

The 2014

FOOD and YOU

Survey

Wales Bulletin 2
Food safety in the home

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Food safety in the home

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Official Statistics

The statistics presented in this bulletin meet the requirements of the UK Code of Practice for Official Statistics.¹

Further information on Official Statistics can be found on the UK Statistics Authority website².

¹ <http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html>

² <http://www.statisticsauthority.gov.uk/national-statistician/types-of-official-statistics/index.html>

Foreword

This bulletin presents a descriptive overview of selected findings for Wales from Wave 3 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 reported behaviours, attitudes and knowledge relating to these topics.

Waves 1 and 2 of the Food and You survey were carried out in 2010 and 2012 respectively. Wave 3 was conducted in 2014 and consisted of 3,453 interviews from a representative sample of adults aged 16 and over across the UK, including 503 interviews in Wales, on which this report is based. Wave 3 builds on and extends the previous findings.

The key findings for Wales from Wave 3 have been published in four separate bulletins, one for each of the following main topics:

- Eating, cooking and shopping
- Food safety in the home
- Eating outside the home
- Experience of food poisoning and attitudes towards food safety and food production

In addition to the bulletins, an executive summary has been published which presents key findings for Wales from across the entire survey.

This bulletin provides a descriptive overview of the key findings for Wales from Wave 3 in relation to food safety in the home.

Background and objectives

Role of the FSA

The FSA was created in 2000 as a non-ministerial, independent government department governed by a Board whose members have extensive knowledge and experience in a wide range of sectors relevant to the FSA. 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 FSA is responsible for food safety and hygiene across the UK, and is committed to ensuring the general public can have trust and confidence in the food they buy and eat. The FSA in Wales is additionally responsible for policy on general food labelling and food composition and standards.

In providing guidance on food safety to consumers, the Agency aims to minimise the risk of food poisoning. Advice generally relates to four aspects of food hygiene: cleaning, cooking, avoiding cross-contamination and chilling (collectively known as the '4 Cs'), with advice provided 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.

The Food and You survey

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

Waves 1 and 2 of the Food and You survey were conducted by the same consortium in 2010 and 2012 respectively. Reports of the findings and methodological details are available on the FSA website³. Specific examples of use of the findings include results from Wave 1 being used to determine the theme of the 2012 FSA Food Safety Week⁴ and findings from Wave 2 informing FSA public campaigns on food safety. Secondary analysis of the Waves 1 and 2 data has explored domestic food safety practices⁵ and the relationships between nutrition and food safety⁶. Wave 3 was carried out in 2014 by TNS BMRB.

Prior to 2010, the FSA was responsible for food safety and nutrition policy across the UK. Accordingly, Wave 1 of the Food and You survey contained questions covering both healthy eating and food safety, and the findings were reported together. During Wave 1, responsibility for nutrition policy (healthy eating) was transferred in England and Wales to the Department of Health (DH) and the Welsh Government respectively. Waves 2 and 3, therefore, focussed solely on food safety issues for respondents in England and Wales. This bulletin covers the UK wide food safety questions asked to respondents living in Wales. Separate bulletins have been published for each UK country, as well as a bulletin of the UK results as a whole⁷.

The objectives for Wave 3 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
- 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 Waves 1 and 2 or from other sources) in reported attitudes and behaviour
- Broaden the evidence base and develop indicators to assess progress in fulfilling the Agency's strategic plans, aims and targets.

About this bulletin

Self-reported behaviours

Interviews as a data collection method do not necessarily capture people's actual practices. What respondents say in interviews about what they do and think is necessarily *reported* for a number of reasons, including recall not being accurate, certain behaviours being habitual and therefore possibly difficult to recall, and desirability bias – described further below. Here self-reported behaviour is used as a proxy for actual behaviour. Where the report refers to behaviour, attitudes or knowledge, the fact that the data refer to reported behaviour must always be borne in mind.

When developing the Food and You questionnaire, it was apparent that the risk of social desirability bias was 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 reluctant to report behaviour which goes against a generally well known 'best practice' (for example, not washing their hands before cooking or preparing food). The Food and You questionnaire was carefully designed to limit this as far as possible by asking questions about behaviour in specific time periods (e.g. asking whether a respondent did something 'in the last seven days' rather than 'usually') and framing questions in a neutral way.

³ The Wave 1 report can be found at: http://www.foodbase.org.uk/admintools/reportdocuments/641-1-1079_Food_and_You_Report_Main_Report_FINAL.pdf and the Wave 2 report can be found at: http://www.foodbase.org.uk/admintools/reportdocuments/805-1-1460_Wave_2_Main_Report.pdf

⁴ <http://www.food.gov.uk/news-updates/campaigns/germwatch/>

⁵ <http://www.food.gov.uk/science/research/ssres/fs409012>

⁶ <http://www.food.gov.uk/science/research/ssres/crosscutss/fs307014>

⁷ <http://www.food.gov.uk/science/research-reports/ssresearch/foodandyou>

Questionnaire changes between waves

To reflect the changing responsibilities of the FSA, the focus of the survey content was changed between Wave 1 and Wave 2. To minimise any effects caused by changing the order of the questions attempts were made to keep the structure of the questionnaire as similar as possible between the waves. Despite this, the removal of the healthy eating questions in England and Wales, and further revisions of the food safety questions 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 1 and 2 may have been partly or wholly because of changes to the questions in general and to the changed context resulting from removing the 'healthy eating' questions in particular. Further changes were made to the questionnaire at Wave 3. Again, whilst efforts were made to keep the structure of the questionnaire as similar as possible to the Wave 2 questionnaire, unavoidable differences were introduced between these two waves of the survey. That observed differences could be an effect of changes to the questionnaire should be kept in mind when considering the findings.

Where questions have remained consistent across the waves of the survey, statistical analysis has been used to determine whether results have changed significantly over time. Although having three data points now means it is possible to see trends starting to emerge, doing so is inevitably still tentative, whereas further waves of data collection would allow greater confidence in identifying trends.

There are two other important differences to note between waves: -

- The sample boost applied in Wave 3 means that the sample size of those living in Wales is higher at Wave 3 (503 respondents) than at either Wave 1 (121 respondents) or Wave 2 (104 respondents).
- At Wave 1 of the survey, in order to cover additional topics without over-burdening respondents, three question modules (eating arrangements, eating out and shopping patterns) were each asked of a random third of respondents. At Waves 2 and 3, all question modules were asked of all respondents.

The net result of these differences is that some analyses for Waves 1 and 2 data are based on a sample of fewer than 50 respondents. This is particularly the case for some questions from Wave 1 which were only asked of a third of respondents. These findings are still included in this report to provide contextual information, but care should be taken not to over-interpret these findings. In some cases much larger differences are required, when comparing Wave 1 to either Waves 2 or 3, in order for statistical significance to be achieved.

The Food and You Technical Report⁸ provides a summary of questionnaire changes between Wave 2 and Wave 3.

Reporting conventions

Unless stated otherwise, where comparisons are made in the text between different population groups or variables, only those differences found to be statistically significant at the five per cent level are reported. In other words, differences as large as those reported have no more than a five per cent probability of occurring by chance.

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

Topics covered

The Food and You survey collected data on a wide range of topics. As a result it is not feasible for this series of bulletins to present detailed analysis of all of the questions. Only selected socio-demographic variables have been analysed to uncover statistically significant differences, particularly as the Wales sample size is lower than that compared with the UK as a whole. These variables were identified by the FSA as of key interest, providing the most useful information about sub-group variation at this initial stage of data analysis. The identified variables were: age, gender and Welsh

⁸ <http://www.food.gov.uk/sites/default/files/food-and-you-2014-uk-bulletin-technical-report.pdf>

Index of Multiple Deprivation (WIMD)⁹. Due to the small base numbers for Wales at Waves 1 and 2, variation by these variables was only examined for Wave 3 data. Full data are available in the UK Data Archive¹⁰ and at data.gov.uk¹¹ for further analysis.

⁹ WIMD is the official measure of relative deprivation for small areas in Wales. It considers deprivation across income, employment, health, education, geographical access to services, community safety, physical environment and housing. Areas are grouped into quintiles based on their 2010 Index of Multiple Deprivation (IMD) score, with quintile 1 the most deprived areas across Wales and quintile 5 the least deprived areas.

¹⁰ <http://www.data-archive.ac.uk/>

¹¹ <http://data.gov.uk/>

1. Background

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.

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 avoiding Cross Contamination) of good food hygiene which is aimed at preventing cases of domestic foodborne illness thus reducing its incidence:

Principles of good food hygiene – the '4 Cs'

Cleanliness

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

Cooking

- Cook food thoroughly, especially meat and poultry.
- Make sure food is steaming hot throughout before serving.
- If you reheat food, make sure it is steaming hot throughout and only reheat it once.

Chilling

- Store raw meat in a covered container on the bottom shelf of the fridge, away from ready to eat foods.
- Check your fridge temperature regularly using a thermometer. Fridge temperature should be below 5 degrees Celsius.
- Once opened, food should be kept in the fridge and used within two days, unless the packaging states otherwise.

Avoiding Cross Contamination

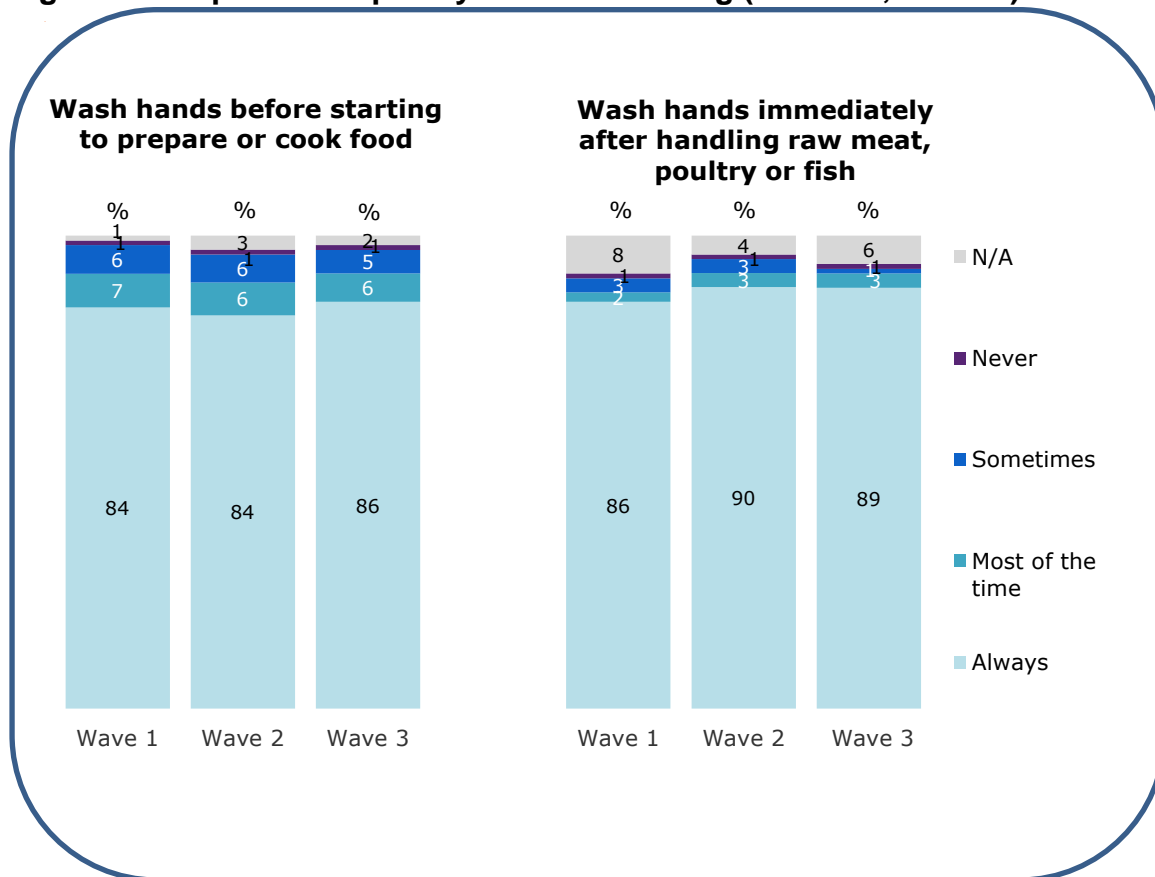
Cross contamination, or the transfer of bacteria from raw foods to ready-to-eat foods, can happen in several ways, including:

- 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.

This bulletin presents the findings relating to each aspect of domestic food safety practice, as well as practices relating to date labelling.

2. Practices relating to the '4 Cs' - Cleaning

Figure 2.1 Reported frequency of hand washing (Waves 1, 2 and 3)



Source: Q4_1 Thinking about when you are storing, preparing and cooking food, I would like you to tell me whether you do or don't do the following things at all when you are in the kitchen and if so how frequently.

