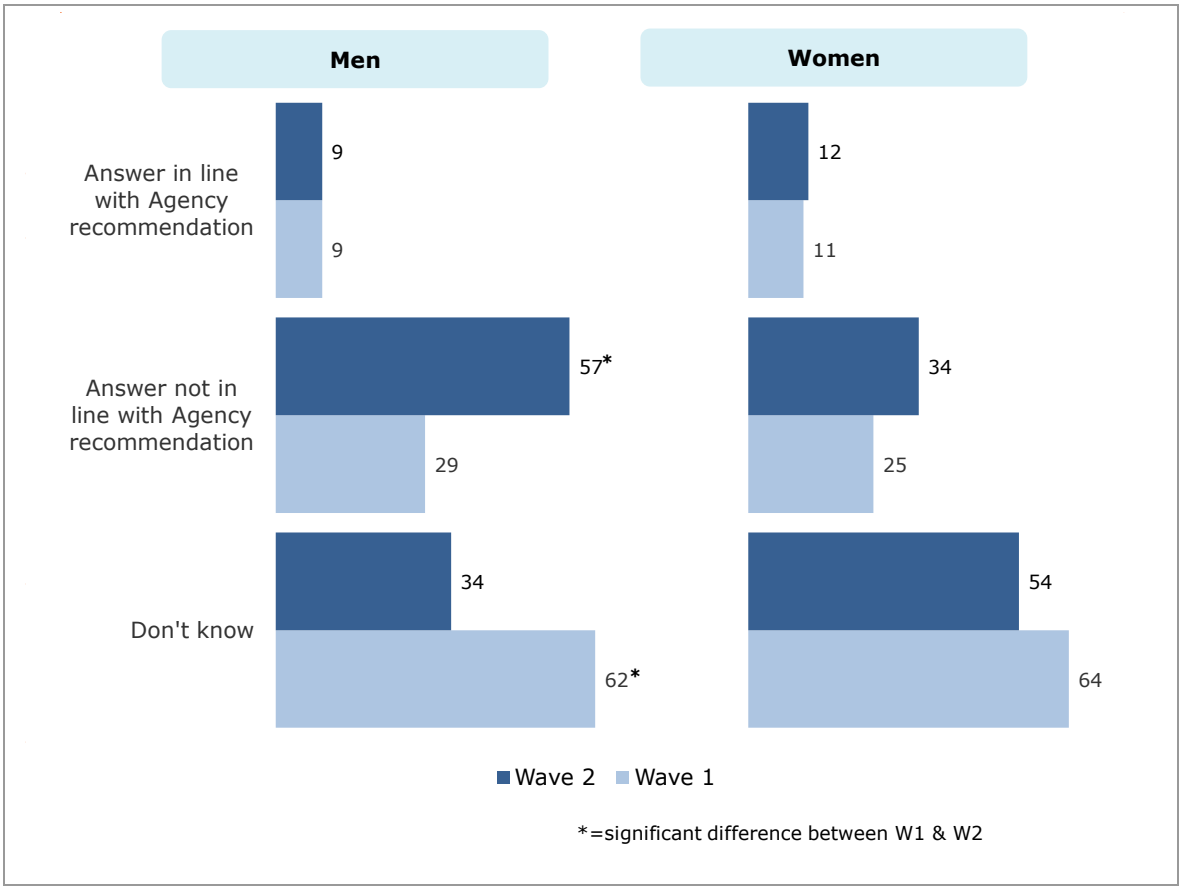


Source: H2_27 How much fat, in grams, do you think an average woman/man should eat each day?
Base: NI. Men – Wave 1 (186), Wave 2(181); Women – Wave 1 (320), Wave 2 (323)

For total fat, 1% of men and 6% of women cited the recommended daily allowance. This was unchanged from Wave 1.

Once prompted with the recommended daily allowance for total fat, 9% of men and 12% of women then gave an answer for saturated fat that corresponded with Agency recommendations. This was also unchanged from Wave 1.

Figure 7.8 Recommended daily allowance for saturated fat (Wave 1 and Wave 2)

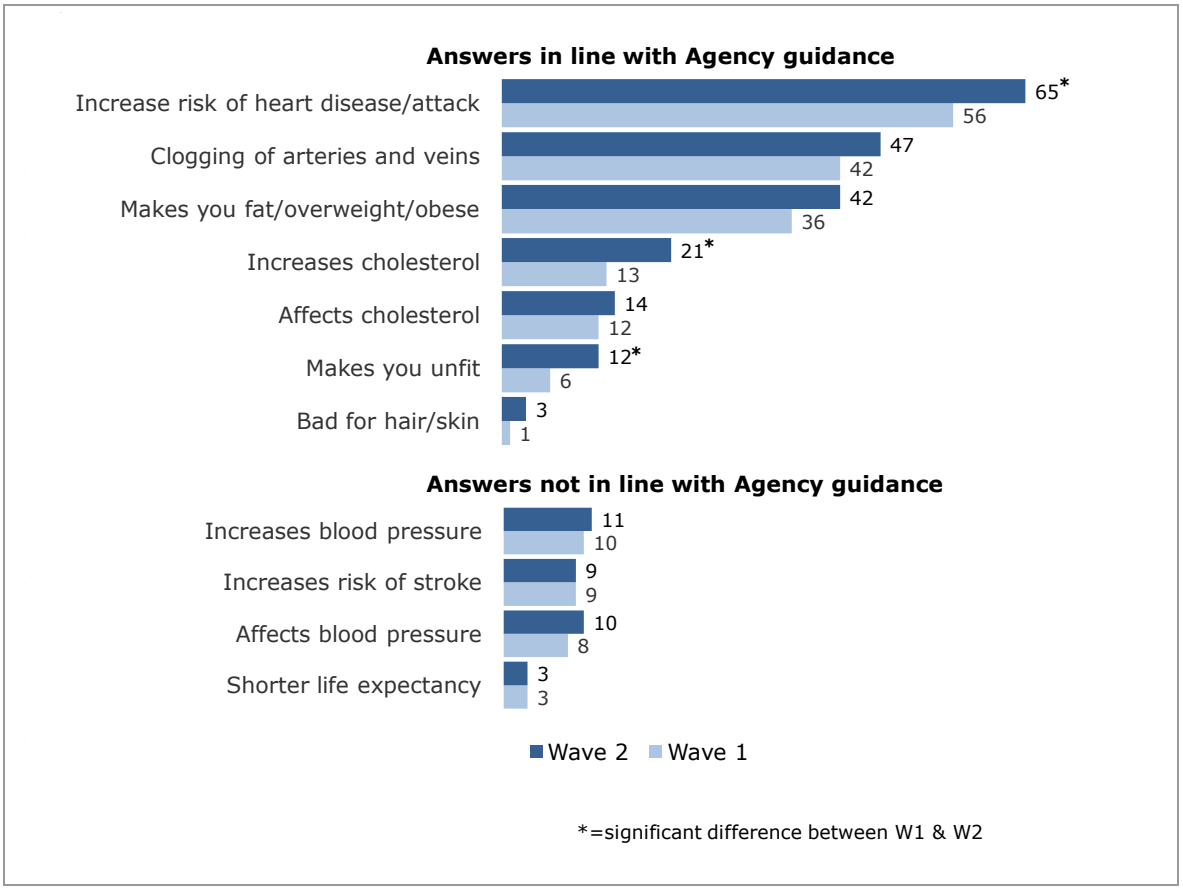


Source: H2_28 It is recommended that the average man should eat no more than 95g of fat a day. How much of this, in grams, do you think is the maximum recommended amount of saturated fats?
Base: NI. Men – Wave 1 (186), Wave 2(181); Women – Wave 1 (320), Wave 2 (323)

Respondents were asked (unprompted) what effects they thought eating too much saturated fat could have on health. Eating too much saturated fat is one of the major risk factors for heart disease, as it causes a build up of cholesterol in the arteries. Too much fat also increases the risk of overweight and obesity which again is a risk factor for heart disease, as well as for some types of cancer. High saturated fat consumption has also been linked with an increased risk of diabetes.

Although (as described above) awareness of the recommended level of saturated fat was low, there was higher awareness of the possible adverse impacts of eating too much. Over half of respondents reported it would increase the risk of heart disease (65%), and around half that it would cause clogging of arteries and veins (47%). Forty-two per cent mentioned it would cause weight gain/obesity. The most frequently reported responses that were not in line with FSA guidance were increases blood pressure (11%), affect blood pressure (10%) and increases risk of stroke (9%).

Figure 7.9 Effects of eating too much saturated fat



Source: H2_29 What effects do you think eating too much saturated fat can have on your health?
Base: NI. Men – All respondents - Wave 1 (506); Wave 2 (504)

7.4.5 Variation in knowledge of recommended daily amounts by different groups in the population

When considering **gender** differences, women and men were just as likely to say that an average woman's recommended daily amount of calories is 2000 and likewise that an average man's recommended daily amount is 2500. When asked what the recommended daily maximum intake is of salt, women were more likely to say they weren't sure (47% compared with 35% of men). There were no significant differences between men and women in the responses given when asked what the effects of eating too much salt or eating too much saturated fat are.

There was some variation in responses by **age.** For example, younger respondents were more likely to say that the recommended daily amount of calories for women is 2000 (46% of 16-24s and 49% of 25-34s gave this answer, falling to 14% of respondents aged 60 and over) and that for men it is 2500 (50% of 16-24s and 37% of 25-34s, compared with 15% of those aged 60 and over).

7.5 Comparisons between Northern Ireland and Scotland

As healthy eating questions were not included in the England and Wales surveys, comparisons in this section can only be made between Northern Ireland and Scotland.

Respondents in Northern Ireland were more likely to place foods high in fat or sugar in the recommended section of the Eatwell plate than respondents in Scotland.

Table 7.3 Eatwell plate exercise, by country (Wave 2)

	Northern Ireland	Scotland
High sugar/ fat foods	*88%S*	*81%*
Base	*(504)*	*(507)*

Source: H2_17 Eatwell plate exercise
Base: All respondents
NB. S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

Respondents in Scotland and Northern Ireland were equally as likely to state that the recommended daily number of portions of fruit and vegetables people should eat is five (86% and 90% respectively). However, respondents in Scotland were more likely than those in Northern Ireland to say that jam, which does not come under Agency recommendations, counts as a portion of fruit (21% compared with 14%).

When looking at knowledge of the recommended daily allowances the proportion of respondents giving responses that are consistent with Agency recommendations did not vary significantly by country.

8. Eating and health

This chapter supports information presented in Chapter 7 by covering attitudes towards healthy eating, the consumption of different types of food and changes to diet made in the last six months and comparisons between Northern Ireland and Scotland.

Summary

Attitudes towards healthy eating

- Nearly all respondents agreed that what you eat makes a big difference to how healthy you are (95%) and that even if you don't have a really healthy diet it is worth making small changes (97%).

Perception of diet

- The majority (85%) of respondents stated that the food they usually ate was very or fairly healthy. Half (48%) agreed that they did not need to make any changes to the food they eat, as it was already healthy enough.