Base: All Wales respondents – Wave 1 (121); Wave 2 (104); Wave 3 (503)

The FSA recommends that hands should be washed thoroughly on a regular basis and in particular before preparing food, after touching raw food (especially meat), and after using the toilet.

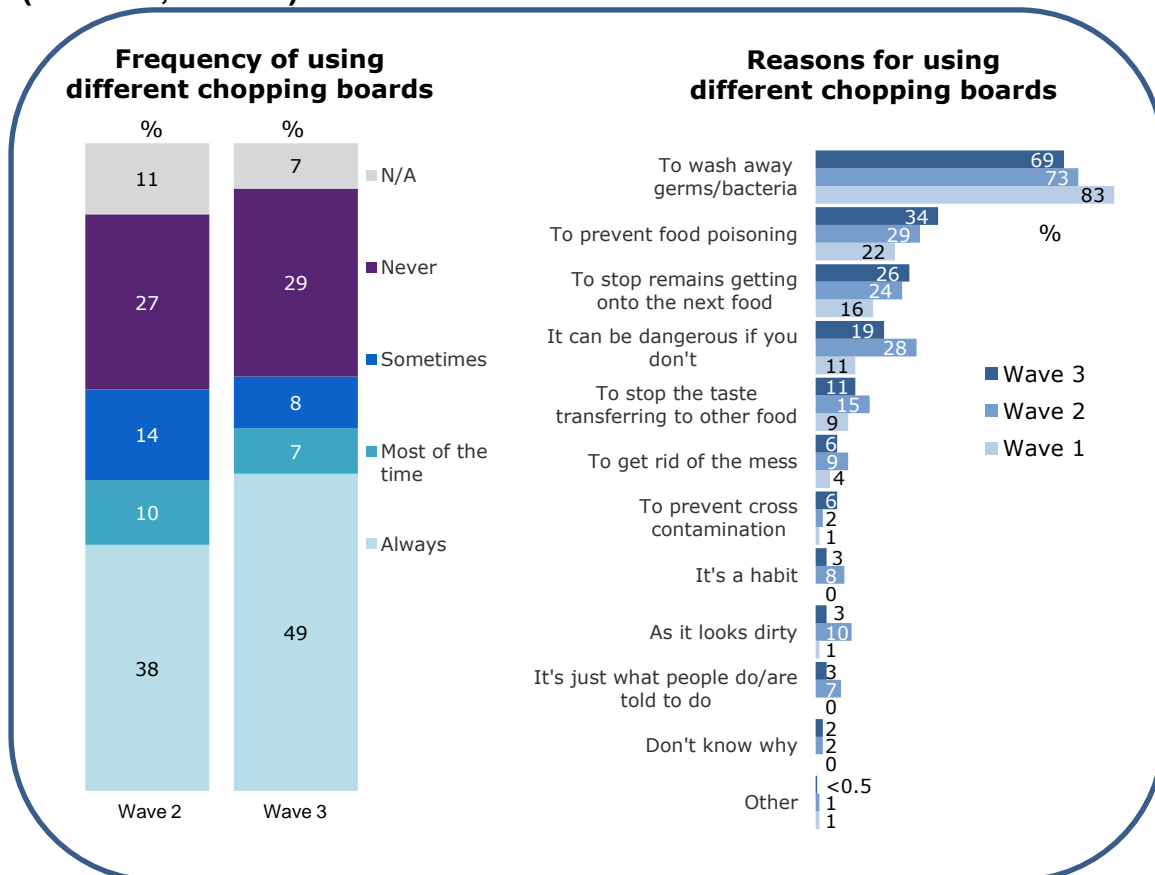
- Overall, 86% of respondents reported always washing their hands before starting to prepare or cook food, and 97% reported that they did this at least some of the time. These proportions were similar to those at Waves 1 and 2.
- The majority of respondents (89%) reported always washing their hands immediately after handling raw meat, poultry or fish, similar to the proportion at Waves 1 and 2.
- One per cent of respondents said they never washed their hands before preparing or cooking food and one per cent said they never washed their hands immediately after handling raw meat, poultry or fish.

- In total, 82% of respondents reported always washing their hands before starting to prepare or cook food, and always washing their hands after handling raw meat poultry or fish (if they ever did this), in line with FSA recommended practice for cleaning.

3. Practices relating to the '4 Cs' – Avoiding cross-contamination

3.1 Chopping boards

Figure 3.1 Frequency of, and reasons for, using different chopping boards (Waves 1, 2 and 3)



Source: Q4_1 Thinking about when you are storing, preparing and cooking food, I would like you to tell me whether you do or don't 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?

Note: respondents were able to give multiple reasons in answer to Q4_3;

Note: responses to Q4_3 were given spontaneously, with no prompted response list shown to respondents.

Base: All Wales respondents - Wave 1 (121); Wave 2 (104); Wave 3 (503) (Q4_1 not asked at Wave 1)

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.

- Around half (49%) of respondents said they always used different chopping boards for different foods, whilst 29% said that they never did, similar to the proportions at Wave 2.
- At Wave 3, 56% of respondents reported using different chopping boards always or most of the time, similar to the proportion at Wave 2.

- Around seven in ten respondents (69%) 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, in line with the reason underpinning recommended practice. This was similar to the proportion of respondents reporting this at Wave 2, compared with 83% at Wave 1.
- Around a third of respondents (34%) said the reason for washing a chopping board was to prevent food poisoning, similar to Wave 2 (29%), compared with 22% at Wave 1. Six per cent said it was to prevent cross-contamination (compared with one per cent at Wave 1). Both of these reasons are in line with the reasoning underpinning recommended practice.
- The proportion of respondents giving the more general reason that it can be dangerous if you do not use a different board was 19%, similar to Wave 2 (28%), and compared with 11% at Wave 1.
- Other reasons commonly cited were to stop remains from getting onto the next food (26%), similar to Wave 2 (24%), compared with 16% at Wave 1, and to stop the taste transferring to other food (11%), similar to Wave 1 (nine per cent) and Wave 2 (15%). These are not reasons which underpin recommended practice.

3.2 Food storage in the fridge

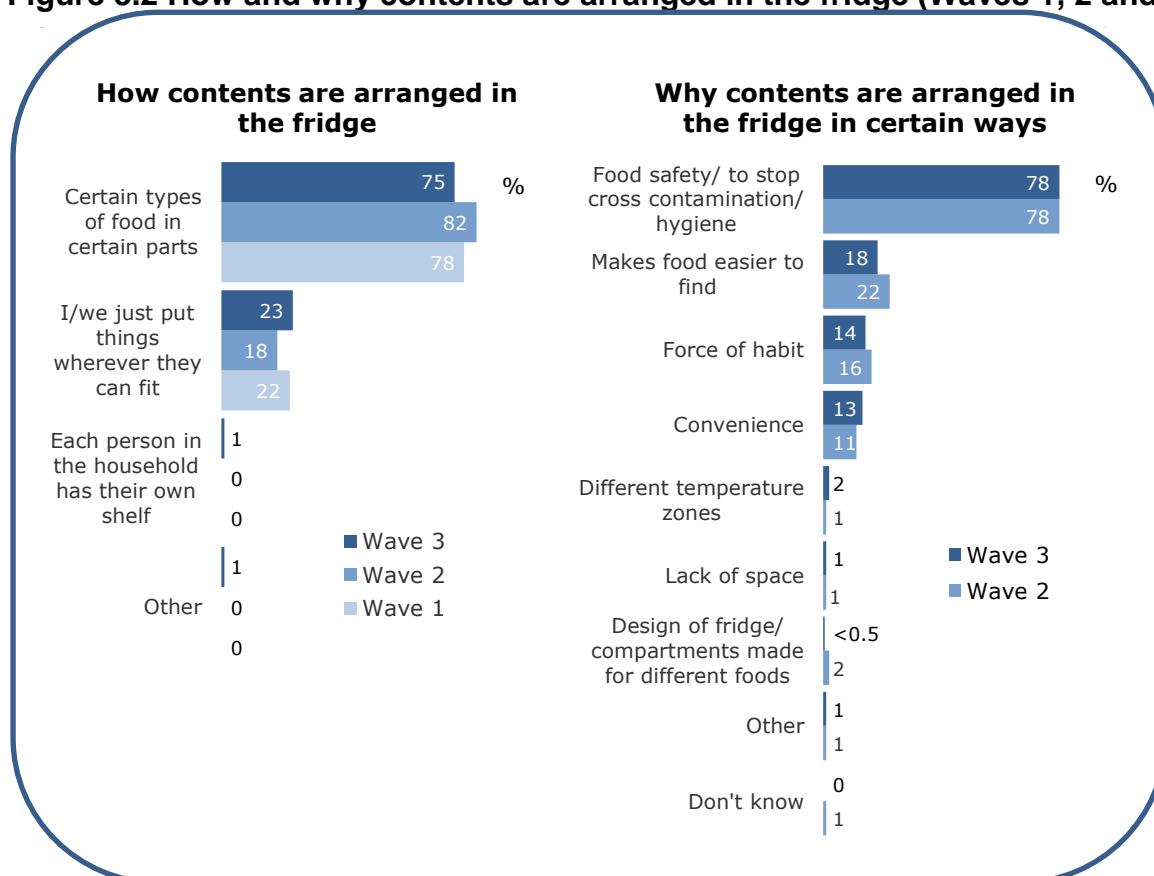
The FSA advises that raw meat should be stored separate from ready-to-eat food and that raw meat and poultry should be stored in sealed containers at the bottom of the fridge, to avoid dripping onto other food.

The image below illustrates the FSA's advice on how food can be safely stored in the fridge¹².



¹² <http://www.food.gov.uk/northern-ireland/nutritionni/niyoungpeople/survivorform/dontgetsick/chilling>

Figure 3.2 How and why contents are arranged in the fridge (Waves 1, 2 and 3)



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?

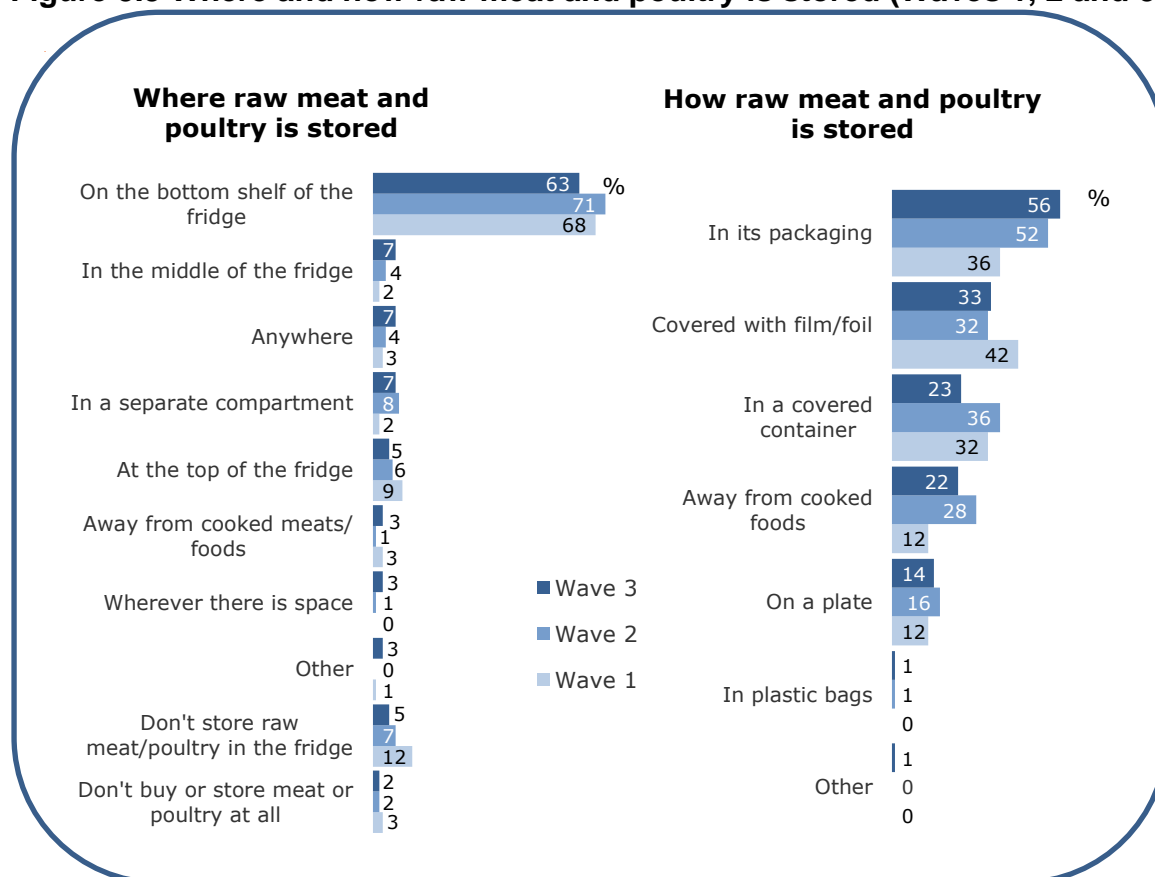
Note: respondents were able to give multiple reasons in answer to Q4_13a

Note: responses to Q4_13a were given spontaneously, with no prompted response list shown to respondents.