Dietary changes and barriers and motivations to change

- About a third said over the last six months they had been eating more fruit and vegetables (29%) and a fifth said they were eating smaller portions (22%), less salt (19%) and less saturated fat (19%). Compared with Wave 1, respondents were more likely to have reported eating more fruit and vegetables and eating less food high in fat over the last three months (both up seven percentage points).
- Those that had made changes to their diet in the last six months were most likely to say that they had done so to be more healthy / have a healthier lifestyle (47%), to lose weight / maintain / stop gaining weight (44%) and for health reasons (30%).

  When asked what difficulties, if any, they would have in trying to eat more healthily, 25% of respondents said they would not have any. A fifth (22%) said that the cost of food would be an issue.

Eating out

- The majority of respondents (62%) said that the food they ate outside of the home was less healthy than the food they ate when at home.
- The places where respondents most wanted to see more information about the healthiness of food were takeaway outlets (61%), restaurants (59%) and fast food outlets (57%). Compared with Wave 1, respondents were more likely to want increased information displayed in all types of establishments asked about.

Comparisons with the rest of the UK

- Respondents in Northern Ireland were more likely than respondents in England to report eating pre-cooked meats (75% compared with 65%) and beef, lamb and pork (85% compared with 75%) at least once a week.
- 64% of respondents in Northern Ireland agreed that the tastiest foods are ones that are bad for you compared with 56% of respondents in Scotland
- More respondents in Northern Ireland wanted to see information displayed about healthy food than respondents in Scotland (83% compared with 74%).

8.1 Attitudes towards healthy eating

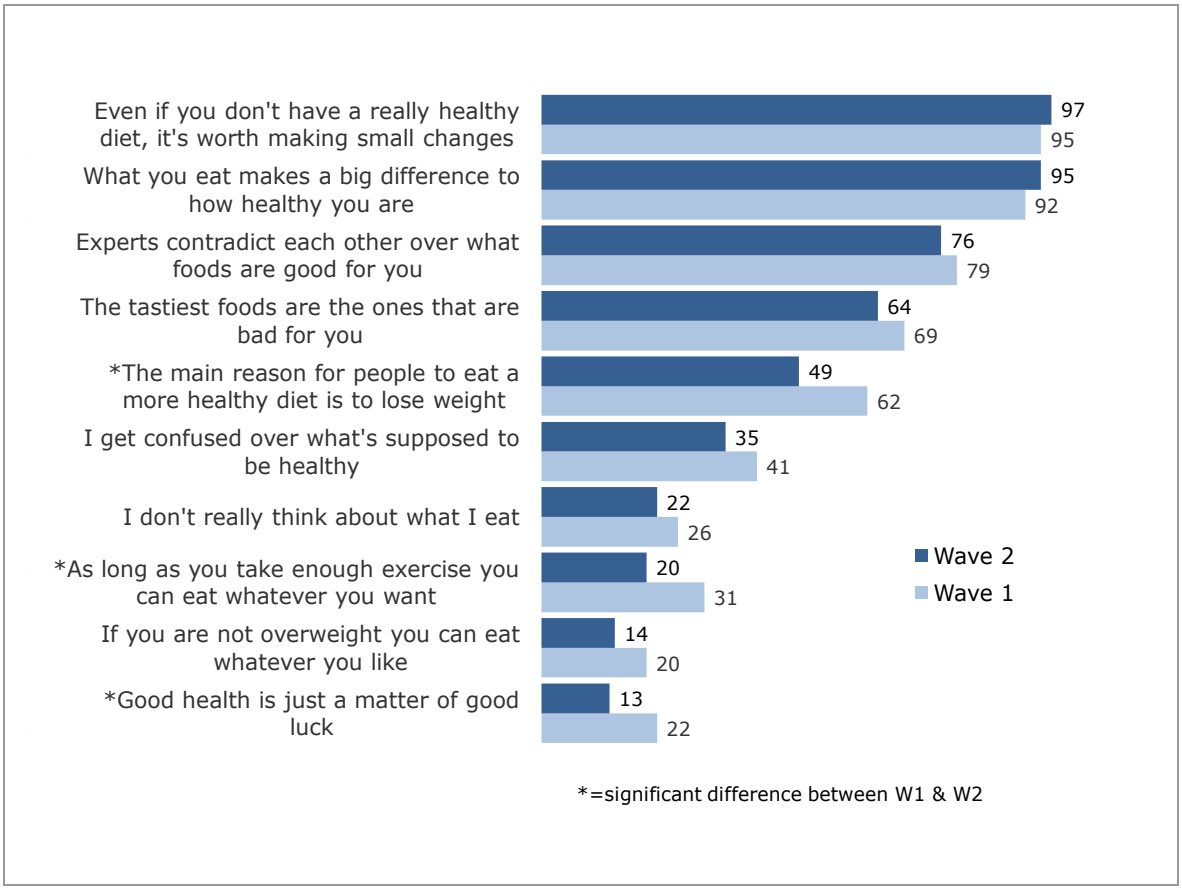
Respondents were asked to say, on a five-point scale from 'definitely agree' to 'definitely disagree', how much they agreed or disagreed with a range of statements about healthy eating. Results are shown in Figure 8.1 below.

Almost all respondents agreed that what you eat makes a big difference to how healthy you are (95%) and that even if you don't have a really healthy diet it is worth making small changes (97%). Thirteen per cent agreed with the statement that good health is just a matter of good luck and 14% said they agreed that if you are not overweight you can eat whatever you like.

Three-quarters (76%) of respondents agreed that the experts contradict each other over what foods are good for you and over a third (35%) said they get confused over what is supposed to be healthy

Compared to Wave 1, in Wave 2 there was a decrease in the proportion of respondents agreeing that the main reason for people to eat a more healthy diet is to lose weight (49% at Wave 2 down from 62% at Wave 1), that as long as you take enough exercise you can eat whatever you want (20% at Wave 2 compared with 31% at Wave 1) and that good health is just a matter of good luck (13% at Wave 2 compared with 22% at Wave 1).

Figure 8.1 Attitudes towards healthy eating (Wave 1 and Wave 2)



Source: Q2_16 & H2_16 Please tell me how much you agree or disagree
Base: All NI respondents - Wave 1(506); Wave 2(504)

8.2 Consumption of different types of food

Respondents were asked how often they ate a range of foods[34]:

- Milk and dairy
- Starchy foods
- Fruit and vegetables
- Biscuits, pastries and cakes
- Eggs
- Pre-cooked meats

[34] Measures of the consumption of different types of food were included in the survey to provide additional explanatory power to the findings rather than to produce national estimates. It is recommended that the National Diet and Nutrition Survey (NDNS) be used for national estimates of consumption.

- Poultry
- Beef, lamb or pork
- Oily fish
- Fish, excluding shellfish
- Pre-packed sandwiches
- Fried chips or roast potatoes
- Shellfish

As Table 8.1 shows, the types of food respondents reported eating most often (at least once a day) were starchy foods (73%), fruit and vegetables (72%), and milk and dairy (78%) foods.

Thirty-nine per cent of respondents said they ate biscuits, pastries and cakes at least once a day and two-thirds (65%) of respondents said they eat these foods three or four times a week or more often. Three-quarters of respondents reported eating chips or roast potatoes at least once a week.

Eggs were reported to be eaten on a less frequent basis, nine per cent of respondents reported eating these at least once a day and 48% reported eating eggs once or twice a week.

Just under half of respondents reported eating oily fish at least once a week. Around half (51%) of respondents reported never eating shellfish, whilst 10% said they eat it at least once a week and 39% less often than this.

Compared with Wave 1, there has been a reduction in the proportion of respondents reporting they eat starchy foods (from 84% to 73%) and biscuits, pastries and cakes (49% to 39%) every day. The reported frequency of eating oily fish has also decreased in Wave 2 compared with Wave 1; the proportion eating it once or twice a week has decreased (48% to 37%) whilst the proportion eating it less than once a week has increased (23% to 30%).

Table 8.1 Frequency of eating different types of food (Wave 2)

	At least once a day	5-6 times a week	3-4 times a week	Once or twice a week	Less than once a week	Never
Milk and dairy	*78%*	*4%*	*7%*	*6%*	*2%*	*3%*
Starchy foods	*73%*	*9%*	*11%*	*6%*	*1%*	*
Fruit and vegetables	*72%*	*10%*	*11%*	*6%*	*2%*	*
Biscuits, pastries and cakes	*39%*	*11%*	*15%*	*22%*	*10%*	*3%*
Eggs	*9%*	*4%*	*16%*	*48%*	*17%*	*5%*
Pre-cooked meats	*8%*	*8%*	*24%*	*35%*	*15%*	*9%*
Poultry	*5%*	*11%*	*38%*	*39%*	*5%*	*3%*
Beef, lamb or pork	*4%*	*5%*	*27%*	*49%*	*12%*	*3%*
Oily fish	*2%*	*1%*	*6%*	*37%*	*30%*	*23%*
Fish, excluding shellfish	*1%*	*1%*	*5%*	*50%*	*31%*	*12%*
Pre-packed sandwiches	*1%*	*1%*	*3%*	*8%*	*30%*	*57%*
Fried chips or roast potatoes	*1%*	*3%*	*14%*	*57%*	*20%*	*5%*
Shellfish	*	-	*	*10%*	*39%*	*51%*

Source: Q2_14 & H2_14 At the moment, how often do you eat...
Base: All NI respondents - Wave 2(504)

Respondents were asked three separate questions about their consumption of fruit and vegetables in the previous day – one on vegetables, one on fruit, and one on fruit juice[35].

Combining the answers to these three questions, 49% of respondents said they had eaten at least five portions of fruit and vegetables in the previous day. This was not significantly different from the results at Wave 1 (41%).

[35] Separate questions were asked about fruit and vegetables in order to aid respondents' recall. Fruit juice was asked about separately as only one portion of this can count per day.

8.2.1 Variation in attitudes towards healthy eating and consumption of different foods by different groups in the population

There was little variation by **gender** in attitudes towards healthy eating or consumption of different foods. Women were more likely than men to say they never ate pre-packed sandwiches (65% compared with 48% of men.)