Base: Q4_13 All Wales respondents – Wave 1 (121); All Wales respondents who have a fridge in their household – Wave 2 (104); Wave 3 (496); Q4_13a All Wales respondents who always keep certain types of food in certain parts of the fridge – Wave 2 (86); Wave 3 (385) (Q4_13a not asked at Wave 1)

- When asked how they arranged the contents of their fridge, three-quarters (75%) of respondents said they always kept certain types of food in a specific part of the fridge while around a quarter (23%) said they just put things wherever they fit.
- 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. Eighteen per cent said that they did this because it made food easier to find, 14% said it was force of habit and 13% saying they did it for convenience.
- There were no statistically significant differences between Waves 1, 2 and 3.

Figure 3.3 Where and how raw meat and poultry is stored (Waves 1, 2 and 3)



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?

Note: respondents were able to give multiple answers to both questions

Note: responses to both questions were given spontaneously, with no prompted response list shown to respondents.

Base: Q4_14 All Wales respondents – Wave 1 (121); All Wales respondents who have a fridge in their household – Wave 2 (104); Wave 3 (496) & Q4_15 All Wales respondents who store raw meat and poultry - Wave 1 (104); Wave 2 (93); Wave 3 (451)

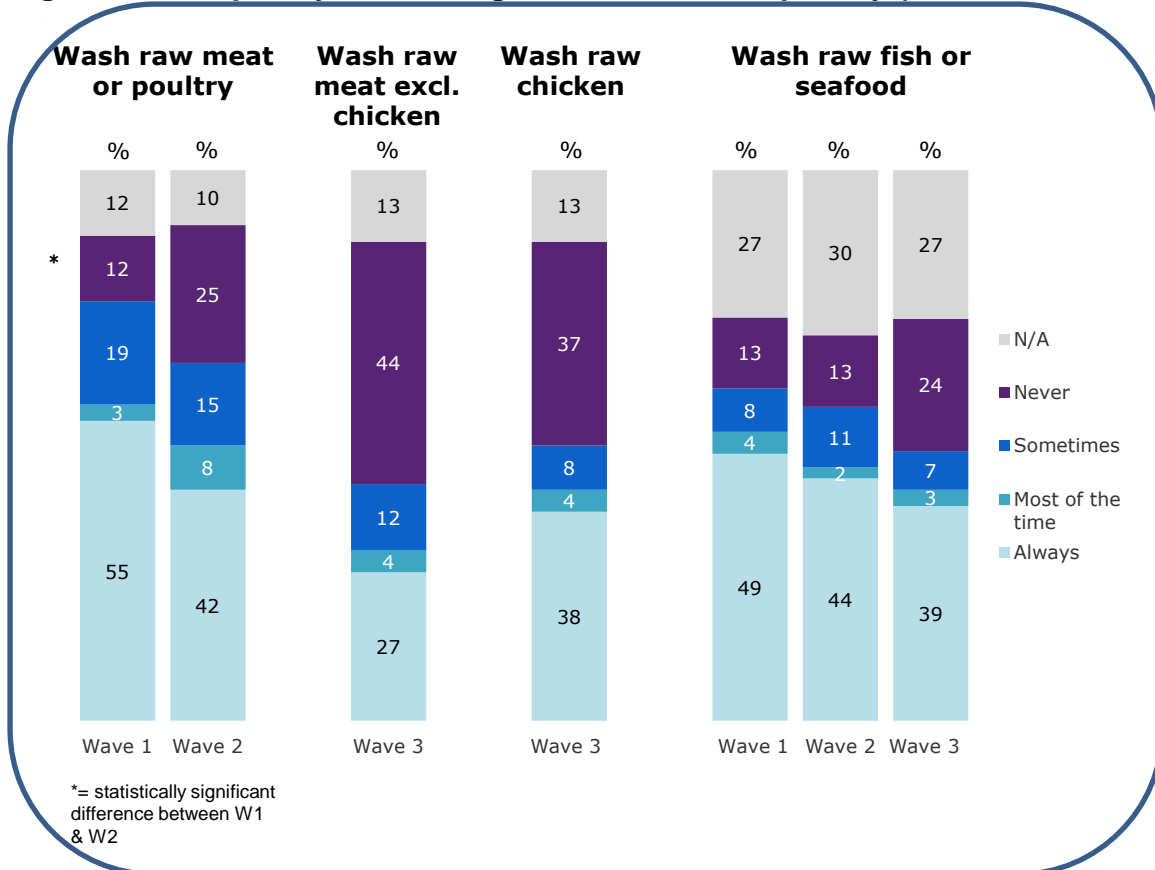
- Of respondents who said that they had a fridge in their household, 63% reported that they stored raw meat and poultry on the bottom shelf of the fridge, in line with recommended practice. Seven per cent said they stored it in the middle of the fridge, while five per cent said they stored it at the top of the fridge. Seven per cent reported keeping raw meat and poultry in a separate compartment, and three per cent reported keeping it away from cooked meats, in line with recommended practice.
- Of respondents who reported storing raw meat and poultry in their fridge, 56% said they stored it in its packaging, compared with 36% at Wave 1. This is not in line with recommended practice.
- Thirty-three per cent of respondents reported that they covered raw meat and poultry with film or foil, 23% that they kept it in a covered container (compared with 36% at Wave 2), and 22% reported that they stored it away from cooked food (compared with 12% at Wave 1, but similar to the proportion at Wave 2). These behaviours are in line with recommended practice.

- Fourteen per cent of respondents reported storing raw meat or poultry on a plate (similar to the proportion at Waves 1 and 2), which is not in line with recommended practice.
- Looking across these reported practices, around half (51%) of those who reported storing raw meat and poultry in their fridge reported practice in line with FSA guidance on how raw meat should be stored in a fridge.¹³
- Respondents were also asked whether they stored food in open tins in the fridge. The majority (71%) reported that they never did so, in line with FSA recommended practice, as the tin may contaminate the food. Twenty-five per cent said that they did this at least some of the time, and three per cent said that they always stored food in open tins in the fridge. These findings were similar to those at Wave 2.

¹³ This was defined as 'On the bottom shelf' or 'In a separate compartment e.g. a meat drawer or salad tray' or 'Kept separate from other foods' or 'Kept in separate/another fridge' or 'Away from cooked foods' at Q4_14, and 'Away from cooked foods' or 'Covered with film / foil' or 'In a covered container' or 'in a drawer / special compartment / allocated shelf in fridge' or 'In plastic bags (any mention)' or 'On a covered plate / bowl / dish' at Q4_15.

3.3 Washing raw meat and fish

Figure 3.4 Frequency of washing raw meat, fish or poultry (Waves 1, 2 and 3)



Source: Q4_1 Thinking about when you are storing, preparing and cooking food, I would like you to tell me whether you do or don't do the following things at all when you are in the kitchen and if so how frequently.

Base: All Wales respondents - Wave 1 (121); Wave 2 (104); Wave 3 (503)

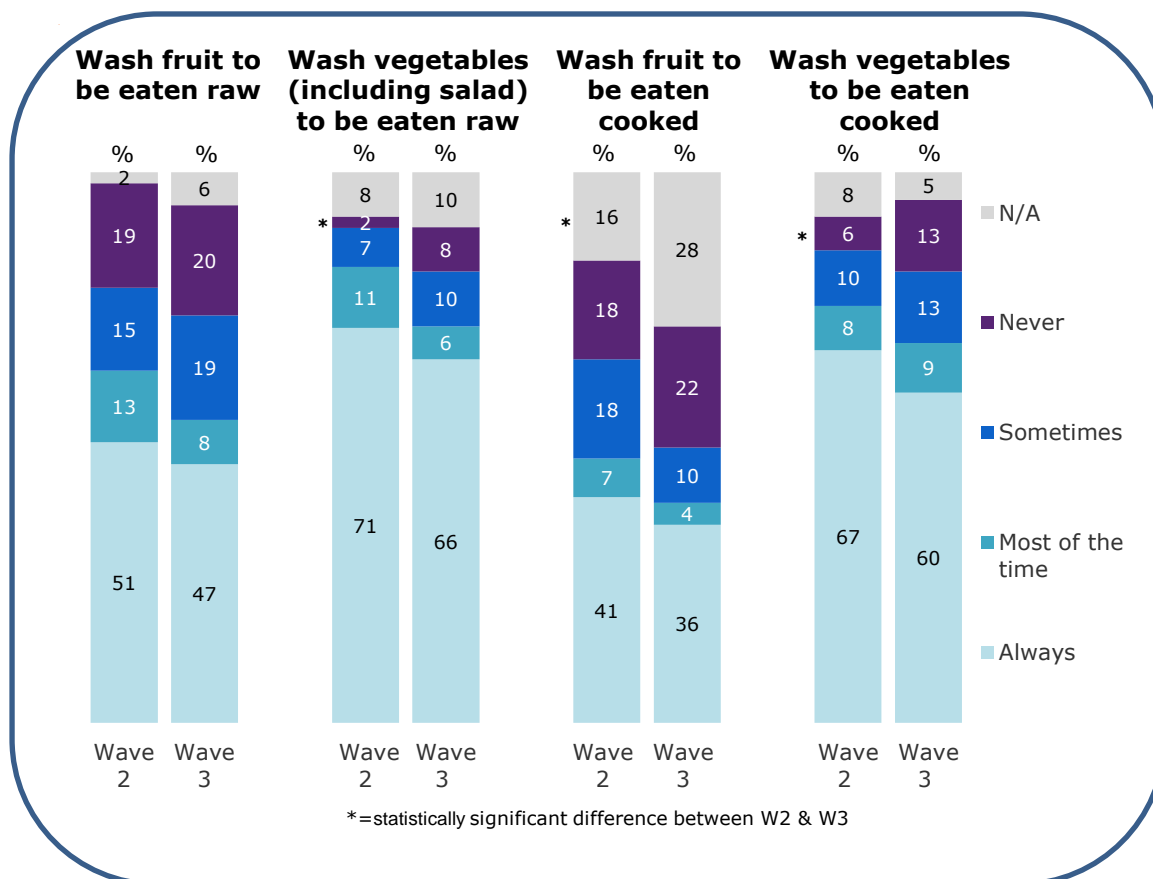
The FSA recommends that raw meat and fish are not washed prior to cooking due to the risk of cross contamination from water splashing on the sink, surrounding surfaces, and utensils, which may come into contact with ready to eat food.

- At Wave 3, nearly four in ten respondents (37%) reported never washing raw chicken. Half of respondents (50%) reported washing raw chicken at least sometimes, with 38% reporting that they always washed raw chicken. Respondents were less likely to report washing other raw meats compared with raw chicken, with 44% of respondents reporting never washing other raw meats and 43% reporting that they washed them at least sometimes. Twenty-seven per cent of respondents said that they always washed raw meat other than chicken.

- Changes to the question at Wave 3 to separate raw meat and poultry other than chicken from raw chicken make comparisons with Waves 1 and 2 difficult. Nevertheless the proportion of respondents reporting that they never washed raw meat appeared to be higher at Wave 3, particularly meat other than chicken. This follows a higher proportion of respondents reporting that they never washed raw meat or poultry at Wave 2 compared with Wave 1 (25% compared with 12%).
- In comparison to raw chicken and other meat, respondents at Wave 3 were less likely (24%) to report never washing raw fish or seafood when preparing and cooking it. This was higher than the proportion of respondents who reported never washing raw fish and seafood at both Waves 1 and 2 (13% at both waves). Thirty-nine per cent of Wave 3 respondents said they always washed raw fish or seafood.
- Twenty-seven per cent of Wave 3 respondents said that storing, preparing and cooking raw fish and seafood was not applicable to them, compared with 13% of respondents who reported this for both raw chicken and other meats. A similar pattern was observed at Waves 1 and 2.

3.4 Washing fruit and vegetables

Figure 3.5 Frequency of washing fruit and vegetables which are going to be eaten raw and cooked (Waves 2 and 3)



Source: Q4_1 Thinking about when you are storing, preparing and cooking food, I would like you to tell me whether you do or don't do the following things at all when you are in the kitchen and if so how frequently.

Base: All Wales respondents - Wave 2 (104); Wave 3 (503) (Question not asked at Wave 1)

The FSA recommends 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).

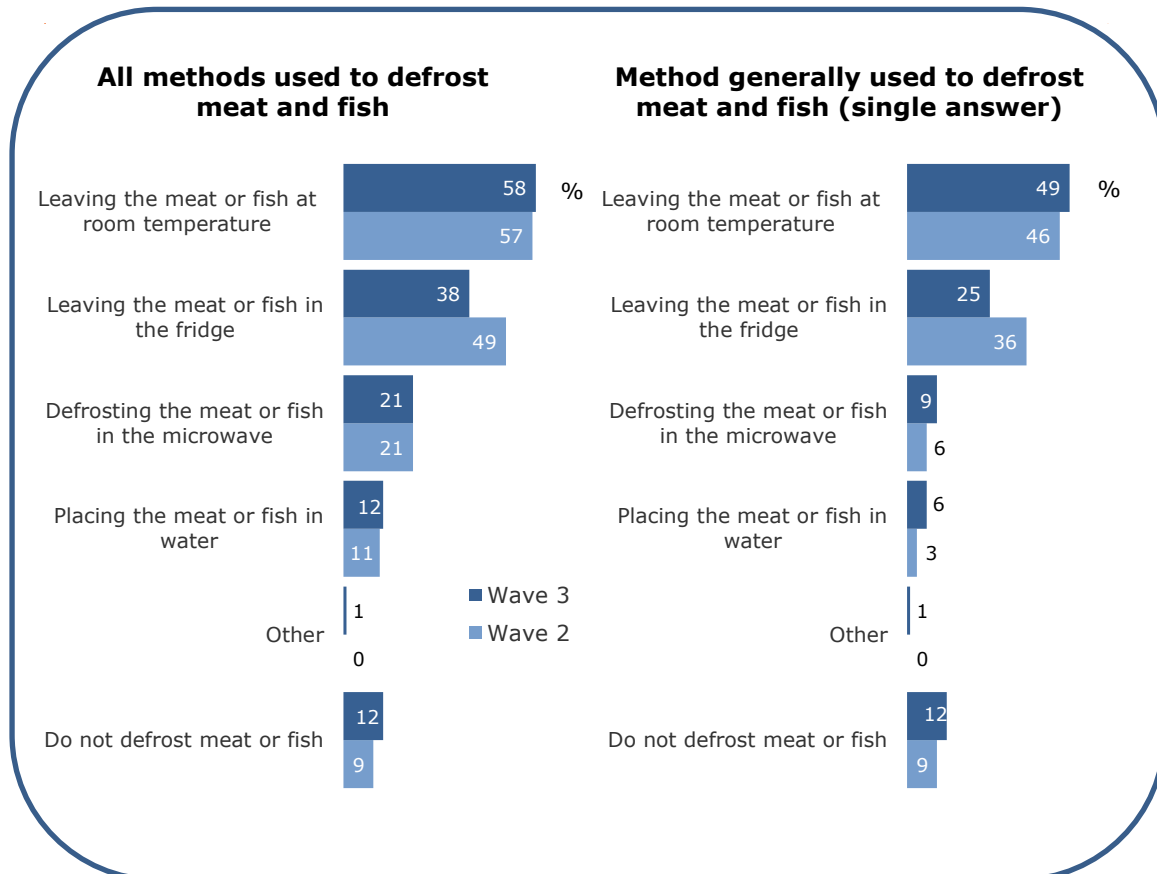
- Forty-seven per cent of respondents reported that they always washed fruit which was going to be eaten raw whilst 74% said they did this at least some of the time. Twenty per cent of respondents reported that they never washed fruit which was going to be eaten raw. These findings were similar to those at Wave 2.
- Respondents were more likely to report washing vegetables that were going to be eaten raw; 66% said that they always did, 83% said they did this at least some of the time and eight per cent said they never did this (compared with two per cent at Wave 2).

- A lower proportion of respondents reported that they would always wash fruit that was going to be cooked compared with when it would be eaten raw (36% compared with 47%). Fifty per cent reported that they washed fruit that was going to be cooked at least some of the time, while 22% said that they never did.
- Respondents were more likely to report that they washed vegetables which were going to be cooked compared with fruit; 60% said they always did (compared with 36% for fruit), 82% said they did this at least some of the time (compared with 50% for fruit) and 13% reported they never did, compared with six per cent at Wave 2 and 22% for fruit.
- A greater proportion of respondents reported that the question relating to fruit to be eaten cooked was not applicable to them (28%), compared with the proportion stating this for the other types of fruit and vegetables, and compared with the proportion at Wave 2 (16%).

4. Practices relating to the '4 Cs' – Chilling

4.1 Chilling and defrosting

Figure 4.1 Defrosting meat and fish (Waves 2 and 3)



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?

Note: respondents were able to give multiple answers to Q4_1b

Base: All Wales respondents - Wave 2 (104); Wave 3 (503) (Questions not asked at Wave 1)

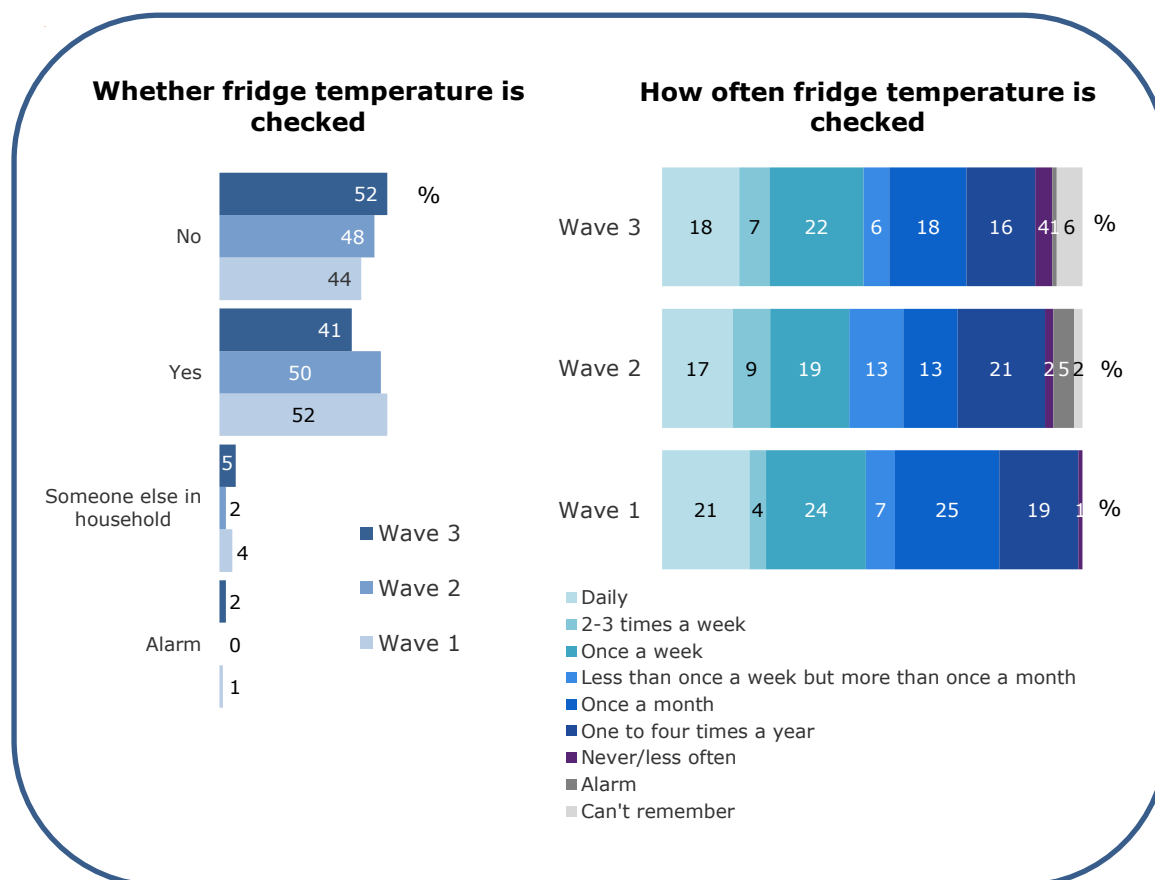
The FSA recommends defrosting food slowly and safely overnight in the refrigerator or using a microwave oven (carefully ensuring that the food is fully defrosted before cooking it straight away). The FSA does not recommend defrosting food at room temperature as this provides ideal conditions for bacteria to grow.

- Respondents were most likely to report leaving meat or fish at room temperature (58%) in order to defrost. Thirty-eight per cent of respondents said that they defrosted meat or fish in a refrigerator, and 21% in a microwave oven, similar to the findings at Wave 2.

- When asked for the single method they generally used, 49% of respondents said they generally left the meat or fish at room temperature, 25% reported that they generally defrosted it in a refrigerator and nine per cent said they generally used a microwave oven, again similar to the findings at Wave 2.

4.2 Checking fridge temperature

Figure 4.2 Checking fridge temperature (Waves 1, 2 and 3)



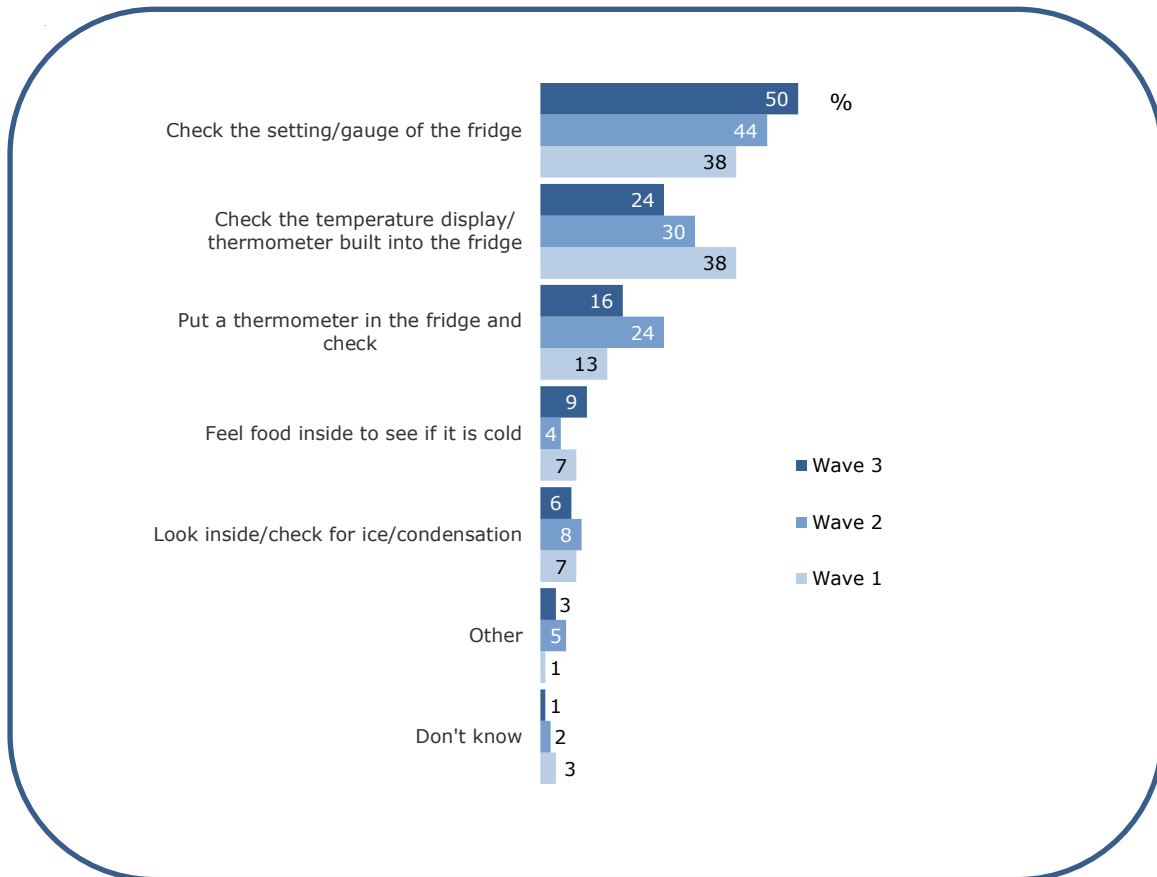
Source: Q4_9 Do you ever check your fridge temperature? & Q4_10 How often do you or another person in your household check the temperature of the fridge?

Base: Q4_9 All Wales respondents – Wave 1 (121); All Wales respondents who have a fridge in their household – Wave 2 (104); Wave 3 (496) & Q4_10 All Wales respondents who check their fridge temperature – Wave 1 (64); Wave 2 (54); Wave 3 (228)

The FSA recommends that fridge temperatures are checked regularly and that the temperature is kept between 0-5°C to help stop food poisoning bacteria such as *Listeria monocytogenes* from growing in food.