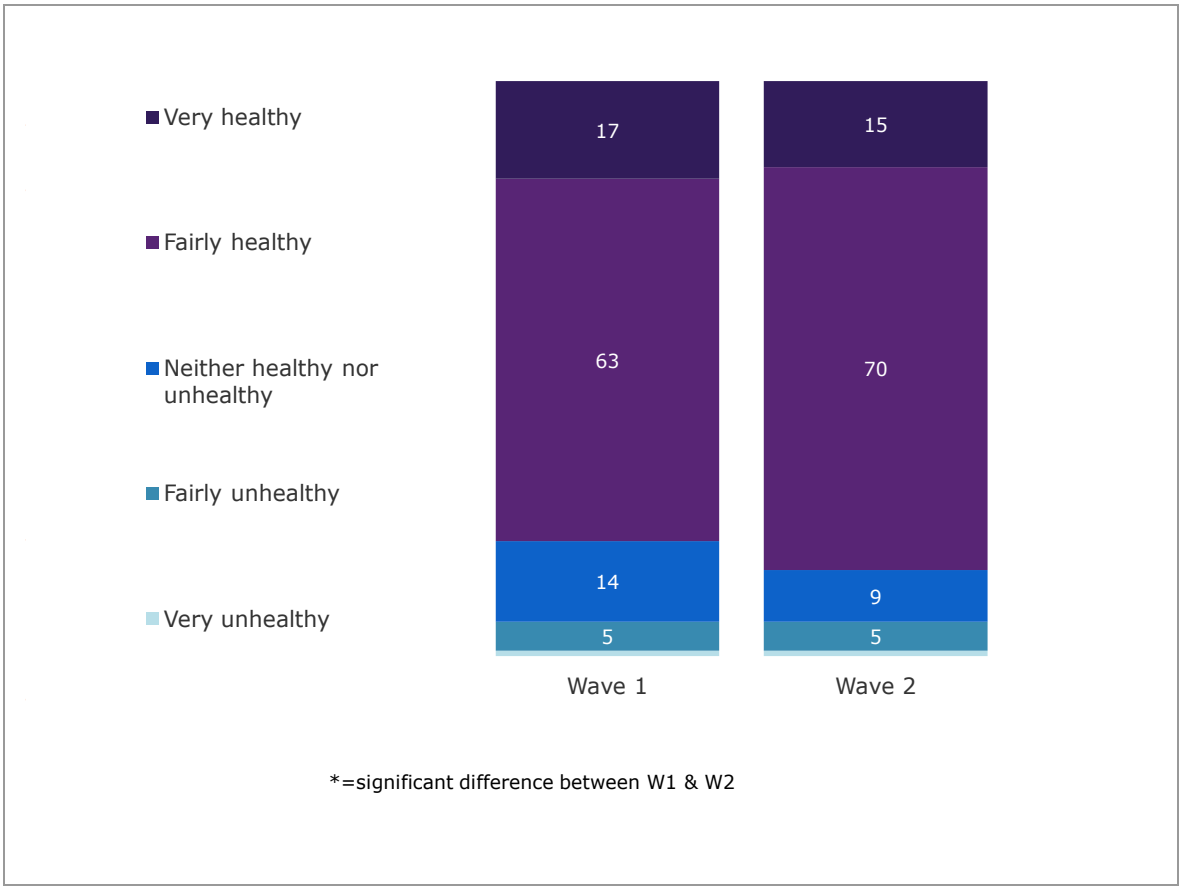
There was more variation by **age.** Older respondents were more likely to agree that good health is just a matter of luck; 21% of those aged 60 and over said this compared with 8% of 16-24 year olds. Time was an issue for younger people, as 35% of 16-24 year olds agreed that they don't have time to spend on preparing and cooking food compared with 10% of those aged 60 and over, and the youngest age group were also more likely to recognise that they could be more careful about hygiene when preparing food (50% compared with 28%). Older respondents were more likely to say they eat cooked vegetables at least weekly than younger respondents (97% compared with 84%). Younger respondents were more likely to eat poultry at least once a week (98% of 16-24 year olds compared with 84% of respondents aged 60 and over).

8.3 Perceptions of diet

Respondents were asked to say, in their opinion, whether what they usually ate was healthy or unhealthy (on a five point scale from 'very healthy' to 'very unhealthy'). Results are shown in Figure 8.2.

The majority (85%) of respondents thought that the food they usually ate was very or fairly healthy. This was in line with the results of Wave 1 (80% agreed).

Figure 8.2 Perceived healthiness of food eaten (Wave 1 and Wave 2)



Source: H2_1 Overall, in your opinion, would you say that what you usually eat is...
Base: All NI respondents - Wave 1(506); Wave 2(504)

8.4 Dietary change

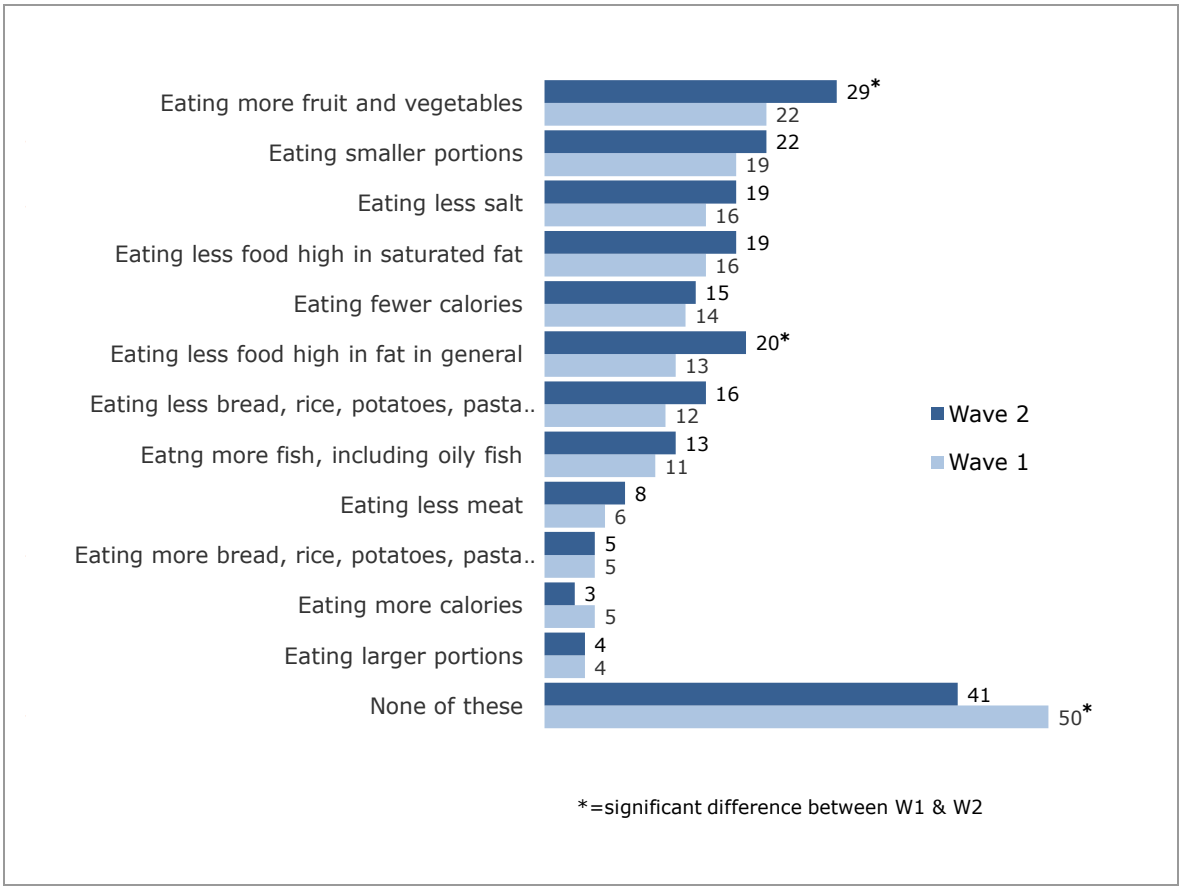
8.4.1 Changes to food eaten

Respondents were asked how much they agreed or disagreed with the following statement 'I do not need to make any changes to the food I eat, as it is already healthy enough'. Forty-eight per cent agreed and 42% disagreed; this was unchanged from Wave 1.

Respondents were also asked whether they had made any changes to the food they ate over the past six months. Twenty-nine per cent of respondents said that they were eating more fruit and vegetables and a fifth said that they were eating smaller portions (22%), less salt (19%) and less saturated fat (19%). Two-fifths (41%) said that they had not made any of these changes to their diet (Figure 8.3).

Compared with Wave 1, respondents were more likely to have reported eating more fruit and vegetables (22% at Wave 1 compared with 29% at Wave 2) and eating less food high in fat (13% at Wave 1 compared with 20% at Wave 2).

Figure 8.3 Changes made to food eaten in the last six months (Wave 1 and Wave 2)



Source: H2_19 Thinking about the last 6 months, what changes, if any, have you personally made to the food you eat?
Base: All NI respondents - Wave 1(506); Wave 2(504)

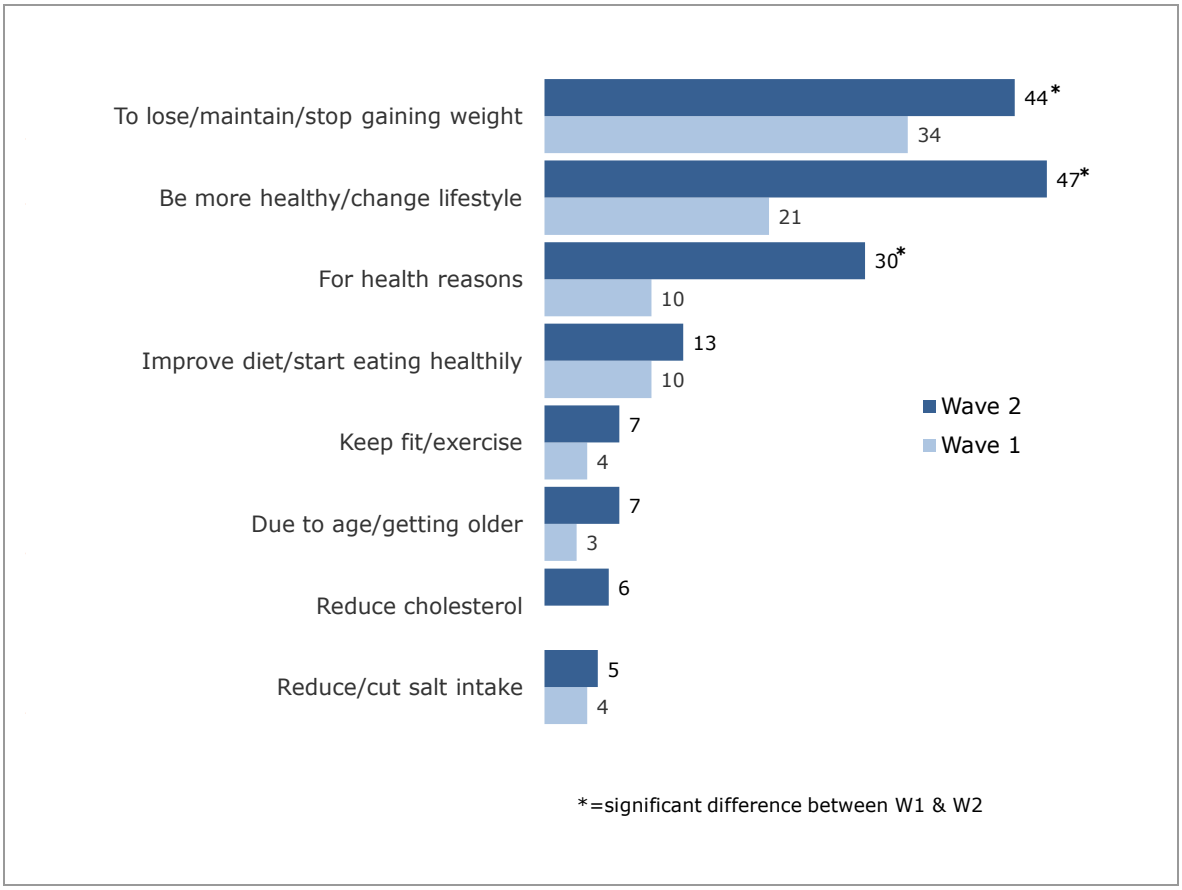
8.4.2 Barriers and motivations to change

Respondents who reported that they had made a change to their diet in the past six months were asked to say (unprompted[36]) what the reasons for this change were.