- Of respondents who had a fridge, 46% reported that they or someone else checked the temperature, whilst 52% reported that they never checked their fridge temperature. Around four in ten (41%) said they checked it themselves.
- A minority of respondents (two per cent) said they did not need to check their fridge temperature as their fridge had an alarm if it was too hot or cold.
- The frequency with which respondents reported checking their fridge temperature was similar to Waves 1 and 2. Around seven in ten respondents (71%) who checked their fridge temperature said that they did so at least once a month, in line with recommended practice. Forty-seven per cent said that they checked at least once a week and 18% said that they checked at least daily.

Figure 4.3 How fridge temperature is checked (Waves 1, 2 and 3)



Source: Q4_11 Still thinking about fridge temperatures, can you tell me how you normally check the temperature?

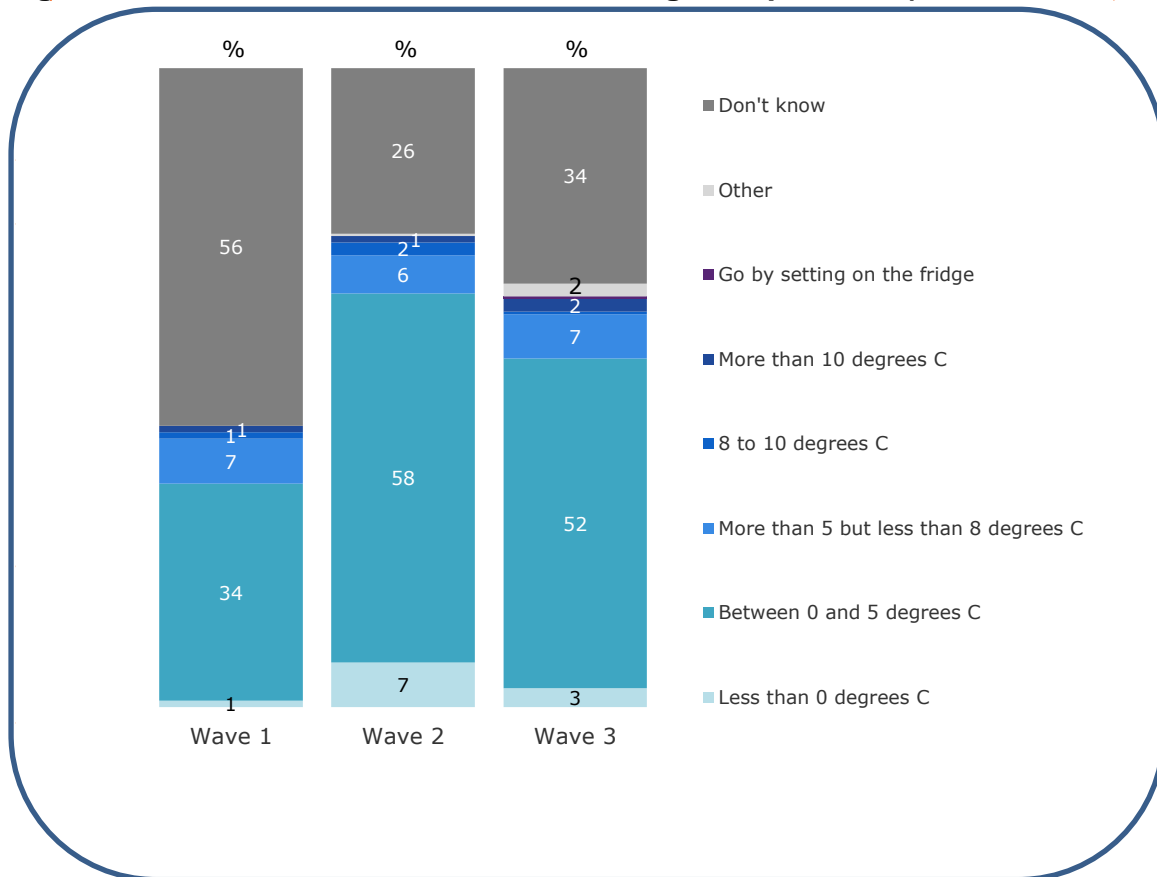
Note: respondents were able to give multiple answers

Note: responses to Q4_11 were given spontaneously, with no prompted response list shown to respondents.

Base: All Wales respondents who check their fridge temperature and do not have a fridge alarm - Wave 1 (64-small base); Wave 2 (51 – small base); Wave 3 (224)

- Respondents who reported checking their fridge temperature, but did not have an alarm, were asked how they normally checked it. Findings were similar to those at Waves 1 and 2.
- **The use of a thermometer is the recommended method for checking fridge temperature** and 16% of respondents reported using this method by putting a thermometer in the fridge and checking, and around a quarter of respondents (24%) reported checking the temperature display or thermometer built into the fridge.
- The most common method was to check the setting / gauge of the fridge, mentioned by half of respondents (50%). This is not a recommended method of checking the fridge temperature as these are not usually an indication of temperature.

Figure 4.4 Awareness of recommended fridge temperature (Waves 1, 2 and 3)



Source: Q4_12 What do you think the temperature inside your fridge should be?

Note: responses to Q4_12 were given spontaneously, with no prompted response list shown to respondents.

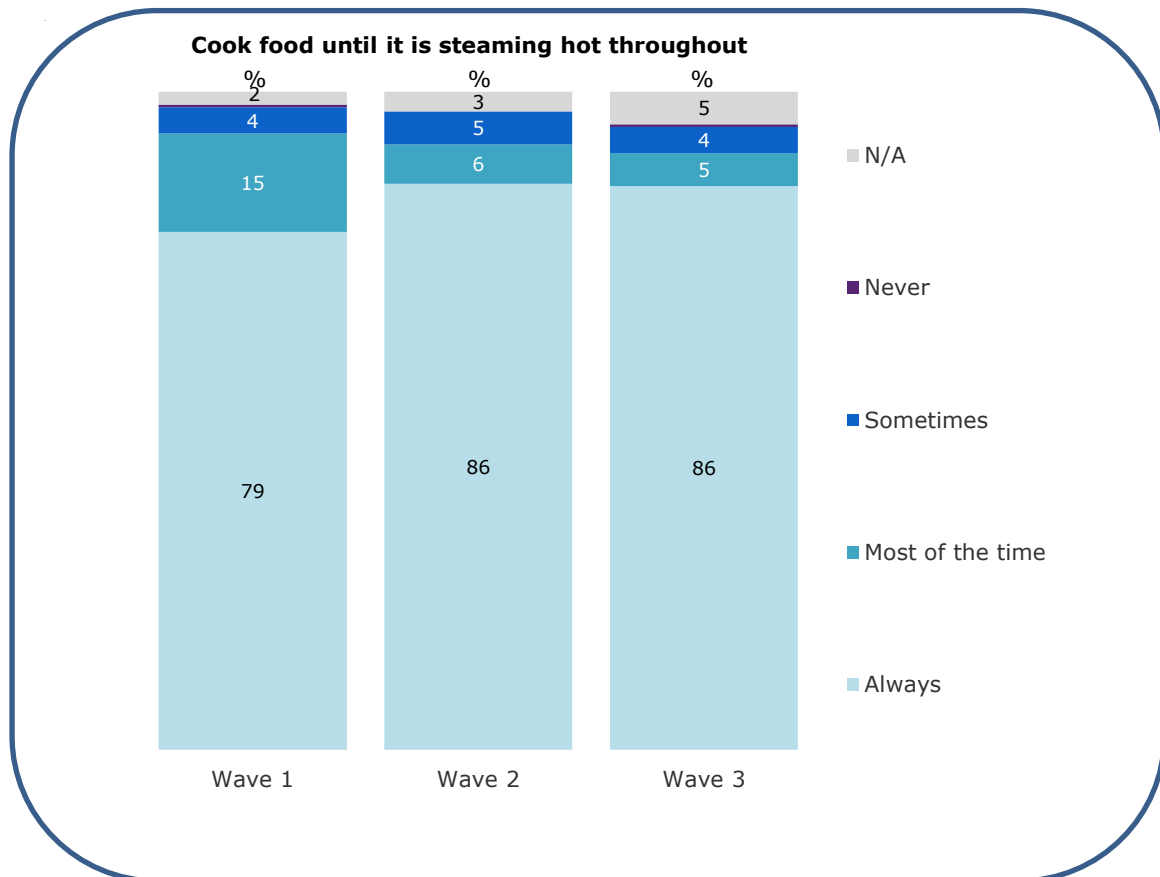
Base: All Wales respondents- Wave 1 (121); All Wales respondents with a fridge in their household – Wave 2 (104); Wave 3 (496)

- When asked what respondents thought the temperature inside the fridge should be, around half (52%) said the fridge temperature should be between 0°C and 5°C (the recommended temperature). This was similar to the proportion that reported this at Wave 2, and higher than the proportion that reported this at Wave 1 (34%).
- Thirty-four per cent of respondents at Wave 3 reported that they did not know what the fridge temperature should be, similar to the proportion at Wave 2 and lower than that at Wave 1 (56%). Other respondents gave a range of answers, with more providing a response above the recommended temperature range than below the recommended range.
- In total 11% of respondents who had a fridge reported behaviours in line with FSA recommended practice for checking that their fridge temperature remains between 0°C and 5°C at least monthly using a thermometer.

5. Practices relating to the '4 Cs' – Cooking

5.1 Cooking food until steaming hot

Figure 5.1 Frequency of cooking food until it is steaming hot throughout (Waves 1, 2 and 3)



Source: Q4_1 Thinking about when you are storing, preparing and cooking food, I would like you to tell me whether you do or don't do the following things at all when you are in the kitchen and if so how frequently?

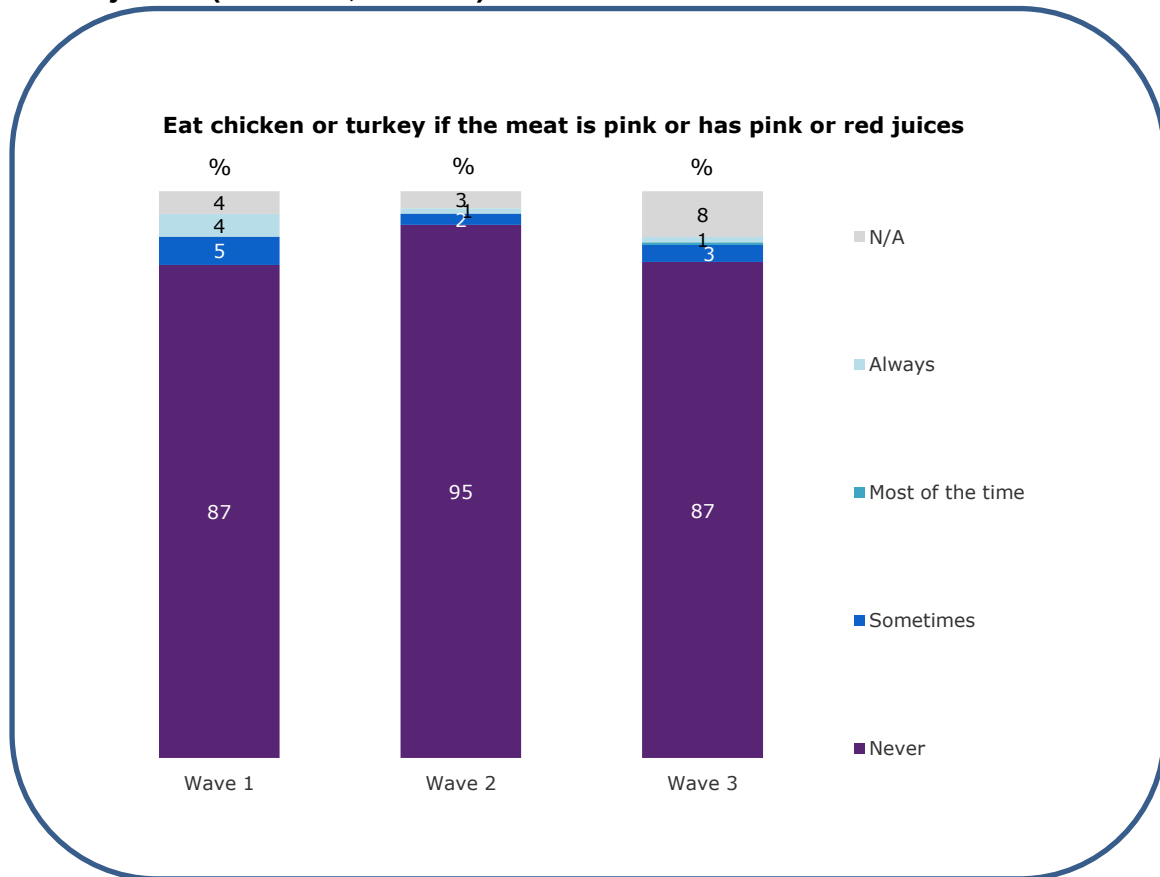
Base: All Wales respondents - Wave 1 (121); Wave 2 (104); Wave 3 (503)

The FSA recommends that all food is cooked until it is steaming hot throughout.

- At Wave 3, 86% of respondents reported that they always cooked food until it was steaming hot throughout, similar to the proportions reporting this at Waves 1 and 2.
- Five per cent of respondents reported that they cooked food until it was steaming hot throughout most of the time. This was similar to the proportion recorded at Wave 2, compared with 15% at Wave 1.

5.2 Cooking and eating meat, poultry, sausages or burgers

Figure 5.2 Frequency of eating chicken or turkey if the meat is pink or has pink or red juices (Waves 1, 2 and 3)



Source: Q4_1 Thinking about when you are storing, preparing and cooking food, I would like you to tell me whether you do or don't do the following things at all when you are in the kitchen and if so how frequently?

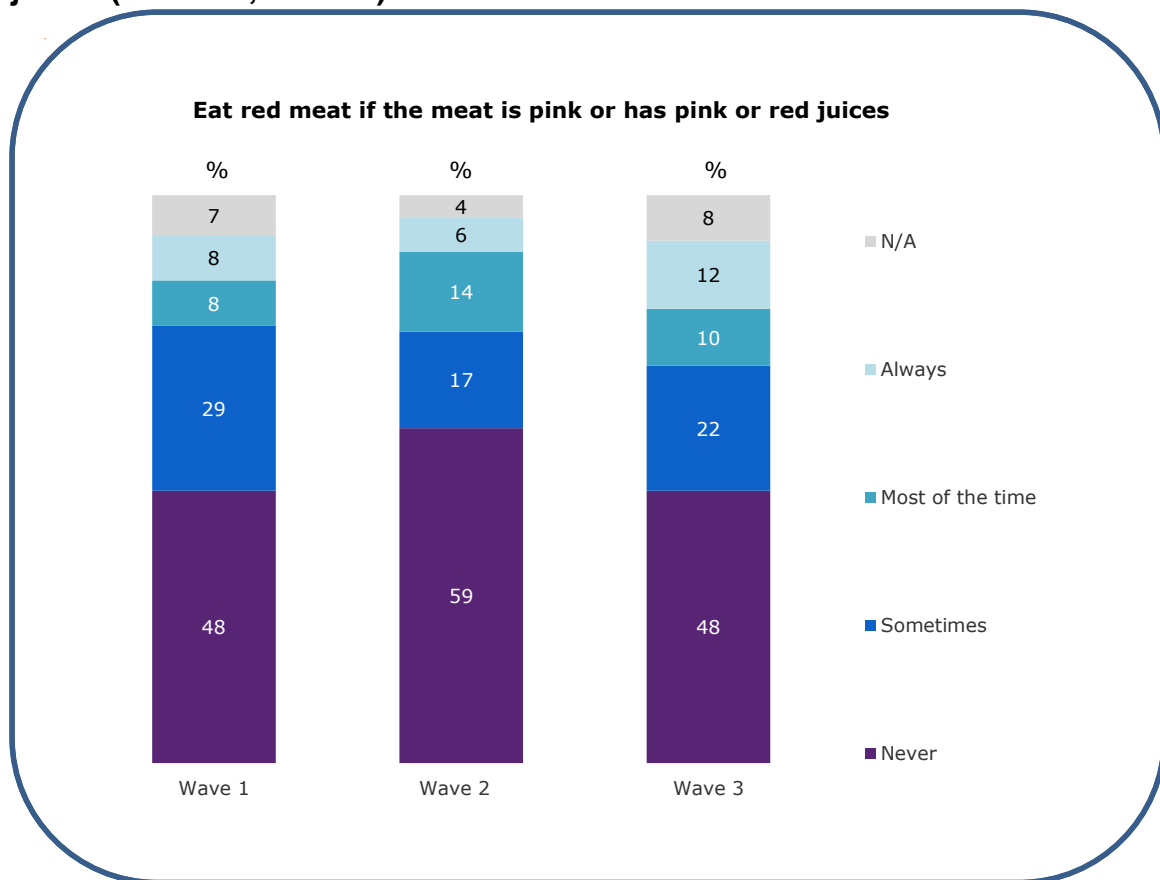
Base: All Wales respondents - Wave 1 (121); Wave 2 (104); Wave 3 (503)

The FSA advises that poultry and game such as chicken, turkey, duck and goose, and other meats including pork, burgers, sausages and kebabs should be properly cooked all the way through, that is, they are not pink and have no pink or 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 outside¹⁴.

- Five per cent of respondents reported eating chicken or turkey if the meat was pink or had pink or red juices.
- Eighty-seven per cent of respondents reported that they never ate chicken or turkey if the meat was pink or had pink or red juices, similar to the proportion at Wave 1 and compared with 95% at Wave 2.

¹⁴ 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.

Figure 5.3 Frequency of eating red meat, if the meat is pink or has pink or red juices (Waves 1, 2 and 3)

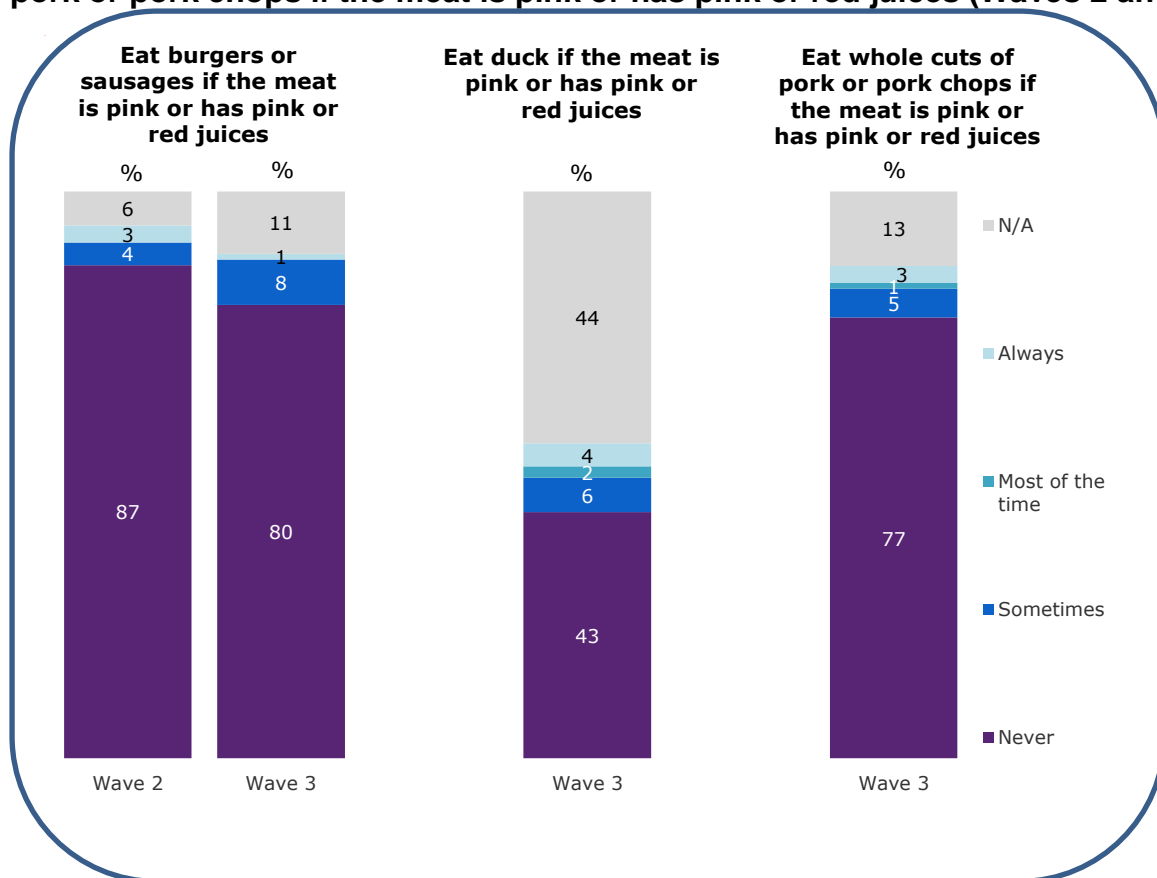


Source: Q4_1 Thinking about when you are storing, preparing and cooking food, I would like you to tell me whether you do or don't do the following things at all when you are in the kitchen and if so how frequently?

Base: All Wales respondents - Wave 1 (121); Wave 2 (104); Wave 3 (503)

- For red meat, 12% of respondents said they always ate red meat if it was pink or had pink or red juices, and 48% reported that they never did.
- The findings were similar to those at Waves 1 and 2.

Figure 5.4 Frequency of eating burgers or sausages, duck, or whole cuts of pork or pork chops if the meat is pink or has pink or red juices (Waves 2 and 3)



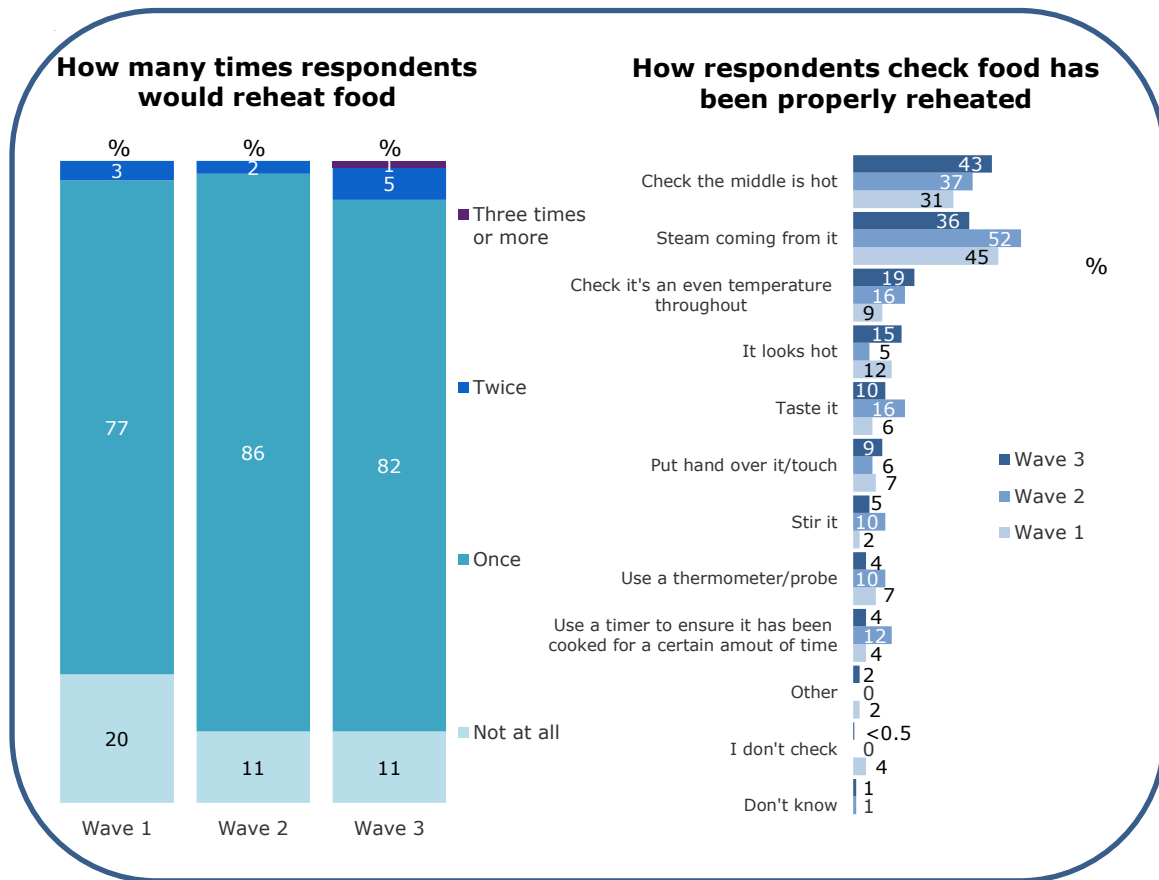
Source: Q4_1 Thinking about when you are storing, preparing and cooking food, I would like you to tell me whether you do or don't do the following things at all when you are in the kitchen and if so how frequently?