When asked why they had made these changes, 47% said to it was to be more healthy / have a healthier lifestyle, 44% to lose weight / maintain / stop gaining weight and 30% for health reasons. The proportion of respondents who gave these answers in Wave 2 has increased compared with Wave 1 (see Figure 8.4).

[36] In Wave 1 this question was asked as a fully open question and the most popular answers were used as the basis for the code list in Wave 2, which may explain the large differences seen in some results between Wave 1 and 2.

Figure 8.4 Changes made to food eaten in the last six months (Wave 1 and Wave 2)



Source: H2_21 Why have you made these changes to the food you eat in the last 6 months?
Base: All NI respondents who have made changes to the way they eat in the last 6 months - Wave 1(244); Wave 2 (282)

All respondents were then asked (unprompted[37]) what difficulties they would have, if any, if they tried to eat more healthily. Answers are shown in Figure 8.5.

A quarter (25%) thought they would not have any difficulties. A fifth (22%) said the cost of food would be an issue and around 10% gave each of the following answers:

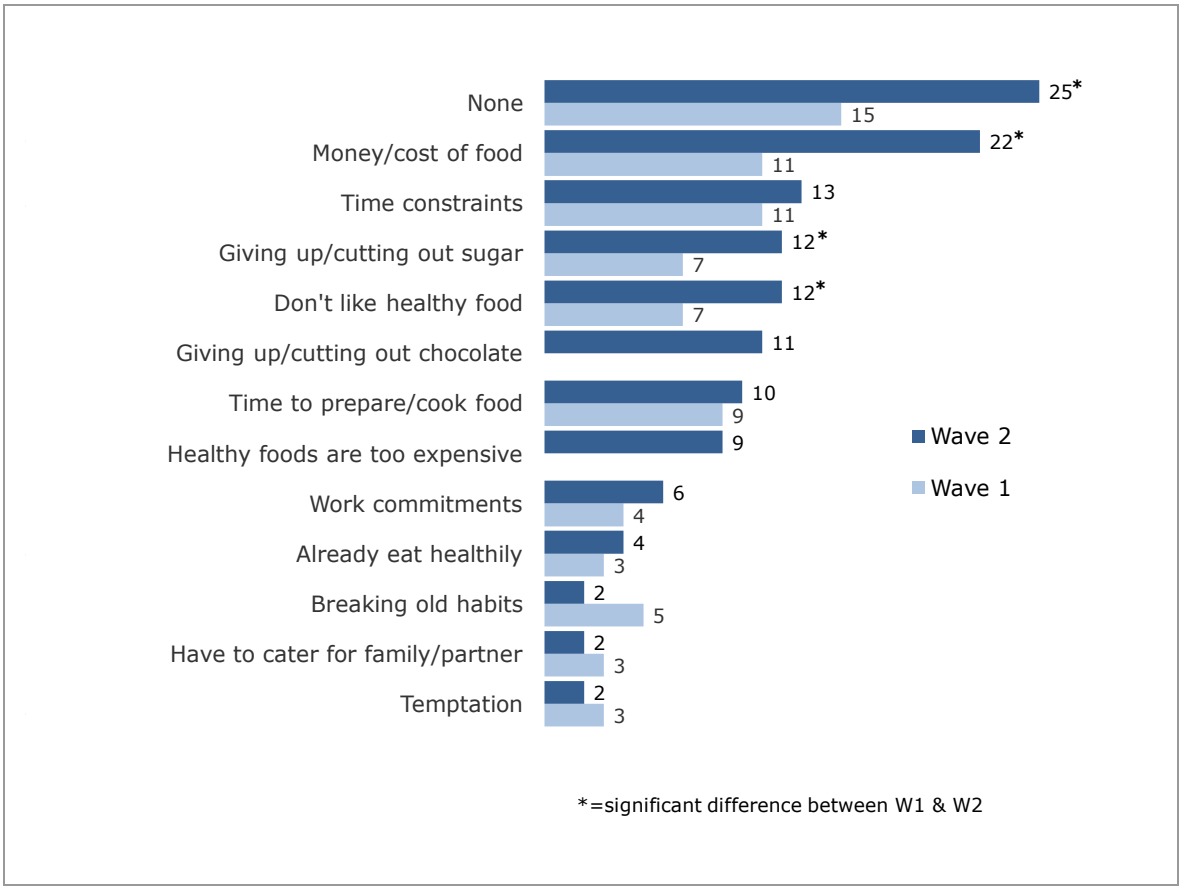
- Time (13%)
- Cutting out sugar (12%)
- Not liking healthy food (12%)
- Giving up chocolate (11%)

Compared with the results at Wave 1, there was an increase in the proportions mentioning that they would not have any difficulties in trying to eat more healthily (25% compared with

[37] Again, this was administered as an open question in Wave 1 and a spontaneous closed question in Wave 2.

15% at Wave 1) and that the cost of food would make it difficult for them to make such a change (22% compared with 11% at Wave 1).

Figure 8.5 Difficulties in trying to eat more healthily (Wave 1 and Wave 2)



Source: H2_22 Some people may find it difficult to eat more healthily. Can you tell me please, what do you think would be the difficulties, if any, for you in trying to eat more healthily?
Base: All NI respondents - Wave 1(506); Wave 2(504)

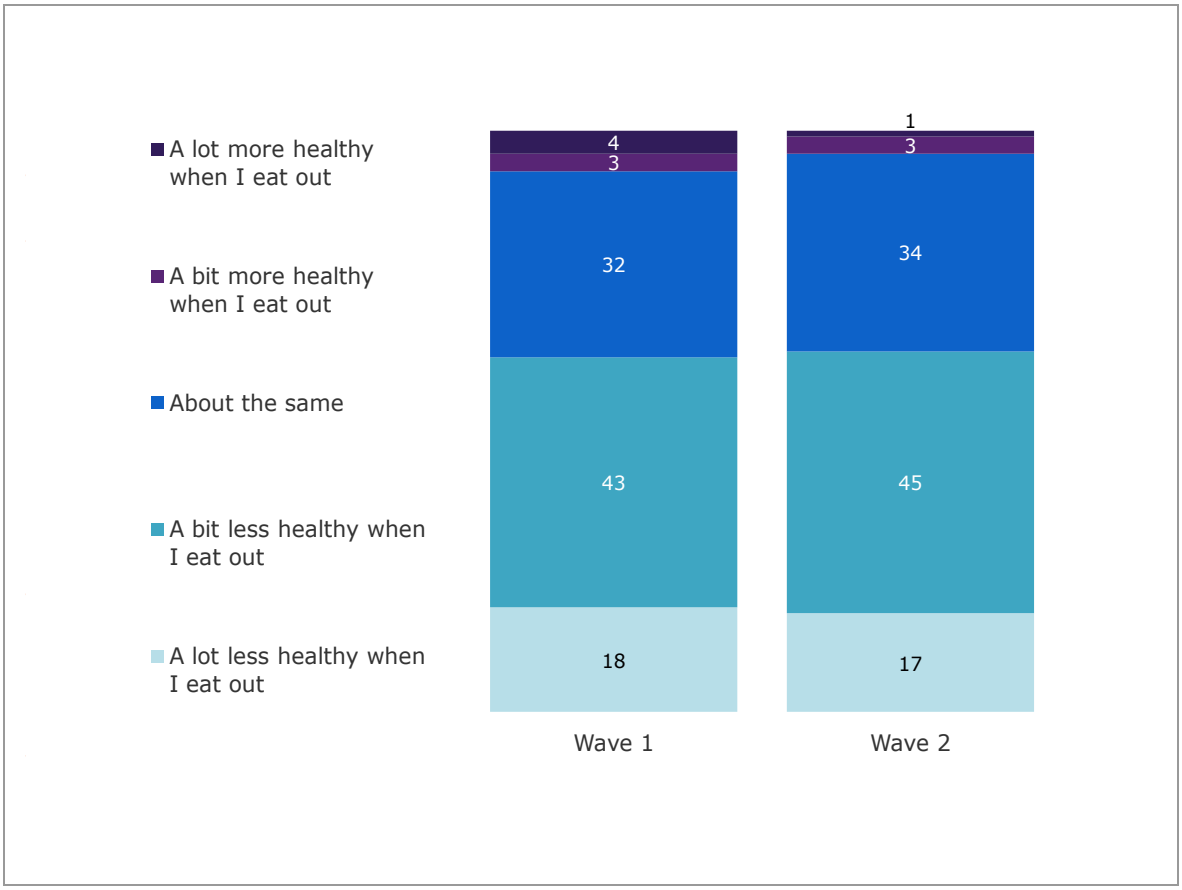
8.4.3 Variation in perception of diet and dietary changes made by different groups in the population

Older respondents were more likely to say they thought that their diet was healthy compared to younger respondents; 93% of those aged 60 and over said their diet was either very healthy or fairly healthy, which steadily decreased to 73% among those aged 16-24. Younger respondents were also more likely to report having made changes to their diet, including: eating more fruit and vegetables (32% compared with 12%) and eating less food high in saturated fat (26% compared with 10%). When asked what the difficulties were in trying to eat healthily, respondents aged 60 and over tended to say they already ate healthily (43% compared with 17% of those aged 16-24), whereas younger people were more likely to say they don't like healthy food (20% compared with 5% of respondents aged 60 and over).

8.5 Eating out and eating healthily

Respondents were also asked how healthy they would say that food they eat outside of the home is, compared with what they eat at home. As Figure 8.6 shows, the majority of these respondents (62%) said that the food they ate outside of the home was less healthy than the food they ate when at home. About a third of these respondents (34%) said it was about the same, with 4% saying that they ate more healthily when they eat out. Results were not found to have significantly changed from Wave 1.