Base: All Wales respondents - Wave 2 (104); Wave 3 (503) (Questions not asked at Wave 1 and duck and pork first asked about at Wave 3)

- Eighty per cent of respondents reported that they never ate burgers or sausages if the meat was pink or had pink or red juices. Nine per cent of respondents reported that they ate burgers or sausages at least sometimes if the meat was pink or had pink or red juices. This was similar to the proportion at Wave 2.
- Forty-three per cent of respondents reported never eating duck if it had pink meat or pink or red juices, and a further 44% said that this question was not applicable to them. In total, 13% of respondents reported eating duck with pink meat or red juices at least some of the time.
- Around three quarters of respondents said they never ate pork if it was pink or had pink or red juices (77%) and 10% said they did this at least some of the time.

5.3 Reheating

Figure 5.5 Reheating food (Waves 1, 2 and 3)



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? (answers given by more than one per cent of respondents at any wave are shown)

Note: respondents were able to give multiple answers to Q4_26

Note: responses to both questions were given spontaneously, with no prompted response list shown to respondents

Base: Q4_25 All Wales respondents who have leftovers - Wave 1 (113); Wave 2 (95); Wave 3 (464) & Q2_46 All Wales respondents who have leftovers and would consider re-heating - Wave 1 (90); Wave 2 (87); Wave 3 (411)

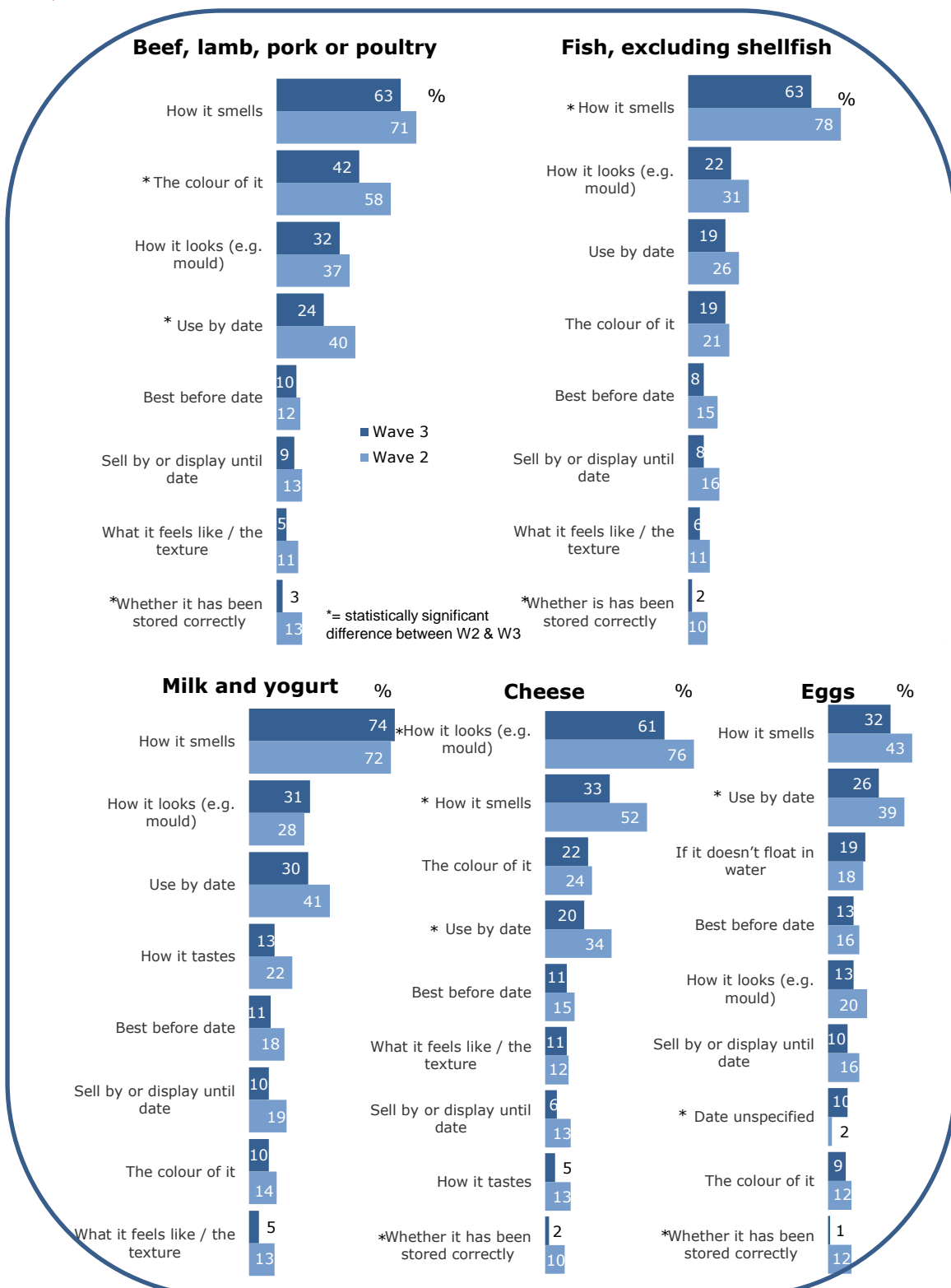
The FSA recommends that leftovers should not be reheated more than once and should be steaming hot throughout before serving.

- Eighty-two per cent of respondents reported that they would only re-heat food once, and 11% said they would not re-heat food at all. Six per cent of respondents reported that they would re-heat food twice or more. Reported reheating practices were similar to those at Waves 1 and 2.
- Forty-three per cent of respondents reported testing if food had been properly reheated by checking if the middle was hot, which was the most commonly reported method.
- Around a third of respondents (36%) reported testing if food had been properly reheated by seeing if steam is coming out of it, compared with 52% at Wave 2 but similar to the proportion at Wave 1 (45%).

- Nineteen per cent said that they check if the reheated food is an even temperature throughout (compared with nine per cent at Wave 1), and 15% reported checking that the food looks hot, compared with five per cent at Wave 2 but similar to the proportion at Wave 1 (12%).

6. Methods used to tell whether food is safe to eat

Figure 6.1 Methods used to tell whether food is safe to eat (Waves 2 & 3)



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? Note: respondents were able to give multiple answers / only responses of ten per cent or more are shown; Responses were given spontaneously, with no prompted response list shown to respondents.
 Base: All Wales respondents - Wave 2 (104); Wave 3 (503) (Question not asked at Wave 1)

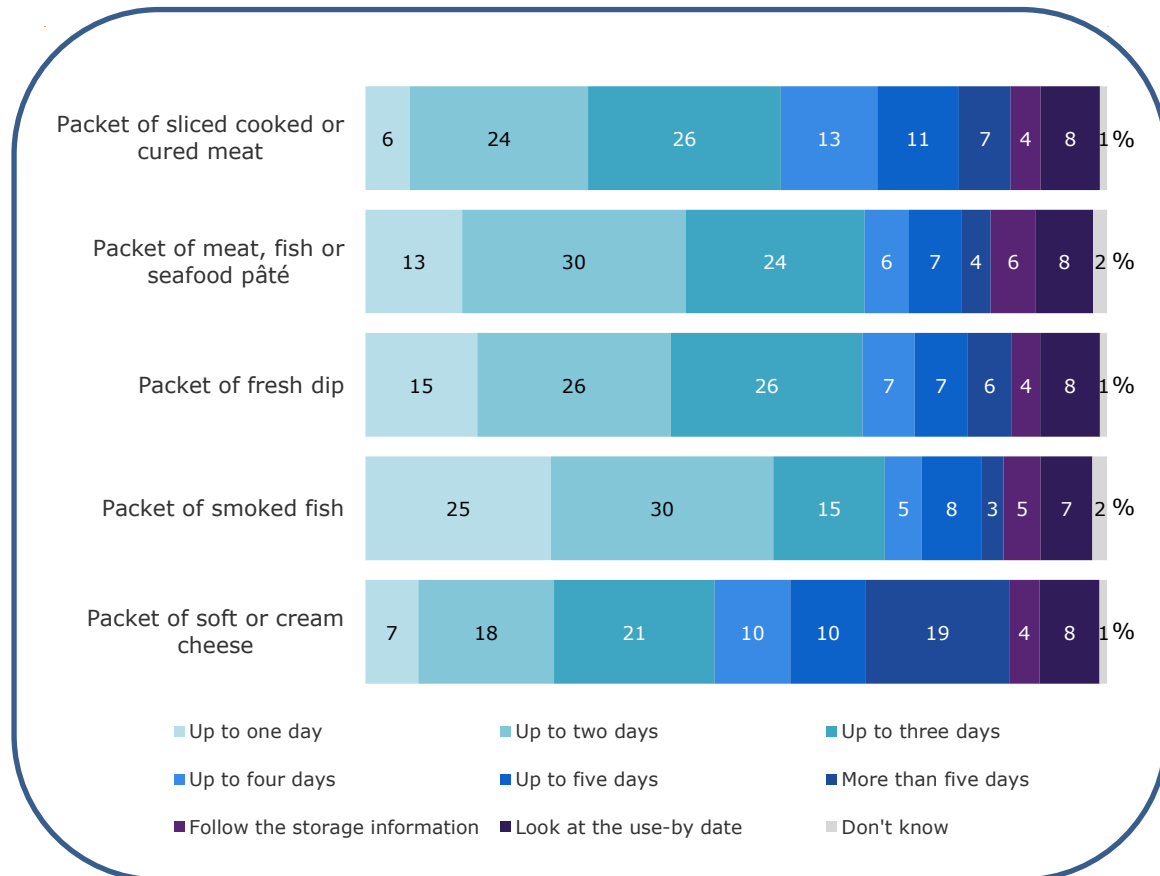
The FSA recommends that even if food looks and smells fine, the use by date is the best indicator of whether food is safe to eat¹⁵.

- 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 reported method for meat, fish, milk or yoghurt, and eggs.
- For example, around three-quarters (74%) of respondents reported that they used this method when checking whether milk or yoghurt was safe to eat, 63% used smell as an indicator for meat and 63% for fish (compared with 78% at Wave 2).
- How food looks (for example the appearance of mould) was the most common practice (reported by 61% of respondents) for telling whether cheese was safe to eat (compared with 76% at Wave 2), followed by how it smells (33% at Wave 3 compared with 52% at Wave 2). For meat, colour was the second most frequently reported method (reported by 42% of respondents compared with 58% at Wave 2).
- Use by dates were also mentioned as an indicator of whether food was safe; three in ten respondents (30%) reported that they used them for checking milk / yoghurt, around a quarter (26%) for eggs (compared with 39% at Wave 2), and around a quarter (24%) mentioned using use by dates as an indicator of whether meat was safe to eat (compared with 40% at Wave 2). One in five said they used use by dates for cheese (20%), compared with 34% at Wave 2. Around one in five (19%) said they used use by dates for fish.
- Nineteen per cent of respondents said that they checked whether eggs floated in water to tell whether they were safe to eat.
- For each food asked about, two per cent of respondents or less reported that they used food on the day it was bought or bought it fresh so that they knew it was safe to eat, with the highest proportion reporting this for eggs (two per cent).

¹⁵ It is worth noting that eggs and some dairy products have a best before date instead of a use by date.

6.1 Storage information

Figure 6.2 Maximum time respondents would eat / use food after opening it (Wave 3)



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 it?

Note: responses to Q4_23a were given spontaneously, with no prompted response list shown to respondents

Base: All Wales respondents, excluding those who do not eat / use each food item¹⁶ – Packet of sliced cooked or cured meat (445); Packet of meat, fish or seafood pâté (389); Packet of fresh dip (365); Packet of smoked fish (324); Packet of soft or cream cheese (390)

The FSA recommends storing opened foods in the fridge and using within two days, unless the manufacturer's instructions state otherwise.