Figure 8.6 Healthiness of food when eating outside of the home, compared with eating at home (Wave 1 and Wave 2)



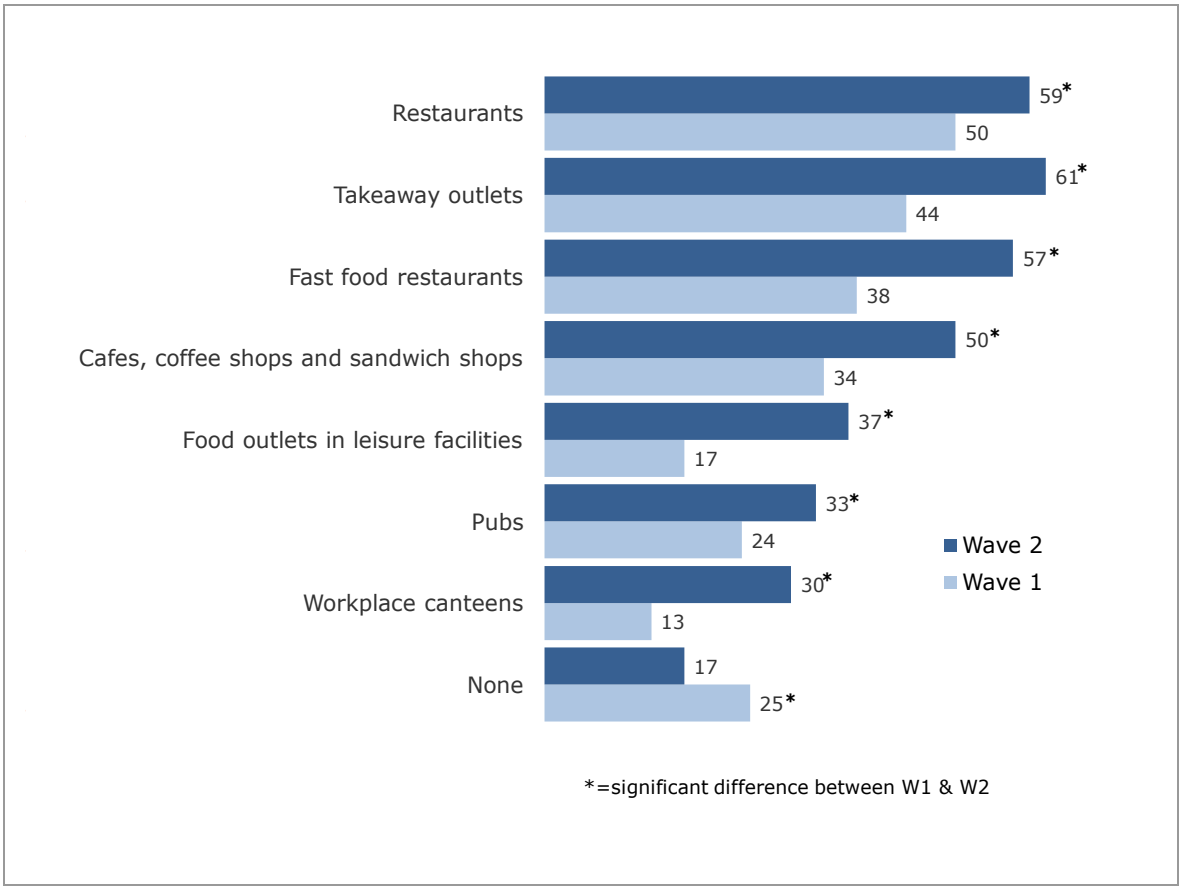
Source: H2_39 In your opinion, when you eat out, how healthy would you say the food that you eat is, compared to when you eat at home?
Base: All NI respondents – Wave 1 (a third of the sample) (159), Wave 2 (504)

When specifically asked where, if at all, they would like to see more information displayed about how healthy different food options are, 83% of respondents stated that further nutritional information should be shown in at least one of the food establishments asked about, while 17% said that they would not like to see this information in any of the places mentioned. Looking at the specific places where people said they would want to see more

information, takeaway outlets (61%), restaurants (59%) and fast food outlets (57%) were those chosen by the highest number of respondents.

Compared with Wave 1, respondents in Northern Ireland were more likely to want increased information displayed in all types of food establishments asked about.

Figure 8.7 Places where respondents would like to see more information displayed about healthy options (Wave 1 and Wave 2)



Source: H2_40 In which, if any, of these places would you like to see more information displayed about how healthy different options are?
Base: All NI respondents – Wave 1 (506), Wave 2 (504)

8.5.1 Variation in healthiness of food when eating out and where respondents want to see more information about healthy options, by different groups in the population

Men and women did not differ in their responses when asked how healthy they considered the food to be when they eat out compared with food eaten at home. Similarly, **gender** did not make a difference when asked about where respondents would want to see more information displayed about healthy options, except that women were more likely to say

that they wanted to see this information in cafe's, coffee shops and sandwich shops (58% compared with 40% of men.)

There was no variation by **age** with regard to how healthy food eaten outside the home is compared to food eaten at home. As for more information about healthy options being displayed, 29% of those aged 60 and over said they wouldn't want to see the information at any of the locations mentioned compared with 11% of respondents aged 16-24. Respondents aged 16-24 were most likely to see they would like to see this information at takeaway outlets (69%) and fast food restaurants (57%).

8.6 Comparisons between Northern Ireland and Scotland

The proportion of respondents who believed that what they usually ate was healthy did not vary by country: 85% said this in Northern Ireland and 86% in Scotland.

Table 8.2 shows how frequently respondents reported eating different foods. As some of the food types were asked about in the main UK wide questionnaire some comparisons with respondents in England and Wales can be made.

Respondents in Northern Ireland were more likely to say that they ate biscuits, pastries or cakes on a daily basis than respondents in Scotland (39% compared with 29%). They were also more likely than respondents in England to say they ate beef, lamb or pork on a weekly basis (85% compared with 75% respectively), poultry (92% compared with 86%) and pre-cooked meats (75% compared with 65%). Respondents living in Northern Ireland were more likely than respondents in Scotland to report eating roast potatoes or fried chips on a weekly basis (75% and 65%).

Respondents in England were more likely than respondents in Northern Ireland to say they ate pre-packed sandwiches on a weekly basis (19% and 13%).

Table 8.2 How frequently different foods were eaten, by country (Wave 2)

	Northern Ireland	England	Scotland
% Eating at least once a day			
Biscuits, pastries and cakes*	*39%S*	-	*29%*
% Eating at least once a week			
Beef, lamb or pork	*85%E*	*75%*	*81%*
Fried chips or roast potatoes*	*75%S*	-	*65%*
Poultry	*92%E*	*86%*	*89%*
Pre-cooked meats	*75%E*	*65%*	*73%*
Pre-packed sandwiches	*13%*	*19%NI*	*15%*
Shellfish	*10%*	*15%NI*	*13%*
Base	*(504)*	*(2116)*	*(507)*

*These questions were only asked in Scotland and Northern Ireland
Source: Q2_14 & H2_14 How often do you eat...
Base: All respondents
NB. E/W/S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

No significant difference between Northern Ireland and Scotland was found in the proportion of respondents who reported eating five or more fruit and vegetable portions the day before the interview.

Looking at attitudes to healthy eating (Table 8.3) respondents in Northern Ireland were more likely than respondents in Scotland to agree that the tastiest foods are the ones that are bad for you (64% and 56%) and that even if you don't have a really healthy diet it's worth making small changes (97% versus 93%). Respondents living in Scotland were more likely to agree that as long as you take enough exercise you can eat whatever you want (28% compared with 20% in Northern Ireland).

Table 8.3 Statements regarding healthy eating - % who agreed, by country (Wave 2)

% agreeing	Northern Ireland	Scotland
Even if you don't have a really healthy diet, it's worth making small changes	97%[S]	93%
The tastiest foods are the ones that are bad for you	64%[S]	56%
As long as you take enough exercise you can eat whatever you want	20%	28%[NI]
Base	*(504)*	*(507)*

Source: Q2_16 & H2_16 Please tell me how much you agree or disagree
Base: All respondents
NB. S/NI indicates that the result is significantly higher than the result for the country indicated by the initial

Perception of how healthy food was when eating out compared to eating at home also did not vary significantly between respondents in Northern Ireland and Scotland.

When looking at where, if anywhere, respondents would like to see more information about healthy food displayed, respondents in Scotland were more likely to say nowhere than those in Northern Ireland (26% compared with 17%). Conversely, respondents in Northern Ireland were more likely than respondents in Scotland to give the following answers: takeaway outlets (61% compared with 50%) and cafés (50% compared with 38%).

9. Looking ahead

Food and You is the Agency's flagship social science survey, collecting essential evidence on food safety and healthy eating issues which, in turn, provide a mechanism for measuring the extent to which attitudes and reported knowledge and behaviour are in line with Agency recommendations and guidance. In doing so, the survey underpins the Agency's strategic objective of ensuring consumers have the information and understanding they need to make informed choices about where and what they eat. The survey also provides key evidence for FSA activity in preventing foodborne disease from food eaten both in and out of the home. Further information on awareness of, and attitudes towards, current and future food production, such as imported foods, genetic modification and irradiation, support the Agency in making policy decisions in related areas. In this chapter, the value of Food and You Wave 2, the contribution of the survey to the wider evidence on food safety and healthy eating practices, and considerations for the future are discussed from the perspective of the FSA in Northern Ireland (FSA in NI) with input from the FSA's Social Science Research Unit.

The value of Wave 2

Food and You provides a rich source of data for the FSA in NI, other government departments, academics and researchers with an interest in food and related subjects. Food and You provides important Northern Ireland specific data, particularly in relation to the Food Hygiene Rating Scheme and healthy eating/nutrition issues, given that the Agency continues to advise and support Ministers in Northern Ireland on nutrition policy. In addition to building on Wave 1 by providing further baseline data, a second wave of data has enabled wave-on-wave analysis and this report has highlighted where there have been significant differences between Wave 1 and Wave 2.

The development of an index of recommended practice for food safety in this wave (see Chapter 4) has introduced a more detailed analysis of socio-demographic differences in reported food safety practices. The Northern Ireland data have highlighted how older people, males and those without continuous access to a car are more likely to report practices that were not in line with Agency guidance. Similarly, there was variation by different socio-demographic groups in reported healthy eating practices. For example women and younger respondents were more likely to report awareness of a number of factors which are considered by the Agency to be important for a healthy lifestyle. This level of detail provides a robust evidence base upon which the FSA in NI can target future timely and regional public information campaigns in order to make the greatest impact.

Drawing together the evidence

Food and You provides Northern Ireland -specific and representative data, informing the evidence base upon which policy decisions can be taken. For example, the Food and You data on the Food Hygiene Rating Scheme (FHRS) is important for monitoring consumer awareness and use of the scheme. It also provides information to enable the FSA in NI to undertake and evaluate public information campaigns on the FHRS. Currently, the FHRS in NI is operated on a voluntary basis but a consultation was recently undertaken to assess the potential impact of making the scheme statutory for food businesses to display their FHRS rating in a prominent position thereby strengthening the scheme's potential to improve public health. The continued monitoring of the scheme will, therefore, be important as the scheme continues to embed in NI.

Data from Food and You also builds on the FSA in NI evidence base on public attitudes reported behaviour and knowledge towards healthy eating. In particular it provides important information to monitor public awareness and knowledge of recommended maximum daily intakes for salt, sugar and fat. In light of harmonised front of pack information being implemented there is scope to use this data as a baseline to consider future changes in awareness. Data on attitudes also provide insight into public perceptions on what is 'healthy' and what barriers people face in making dietary improvements.

A key interest for the FSA in Northern Ireland is to explore the links between attitudes, behaviours and knowledge of food safety and of nutrition. The FSA is, therefore, commissioning further analysis on Food and You which will draw together findings from both the food safety and healthy eating chapters.

Food and You and the future

There are a number of areas of interest to the FSA in NI which future waves of Food and You are well placed to capture. As consumer awareness, attitudes and behaviours are liable to shift over time it is important for the Agency to be able to monitor these changes. In particular, food poverty is a particular area of interest and the altered shopping practices in wave two could be further investigated in future waves. Food and You data will add to the NI evidence base, inform policy direction and assist the Agency in responding to future challenges.

In accordance with original recommendations from the Social Science Research Committee, Food and You is currently being reviewed. Although the recommendations were for an annual time series a commitment was made to review effectiveness after five years. As Food and You has been carried out in alternate years the review is timely in that, should the recommendations include the need to build on the current time series, the FSA will be in a position to do this without an interruption to the timing. Furthermore, if this is the case Northern Ireland are committed to maintaining the links between food safety and healthy eating in any future food survey.

10. Appendices

10.1 Methodology

10.1.1 Introduction

The Food and You 2012 survey comprised a total of 3231 interviews with adults (aged 16+, with no upper age limit) across the UK. The samples were boosted in Scotland and Northern Ireland, to enable more detailed analysis at a country level.

The total number of complete interviews achieved was:

- 2,116 in England,
- 104 in Wales,
- 507 in Scotland and
- 504 in Northern Ireland.

At the analysis stage, weighting was applied so that the weighted sample was representative of each country and the UK as a whole.

10.1.2 The sample

In order to maximise consistency and comparability, the methodology adopted for sampling at Wave 2 was the same as for Wave 1. However, a fresh set of Primary Sampling Units (PSUs) was selected for Wave 2. A stratified random probability sample of private households in the UK was selected using the Postcode Address File (PAF) as a sampling frame. The PAF lists all known UK postcodes and addresses and is commonly used as a sampling frame for general population surveys. The Primary Sample Units (PSUs) were postcode sectors. Sectors with fewer than 500 addresses were grouped with neighbouring sectors prior to stratification.

The sample was stratified by region (formerly Government Office Region), the Census 2001 percentage of heads of households in a non-manual occupation (NS-SEC groups 1-3, banded into three equal-sized groups), the Census 2001 percentage of households with no car (banded into two equal-sized groups), and the Census 2001 population density (persons per hectare).

The list of postcode sectors was first sorted into the 12 regions– 9 in England, with Wales, Scotland and Northern Ireland listed separately. Within each region band, the list was then sorted into three groups based on the proportion of heads of household in a non-manual occupation. Each region/occupation band was then banded into two groups based on the percentage of households with no car. Within each band, postcodes were sorted by population density (persons per hectare). Any strata that contained fewer than 3 PSUs were grouped with adjacent strata prior to sample selection.

In each eligible household, one adult aged 16+ (with no upper age limit) was selected for interview, using a random selection procedure in households where there was more than one eligible adult.

An initial sample was drawn of 177 PSUs in England and Wales, 40 in Scotland and 40 in Northern Ireland. 25 addresses were sampled per PSU. A reserve sample of 17 additional points in England and Wales, and 10 each in Scotland and Northern Ireland was also selected[38]; of these, 10 were subsequently issued to interviewers, 4 reserve PSUs in England and Wales, and 6 in Scotland. The final number of PSUs was therefore 181 in England and Wales, 46 in Scotland and 40 in Northern Ireland (267 in total).

A total of 6675 addresses were issued to interviewers (4525 in England and Wales, 1150 in Scotland and 1000 in Northern Ireland). Of these, 6094 were eligible for interview (see Table 9.1)

10.1.3 Response rate

The response rate obtained was 54% of eligible households in the UK. Response rates varied by country:

- England and Wales – 53%
- Scotland – 52%
- Northern Ireland – 56%

The response rate was higher than that achieved at Wave 1 which was 52% overall and 51% for England and Wales, 50% for Scotland and 57% for Northern Ireland.

Tables 9.1 and 9.2 show the full breakdown of responses obtained; 8% of eligible households were not contacted, 32% refused to take part and 6% could not be interviewed for other reasons.

[38] The reserve PSUs were a precaution, in case responses rates were lower than expected and the required sample size might not be achieved. In the event, monitored response rates were running a little lower than hoped so some reserve PSUs were issued.

Table 9.1 Breakdown of survey responses – UK total

	UK total	
	n	% of in scope
Addresses sampled	**6675**	
Ineligible addresses		
Not yet built/under construction/derelict/demolished	23	
Vacant/empty housing unit	342	
Non-residential address	81	
Communal establishment/institution	8	
Not main residence	74	
Other ineligible	18	
Unable to locate address	35	
Total ineligible	**581**	
In scope addresses	**6094**	**100%**
No contact		
No contact with anyone at the address	431	
No contact with selected respondent	41	
Needed parental permission but no contact with parent	2	
Total no contact	**474**	**8%**
Refusal		
Parental permission refused	2	
Office refusal (by letter, phone or email)	63	
Info about dwellings or occupants refused	768	
Refusal before interview	979	
Proxy refusal	155	
Total refusal	**1967**	**32%**
Other unproductive		
Broken appointment	134	
Person ill at home during survey period	36	
Selected person away or in hospital	54	
Physically or mentally unable	80	
Inadequate English	41	
Lost interview	15	
Other unproductive	32	
Total other unproductive	**392**	**6%**
Interview completed	**3261***	**54%**

* This does not include 30 interviews in Scotland which were excluded from analysis because they were missing the healthy eating section due to a questionnaire error. As it was early in the fieldwork and not all of these 30 respondents had agreed to be recontacted it was decided that it would be best to replace these interviews. The 30 replacement interviews are included in the table and in the analysis. Additional sample points were issued to ensure that the number of complete interviews in Scotland exceeded the target of 500.

Table 9.2 Breakdown of survey responses – country level

	England and Wales		Scotland		Northern Ireland	
	n	% of in scope	n	% of in scope	n	% of in scope
Addresses sampled	**4525**		**1150**		**1000**	
Ineligible addresses						
Not yet built/under construction/derelict/demolished	6		7		10	
Vacant/empty housing unit	223		58		61	
Non-residential address	52		16		13	
Communal establishment/institution	6		2		0	
Not main residence	52		14		8	
Other ineligible	14		2		2	
Unable to locate address	20		12		3	
Total ineligible	**373**		**111**		**97**	
In scope addresses	**4152**	**100**	**1039**	**100**	**903**	**100**
No contact						
No contact with anyone at the address	241		79		111	
No contact with selected respondent	23		5		13	
Needed parental permission but no contact with parent	2		0		0	
Total no contact	**266**	**6%**	**84**	**8%**	**124**	**14%**
Refusal						
Parental permission refused	1		0		1	
Office refusal (by letter, phone or email)	43		14		6	
Info about dwellings or occupants refused	571		104		93	
Refusal before interview	660		215		104	
Proxy refusal	128		12		15	
Total refusal	**1403**	**34%**	**345**	**33%**	**219**	**24%**
Other unproductive						
Broken appointment	85		24		25	
Person ill at home during survey period	24		4		8	
Selected person away or in hospital	35		14		5	
Physically or mentally unable	54		17		9	
Inadequate English	28		5		8	
Lost interview	12		3		0	
Other unproductive	25		6		1	
Total other unproductive	**263**	**6%**	**73**	**7%**	**56**	**6%**
Interview completed	**2220**	**53%**	**507***	**52%**	**504**	**56%**

10.1.4 Questionnaire development

An extensive development phase was undertaken before finalising the questionnaire and survey procedures, to ensure that the second wave of the survey captured relevant information for the FSA and that the highest possible quality of data were produced[39].

After the second wave was commissioned, a review of the Wave 1 questionnaire was undertaken by the TNS BMRB/PSI research consortium, FSA research team and Food and You Advisory Group. This review looked at each question used in Wave 1 and considered its appropriateness for inclusion in Wave 2. The remit of the Food Standards Agency has changed since the first wave of the research, with responsibility for nutrition policy for England and Wales passing to the Department of Health[40]. Questions on healthy eating were thus no longer relevant in these countries, and were only retained in Scotland and Northern Ireland. The review also suggested the following areas for inclusion in Wave 2: new food technologies, meat controls, the Food Hygiene Rating Scheme and handling of raw fruit and vegetables.

Following the review, a questionnaire was developed by the TNS BMRB / PSI / UoW research consortium based on the above recommendations. The new draft survey questions were cognitively tested among 62 respondents in two locations, to ascertain whether they worked as intended, and to ensure respondents were able to answer them accurately. The cognitive testing also highlighted any ambiguous question wording, which was subsequently amended.

Following the cognitive testing, a small number of draft questions were included on TNS's face-to-face Omnibus survey. In total, 1,017 interviews were conducted with adults aged 16+ on the Omnibus survey. The aims of this additional testing were to:

- Assess the distribution of responses
- Ensure that questions elicited distinct responses from people with different characteristics
- Provide an indication of whether sample sizes were adequate for sub-group analysis
- Check if the questions were providing realistic estimates (where other statistics or evidence exist which can be used to verify results)
- See whether the findings confirmed results from the cognitive testing

Finally, a pilot was conducted among 63 respondents in January 2012 to test the questionnaire and survey procedures fully.

[39] A report commissioned by the FSA in 2010 and written by the Policy Studies Institute (PSI) looked at the feasibility of Wave 2 including questions about influences on food choice and perceptions of risk associated with food safety and diet. The report is available at: http://www.foodbase.org.uk//admintools/reportdocuments/641-1-1116_WAVE_2_DEV_FINAL_REPORT_FINAL.pdf

[40] On 1 October 2010, responsibility for nutrition policy (including labelling) was transferred to the Department of Health in England and to the Welsh Assembly Government in Wales. Nutrition policy in Scotland and Northern Ireland remains the responsibility of the FSA.

A revised questionnaire was produced based on the pilot findings, interviewer feedback and discussions between the TNS BMRB / PSI / UoW and FSA project teams. The final questionnaire was reviewed by the FSA and the Advisory Group.

10.1.5 Questionnaire content

The topics included in the questionnaire were as follows:

- Information about household members
- Eating habits (including eating out)
- Shopping habits
- Food safety attitudes and behaviour
- Attitudes towards food production
- Self-reported health
- Healthy eating (Scotland and Northern Ireland only)
- Demographics

Full details of the survey methodology, and a copy of the questionnaire and other survey materials, are included in the Technical Report[41].

10.1.6 Fieldwork

Interviews were carried out face-to-face, using computer-assisted personal interviewing (CAPI).

A video briefing for interviewers was produced by TNS BMRB with input from the FSA, to convey the key survey details and procedures to interviewers. The video briefing included background information on why the data was being collected by the FSA, and how the results would be used.

All sampled addresses were sent a letter in advance of the interviewer's visit. The letter gave a brief introduction to the survey and stressed the importance of taking part. The letter also stressed that all information would be kept confidential.

For addresses in Wales, the advance letter was provided in English and Welsh.

Respondents were offered a £10 incentive to encourage participation.

On average, interviews in England and Wales took 45 minutes to complete. In Scotland and Northern Ireland the average interview length was 60 minutes, owing to the additional healthy eating questions in these regions.

Interviews were carried out between late March and early September 2012.

[41] http://www.foodbase.org.uk//admintools/reportdocuments/805-1-1459_Wave_2_Technical_Report.pdf

10.1.7 Survey helpline

A freephone survey helpline was set up at TNS BMRB; the advance letter included the freephone number, which respondents could ring if they had any queries about the research. The helpline was answered during office hours by a member of the TNS BMRB research team, with an answer phone operating out of hours.

An email address was also set up, allowing respondents to get in touch with the survey team with any queries.

10.1.8 Data preparation and outputs

As main interviews were conducted via computer assisted personal interviewing (CAPI), this removed the need for data entry and routine data editing.

Where questions allowed interviewers to enter an "other" answer, these were examined to determine whether they could be back-coded into one of the pre-codes. If these answers did not fit into any of the existing codes and similar themes emerged, new codes were inserted; otherwise the answers were kept as "others".

Respondents were asked about the industry in which they were employed and their occupation. If a respondent was not currently in employment the question was asked about their most recent job. For those with more than one job, details were collected about their main job. Where the respondent was not the Household Reference Person (HRP)[42], occupation details for the HRP were also collected.

The occupations of respondents and HRPs were coded to sub-major groups using the Standard Occupational Classification (SOC 2010).

Occupation coding was carried out using the automated coding program CASCOT[43], developed by the Institute for Employment Research at the University of Warwick.

The National Statistics Socio-Economic Classification (NS-SEC) was derived and added to the dataset.

Further details of the coding system and codes can be obtained from the Office for National Statistics[44].

An SPSS data file has been provided to the FSA and the dataset will be deposited at the UK Data Archive[45].

[42] The Household Reference Person is the sole householder or, if there is more than one, as the householder with the highest personal income from all sources. If two or more householders have the same income, the eldest is the Household Reference Person.
[43] For more information on CASCOT see http://www2.warwick.ac.uk/fac/soc/ier/publications/software/cascot/
[44] http://www.statistics.gov.uk/default.asp
[45] http://www.data-archive.ac.uk/

10.1.9 Weighting

Weighting was necessary to adjust for unequal probabilities of selection and also to compensate for differential non-response across survey sub-groups.

Weights were calculated separately for Scotland, Northern Ireland and England and Wales.

Design weights were applied to correct for the unequal probabilities of selection introduced by selecting one adult for interview from all adults in the household.

For the UK weight, the design weight corrected the over-representation of Scotland and Northern Ireland relative to England and Wales (as boost samples were drawn in those countries).

The achieved sample profile was compared within country with Annual Population Survey (APS) data for working status by gender and age group. In England and Wales, region was also compared.

Rim weighting was applied in Northern Ireland and Scotland with targets for working status by sex, age group and sex; in England and Wales, rim weighting used the same targets and an additional one for region.

Finally the countries were scaled to their correct proportion to calculate a combined UK weight.

Tables 9.3-9.6 show the profile of the unweighted and weighted survey samples by country and in total compared with the APS, for a range of variables.

Table 9.3 APS targets, unweighted and weighted samples – England and Wales

England and Wales	APS data		Food and You unweighted sample		Food and You sample, weighted
	%	n	%	n	%
England and Wales	100.0	2220	100.0	2866	100.0
Working status by gender					
Men in full time work	26.9	456	20.5	772	26.9
Men not in full time work	22.0	477	21.5	631	22.0
Women in work	26.6	587	26.4	763	26.6
Women not in work	24.2	700	31.5	700	24.4
Age by gender					
Men aged 16-24	7.4	79	3.6	212	7.4
Men aged 25-34	8.4	132	5.9	242	8.4
Men aged 35-49	13.0	239	10.8	372	13.0
Men aged 50-64	11.0	244	11.0	316	11.0
Men aged 65+	9.1	238	10.7	260	9.1
Women aged 16-24	7.1	109	4.9	204	7.1
Women aged 25-34	8.2	207	9.3	236	8.2
Women aged 35-49	13.2	333	15.0	378	13.2
Women aged 50-64	11.4	301	13.6	327	11.4
Women aged 65+	11.0	336	15.1	316	11.0
Region					
North East	4.7	150	6.8	136	4.7
North West	12.5	284	12.8	357	12.5
Yorkshire & Humberside	9.6	221	10.0	275	9.6
East Midlands	8.1	172	7.7	233	8.1
West Midlands	9.8	236	10.6	280	9.8
East of England	10.5	259	11.7	301	10.5
London	14.4	249	11.2	413	14.4
South East	15.3	340	15.3	439	15.3
South West	9.6	205	9.2	275	9.6
Wales	5.5	104	4.7	157	5.5

Table 9.4 APS targets, unweighted and weighted samples – Scotland

Scotland	APS data		Food and You unweighted sample		Food and You sample, weighted
	%	n	%	n	%
Scotland	100.0	507	100.0	275	100.0
Working status by gender					
Men in full time work	26.2	104	20.5	72	26.2
Men not in full time work	21.8	97	19.1	60	21.8
Women in work	27.4	127	25.0	75	27.3
Women not in work	24.6	179	35.3	68	24.7
Age group					
16-24	14.2	49	9.7	39	14.2
25-34	15.7	67	13.2	43	15.6
35-49	25.8	127	25.0	71	25.8
50-64	24.1	140	27.6	66	24.0
65+	20.3	124	24.5	56	20.4

Table 9.5 APS targets, unweighted and weighted samples – Northern Ireland

Northern Ireland	APS data		Food and You unweighted sample		Food and You sample, weighted
	%	n	%	n	%
Northern Ireland	100.0	504	100.0	90	100.0
Working status by gender					
Men in full time work	26.7	81	16.1	24	26.7
Men not in full time work	22.0	100	19.8	20	22.2
Women in work	26.8	145	28.8	24	26.7
Women not in work	24.6	178	35.3	22	24.4
Age group					
16-24	15.9	61	12.1	14	15.7
25-34	17.7	82	16.3	16	18.0
35-49	26.5	127	25.2	24	27.0
50-64	21.9	132	26.2	19	21.3
65+	18.0	101	20.0	16	18.0

Table 9.6 APS targets, unweighted and weighted samples – UK

UK	APS data		Food and You unweighted sample		Food and You sample, weighted
	%	n	%	n	%
UK	100.0		100.0	3231	100.0
Working status by gender					
Men in full time work	26.9	641	19.8	868	26.9
Men not in full time work	22.0	674	20.9	711	22.0
Women in work	26.7	859	26.6	862	26.7
Women not in work	24.5	1057	32.7	790	24.5
Age					
16-24	14.5	298	9.2	469	14.5
25-34	16.6	488	15.1	537	16.6
35-49	26.2	826	25.6	845	26.2
50-64	22.6	817	25.3	728	22.5
65+	20.1	799	24.7	648	20.1
Gender					
Men	48.9	1315	40.7	1578	48.9
Women	51.1	1916	59.3	1653	51.1
Region					
England	83.8	2116	65.5	2709	83.8
Wales	4.9	104	3.2	157	4.9
Scotland	8.5	507	15.7	274	8.5
Northern Ireland	2.8	504	15.6	90	2.8

10.2 Derivation of the index of recommended practice (RP) for food safety

Analyses in Chapter 4 of the report use a composite index of food safety practices in the home which was developed to provide a summary of people's behaviour across a range of different practices including food preparation, storage, cross-contamination, cleanliness and use-by dates. The food safety practices included in the index were selected by the FSA from all the RPs asked about in Wave 2, on the basis that if they were not followed they were most likely to increase the chance of contracting a foodborne illness. The index is a scale from 0-10, with higher numbers indicating a lower likelihood to report behaviour that was in line with Agency food safety guidance. The specific food safety questions, responses considered to not be in line with RP, and weightings used in the index are detailed in Table 9.7.

Table 9.7 Derivation of the RP index (part 1)

Food safety practice	Non-RP response	Weighting
Chilling		
Q4.10 How often do you or another person in your household check the temperature of the fridge?	Four times a year or less, Can't remember	
Q4.11 Thinking about fridge temperature, can you tell me how you normally check the temperature?	Any response that **does not** include 'check the temperature display /thermometer built into fridge', 'put a thermometer into the fridge and check'	**+1 if any chilling practice was not in line with RP. Maximum +1**
Q12 What do you think the temperature inside your fridge should be?	Anything higher than 8^0C, Other, Don't know	
Cooking and reheating		
Q4.1 Thinking about when you are preparing and cooking food, I would like you to tell me whether you do the following things at all when you are in the kitchen and if so how frequently; a) Cook food to steaming hot b) Eat chicken or turkey if the meat is pink or has pink or red juices c) Eat burgers or sausages if the meat is pink or has pink or red juices	a) Never, Sometimes, Don't know b)-c) Always, Most of the time, Don't know	**+1 if any cooking practice was not in line with RP, +1 if any reheating practice was not in line with RP. Maximum +2**
Q4.45 How many times would you consider re-heating food after it was cooked for the first time?	Twice or more, Don't know	
Q4.26 And how do you usually tell that food has been re-heated properly?	Any response that **does not** include 'Steam is coming from it', 'Check middle is hot' or 'Use a thermometer'	

Table 9.7 Derivation of the RP index (part 2)

Food safety practice	Non-RP response	Weighting
Cross-contamination		
Q4.1 Thinking about when you are preparing and cooking food, I would like you to tell me whether you do the following things at all when you are in the kitchen and if so how frequently; a) Use different chopping boards are used for different foods b) Wash raw meat	a) Never, Sometimes, Don't know b) Always, most of the time, Don't know	**+1 for each cross-contamination practice that was not in line with RP. Maximum +2**
Cleaning		
Q4.1 Thinking about when you are preparing and cooking food, I would like you to tell me whether you do the following things at all when you are in the kitchen and if so how frequently; a) Wash hands after handling raw meat/fish	a) Never, Sometimes, Don't know	**+1 if any cleaning practice was not in line with RP. Maximum +1**
Use-by dates		
Q4.19b Which of these is the best indicator of whether food is safe to eat?	Best-before date, Sell by date, Display until date, Don't know	**+1 for each use-by practice that was not line with RP. Maximum +4**
Q22 Do you check use-by dates when you are about to cook or prepare food?	Never, Don't know	
Q11.6 What is the maximum time after the use-by/best-before date that you would a) Eat cooked meat	a) Any response that **is not** Never	
Q23a If you open <food type> and keep it stored in the fridge, what is the maximum number of days before definitely not eating/drinking it? a) Sliced cooked/cured meats b) Meat/fish/seafood pate c) Fresh dip d) Smoked fish e) Soft or cream cheese	a)– e) Three or more days, Don't know	

10.3 Regression analysis

In the section of the report (Chapter 4) that examines the index of recommended practice for food safety a logistic regression model was used to analyse the significance and contribution of a number of demographic factors in the extent to which respondents engaged in behaviours that were not in line with recommended practice. Logistic regression allows statistical associations between a response variable and a range of predictors to be explored. Logistic regression is a type of predictive model that can be used when the response variable is a categorical variable with two categories. In this study, the two were whether or not a respondent reported engaging in behaviours that were not in line with recommended practice.

Its advantage, compared to bivariate analysis, is that it allows for multiple variables to be included in the model at the same time, and therefore can model the change in overall likelihood if only one variable is changed and all others are held constant[46].

The logistic regression model was estimated using maximum likelihood methods. A forward stepwise approach was adopted, whereby the model starts with the variables used in the weighting and then tests the addition of each new predictive variable in turn. The model only adds variables which were found to improve the predictive power. In the case of the Northern Ireland regression, although working status was initially included in the model as it was used in the weighting it was not found to be significant. As a result of this the final model was run again excluding working status.

The variables included as predictors were drawn from basic socio-demographic data collected during interviews. Predictors for inclusion in the models were selected based on our analyses and/or supporting literature (Greenstreet Berman, 2011) suggesting they might be associated with a respondent being in the upper band of the index of recommended food safety practices. Only predictors that were highly collinear have been dropped from the models. Predictors included in the model are set out in the following table (9.8).

[46] Although multivariate analysis is generally viewed as more robust than bivariate analysis, it is important to note that there are a number of possible limitations with this approach. First, the variables included in the modelling generally do not explain most of the variance observed, suggesting that there were a number of other factors correlated with the dependent variable which have not been collected in the survey. Second, regression analysis runs the risk of over fitting the data. This occurs when a statistical model describes random error or noise instead of the underlying relationship.

Table 9.8 Independent variables included in the logistic regression

Independent variables	Categories
Gender	Men, *Women*
Age	16-24, 25-34, *35-44*, 45-54, 55-64, 65-74, 75+
Country	England, Wales, Scotland, *Northern Ireland*
Working status	*In work*, Retired, Unemployed, Other
Ethnicity	*White*, Black and Minority Ethnic (BME
Household size	One, Two, Three, *Four*, Five or more
Housing tenure	*Owner occupier*, Private tenant, Social tenant, Rent-free
Kitchen facilities	*Having a separate kitchen*, Not having a separate kitchen
Dietary restrictions	*Vegetarian/vegan*, Not vegetarian/vegan *Religious/cultural reasons*, Not *Allergy*, No allergy *Being on a diet*, Not being on a diet
NS-SEC	*Lower supervisory/technical*, Higher managerial/professional, Intermediate, Small employers/own account workers, Semi-routine and routine, Never worked/unemployed
Presence of children in the household	*Aged under 6*, Aged under 16 (but none under 6), No children
Level of education	*Degree or higher*, A level/ Diploma/ Apprenticeship, GCSE, Other/ None
Household income	Up to £10,399, £10,400 to £25,999, £26,000 to £51,999, *£52k+*
Health	*Very good*, Good, Fair, Bad/Very bad
Car ownership	*Own a car*, Do not own a car
Having a long-term disability or illness	Have a disability/long-term illness, *Do not have a disability/long-term illness*
Living arrangements (relationship status);	*Living as a couple*, Not living as a couple

Note: the category in *italics* is the reference category for each variable

10.3.1 Explanation of terms

The principal output from logistic regression is an **odds ratio**. An odds ratio compares the probability of an outcome occurring if a respondent falls into one category of a predictor

variable (e.g. women being classified into the upper RP band) with the probability of the same outcome occurring for respondents who fall into another category of the same variable (e.g. men being classified into the upper band), after other variables in the model were controlled for.

In calculating odds ratios, a **reference category** was selected for each variable as the category of that variable against which the odds for all other categories of that variable were compared. For example, continuing the above example, Women was chosen as the reference category for gender, and the results of the regression modelling for this variable indicate the likelihood of men being in the upper band of the index compared to women.

The odds ratio indicates the size of the effect, that is, by how much a variable increases or decreases the likelihood of being in the upper band of the index compared to the reference category. If the odds ratio was **less than 1**, it means that the odds of being in the upper band of the index were lower for this category than they were for the reference category. If the odds ratio was **greater than 1**, then the odds of being in the upper band were higher for this category than for the reference category. So, for example Table 9.9 indicates that men have an odds ratio of 1.5 which indicates that, once all factors were controlled for, they have 50% higher odds of being in the upper band than women (the reference category).

The column headed '**p-value**' reports p-values from a statistical test of the true value of the predictor being zero. Values lower than 0.05 are statistically significant at the 95 per cent level. In the case of this example, the odds for men reported in Table 9.9 have a p-value of 0.000. This shows that the estimate is statistically significant at the highest level.

The **Nagelkerke R^2** is used to show the proportion of variability in the data that is explained by the regression model. Broadly speaking, an R^2 of 1 indicates that the regression line perfectly fits the data, whereas a 0 indicates that the regression model does not explain the data at all.

10.3.2 Full results of Regression Analysis

In the main report, the tables showing the results from the regression have been simplified. The full tables of results are presented below.

The results are shown for the regression model carried out on the entire UK sample and there are also separate tables for the regression models carried out on sub-samples of the population for Scotland, Northern Ireland and, England and Wales.

Table 9.9 Regression analysis – United Kingdom

	Significance level	Odds ratio	Lower 95% C.I. for odds ratio	Upper 95% C.I. for odds ratio
Gender				
Women		(1)		
Men	.000	1.538	1.298	1.822
Age				
35-44		(1)		
16-24	.064 *	1.436	.979	2.106
25-34	.169 (ns)	1.255	.908	1.736
45-54	.001	1.718	1.264	2.333
55-64	.001	1.798	1.284	2.517
65-74	.014	1.732	1.117	2.685
75+	.000	2.490	1.556	3.984
Country				
Northern Ireland		(1)		
England	.000	1.870	1.437	2.433
Wales	.671 (ns)	1.130	.644	1.984
Scotland	.010	1.525	1.107	2.099
Working status				
In work		(1)		
Retired	.994 (ns)	.999	.716	1.392
Unemployed	.014	1.552	1.093	2.202
Other	.116 (ns)	1.232	.950	1.597
Tenure				
Owner Occupier		(1)		
Private tenant	.579	.928	.713	1.208
Social tenant	.449	1.096	.865	1.388
Rent-free	.008	.390	.194	.786
Ethnicity				
White		(1)		
BME	.004	1.603	1.166	2.205

	Significance level	Odds ratio	Lower 95% C.I. for odds ratio	Upper 95% C.I. for odds ratio
Dietary restrictions				
Partly/completely vegetarian/ vegan		(1)		
Not vegetarian	.001	2.238	1.400	3.579
Size of household				
Four		(1)		
One	.031	1.518	1.038	2.220
Two	.649 (ns)	1.087	.760	1.554
Three	.778 (ns)	1.053	.737	1.504
Five or more	.046	1.528	1.008	2.316
Separate kitchen				
Yes		(1)		
No	.046	1.376	1.006	1.883
NS-SEC				
Lower supervisory /technical		(1)		
Higher managerial /professional	.112 (ns)	1.266	.947	1.694
Intermediate	.582 (ns)	1.111	.765	1.613
Small employers /own account workers	.013	1.553	1.097	2.2
Semi-routine & routine	.089*	1.292	.961	1.737
Never worked & unemployed	.666 (ns)	1.128	.652	1.953
Presence of children in household				
Aged under 6		(1)		
Aged under 16, but none under 6	.752 (ns)	1.064	.725	1.560
No children	.621 (ns)	1.099	.757	1.596
Nagelkerke R^2		**0.079**		

The reference category is labelled with a (1) in the odds ratio column. For each variable the odds ratio for each category was calculated by taking the ratio of the odds of someone in one category being in the upper band of the index compared to the odds of someone in the reference category being in the upper band of the index. (ns) Denotes 'not significant' at the 95% level (where the P-value was greater than 0.05). * denotes not significant at the 95% level but was significant at the 90% level (P-value between 0.05 and 0.1). Red shading indicates higher odds of being in the upper band of the index when it comes to food safety. Blue shading indicates lower odds of being in the upper band of the index.

Table 9.10 Regression analysis – Northern Ireland

	Significance level	Odds ratio	Lower 95% C.I. for odds ratio	Upper 95% C.I. for odds ratio
Gender				
Women		(1)		
Men	.000	3.033	1.845	4.986
Age				
35-44		(1)		
16-24	.319(ns)	1.651	.616	4.424
25-34	.335(ns)	1.593	.618	4.105
45-54	.174(ns)	1.874	.758	4.628
55-64	.034	2.664	1.075	6.602
65-74	.206(ns)	1.896	.704	5.107
75+	.010	3.804	1.383	10.462
Continuous use of a motor vehicle?				
Yes		(1)		
No	.020	1.885	1.104	3.220
Nagelkerke R^2		**0.098**		

Table 9.11 Regression analysis – Scotland

	Significance level	Odds ratio	Lower 95% C.I. for odds ratio	Upper 95% C.I. for odds ratio
Gender				
Women		(1)		
Men	.004	1.871	1.221	2.866
Age				
35-44		(1)		
16-24	.724(ns)	1.193	.447	3.184
25-34	.156(ns)	1.817	.796	4.150
45-54	.225(ns)	1.640	.737	3.649
55-64	.004	3.075	1.434	6.592
65-74	.109(ns)	2.437	.821	7.239
75+	.034	3.595	1.102	11.727
Working status				
In work		(1)		
Retired	.585(ns)	.792	.343	1.830
Unemployed	.026	2.604	1.120	6.055
Other	.744(ns)	1.112	.590	2.096
Nagelkerke R^2		**0.077**		

Table 9.12 Regression analysis – England and Wales

	Significance level	Odds ratio	Lower 95% C.I. for odds ratio	Upper 95% C.I. for odds ratio
Gender				
Women		(1)		
Men	.000	1.425	1.173	1.733
Age				
35-44		(1)		
16-24	.780	1.064	.687	1.648
25-34	.656	1.087	.753	1.568
45-54	.000	1.847	1.316	2.592
55-64	.008	1.660	1.144	2.408
65-74	.028	1.740	1.063	2.847
75+	.001	2.370	1.397	4.019
Working status				
In work		(1)		
Retired	.547	1.128	.762	1.670
Unemployed	.103	1.402	.934	2.104
Other	.039	1.363	1.015	1.831
Ethnicity				
White		(1)		
BME	.004	1.609	1.165	2.223
Dietary restrictions				
Partly/completely vegetarian/ vegan		(1)		
Not vegetarian	.001	2.257	1.378	3.694
Separate kitchen				
Yes		(1)		
No	.015	1.559	1.091	2.227
Living as a couple				
Yes		(1)		
No	.003	1.351	1.107	1.650
Nagelkerke R^2		**0.056**		

10.4 References

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