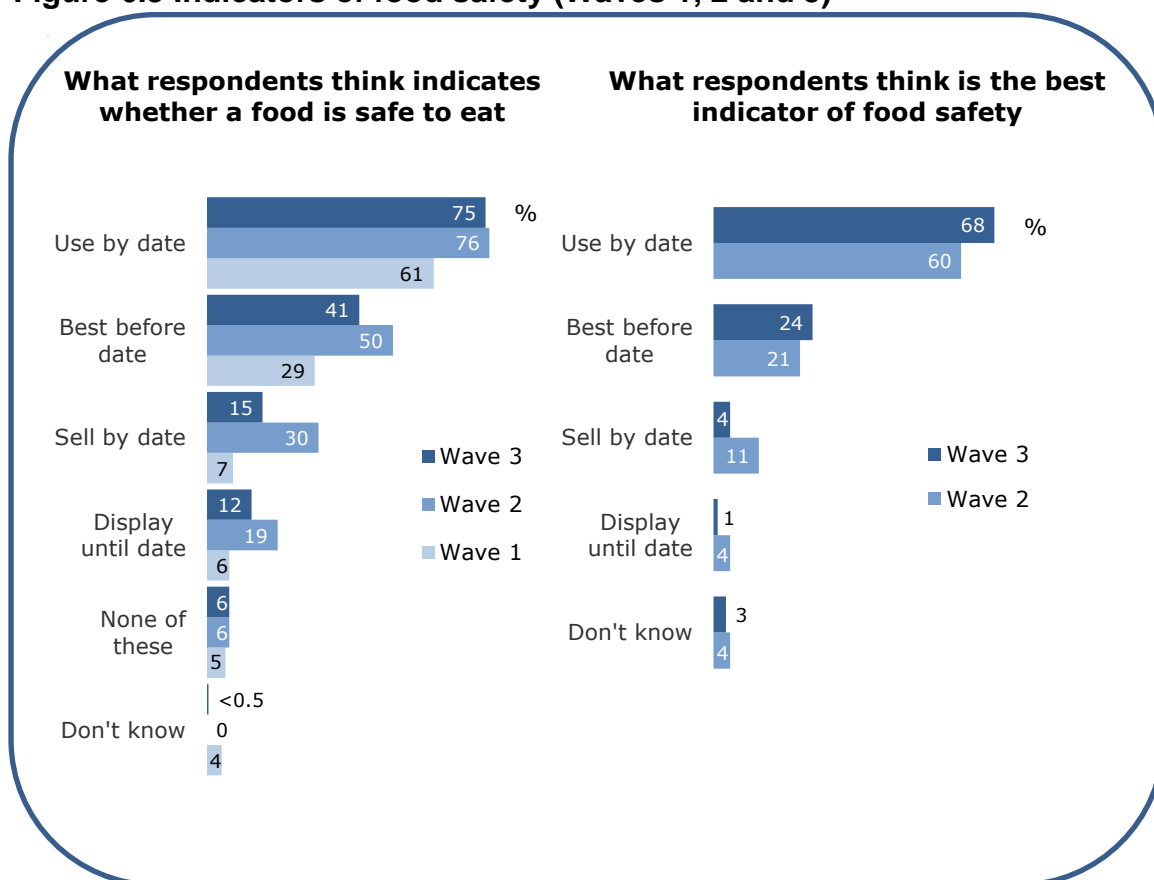
- Among those who reported eating specific foods, respondents were most likely to report that they consumed smoked fish (55%) within two days of opening.
- Respondents who reported eating these foods were least likely to report consuming soft cheese and sliced meat within two days of opening (reported by 25% and 30% respectively) and most likely to say they would eat them after more than two days (61% and 58% respectively).

¹⁶ All respondents were asked about all food items, but were given the option to state that they did not eat / use each. These respondents have been removed from the data reported here, so that it reflects only those reporting they actually use each item, making it easier to make comparisons across the different food types. Out of all respondents, 10% said they did not eat / use packets of sliced cooked or cured meat, 21% did not eat / use packets of meat, fish or seafood pâté, 22% did not eat / use packets of fresh dip, 34% did not use packets of smoked fish and 19% did not eat / use packets of soft or cream cheese.

- A minority of respondents reported that they would look at the use by date or follow the storage information on the product. Between seven and eight per cent of respondents who said they ate each product stated they would look at the use by date and between four and six per cent stated that they would follow storage information.
- The findings were largely similar to those seen at Wave 2, although some differences were identified. Respondents were more likely to say they checked the use by dates on smoked fish (seven per cent compared with one per cent), but less likely to say they would use it within one day (25% compared with 41%) and more likely to say that they would use it up to five days after opening it (eight per cent compared with one per cent).
- Respondents were more likely to say they would use a packet of fresh dip for up to three days after opening it (26% at Wave 3 compared with 14% at Wave 2).

6.2 Use by and best before dates

Figure 6.3 Indicators of food safety (Waves 1, 2 and 3)



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?

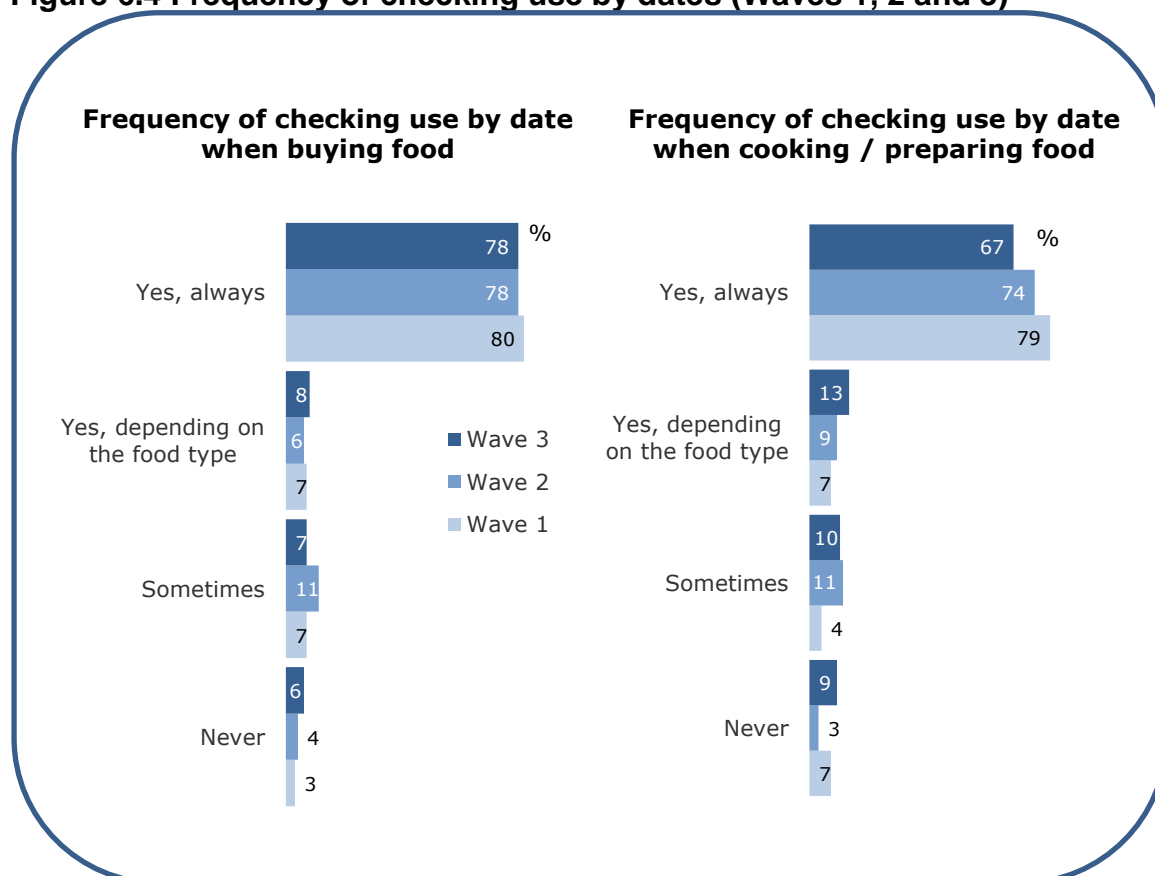
Note: respondents were able to give multiple answers at Q4_19

Base: Q4_19 All Wales respondents - Wave 1 (121); Wave 2 (104); Wave 3 (503) & Q4_19b All Wales respondents - Wave 2 (104); Wave 3 (503) (Q4_19b not asked at Wave 1)

The FSA recommends 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.

- Three quarters of respondents (75%) cited use by dates as an indicator of whether food was safe to eat, compared with 61% at Wave 1.
- However, the proportion of respondents who *only* mentioned the use by date (47%) was similar to that at Wave 1 (48%).
- Seven per cent of respondents mentioned all four options (use by, best before, sell by, display until dates) as indicators of whether food is safe to eat.
- Respondents were then asked which one of the four dates was the best indicator of food safety; 68% selected the use by date while 24% selected the best before date.

Figure 6.4 Frequency of checking use by dates (Waves 1, 2 and 3)

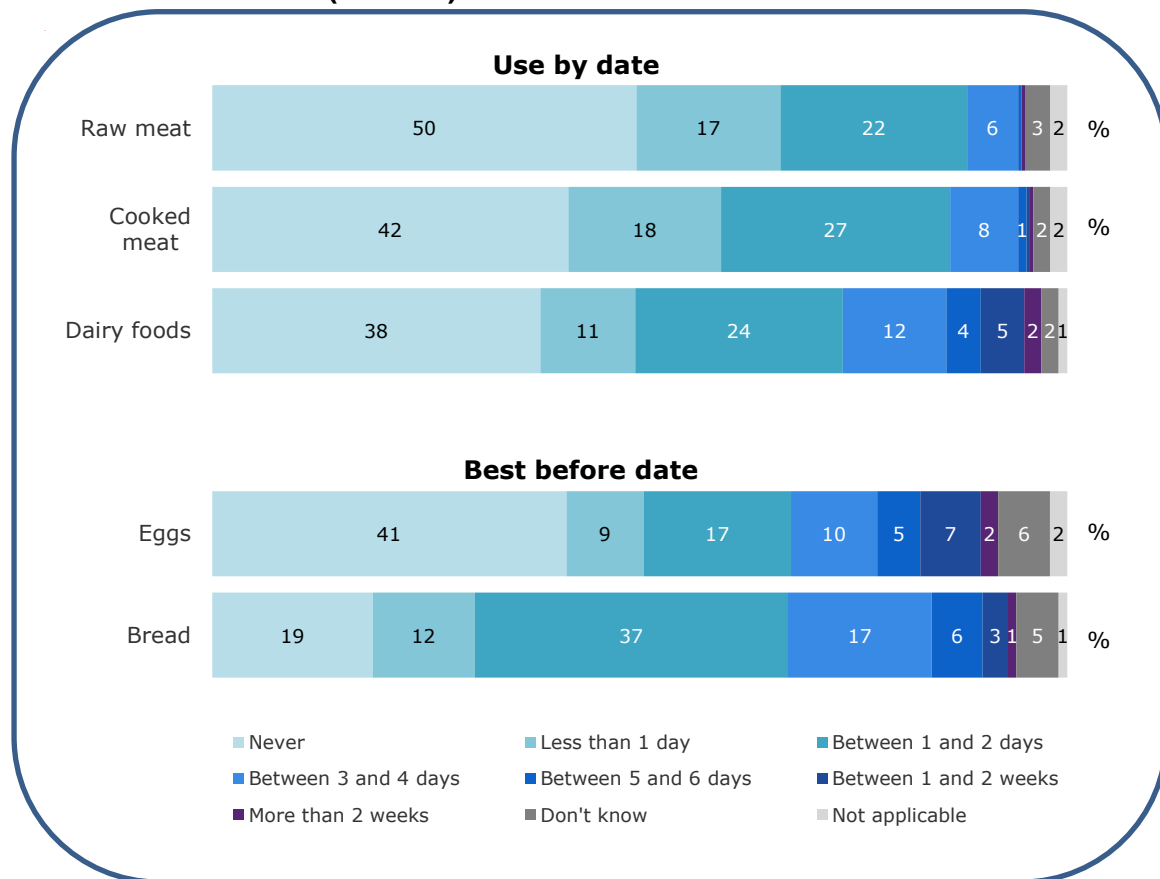


Source: Q4_21 Do you check use by dates when you are buying food? & Q4_22 Do you check use by dates when you are about to cook or prepare food?

Base: All Wales respondents - Wave 1 (121); Wave 2 (104); Wave 3 (503)

- When asked if they checked use by dates when buying food, 78% of respondents reported that they always did this regardless of food type and eight per cent reported that they checked use by dates when buying food depending on food type (both similar to the proportions reporting this at Waves 1 and 2).
- Six per cent of respondents at Wave 3 reported that they never checked use by dates when buying food, similar to the proportions at Waves 1 and 2.
- The proportion of respondents who reported checking use by dates when cooking or preparing food was lower than that for buying food, with 67% saying they always checked the date, compared with 79% at Wave 1. Thirteen per cent said it depended on food type.
- Nine per cent of respondents reported that they never checked the use by date when cooking or preparing food.
- Overall around six in ten respondents (63%) reported behaviours in line with FSA recommended practice for use by dates, stating that the use by date is an indicator of whether food is safe to eat, and that they checked the date when they were about to cook or prepare food.

Figure 6.5 Maximum time after use by date / best before date that respondents would eat / use food (Wave 3)



Source: Q11_6 What is the maximum time after the use by date / best before date that you would use / eat...?
 Note: responses to Q11_6 were given spontaneously, with no prompted response list shown to respondents
 Base: All Wales respondents (503)

The FSA recommends 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.¹⁷

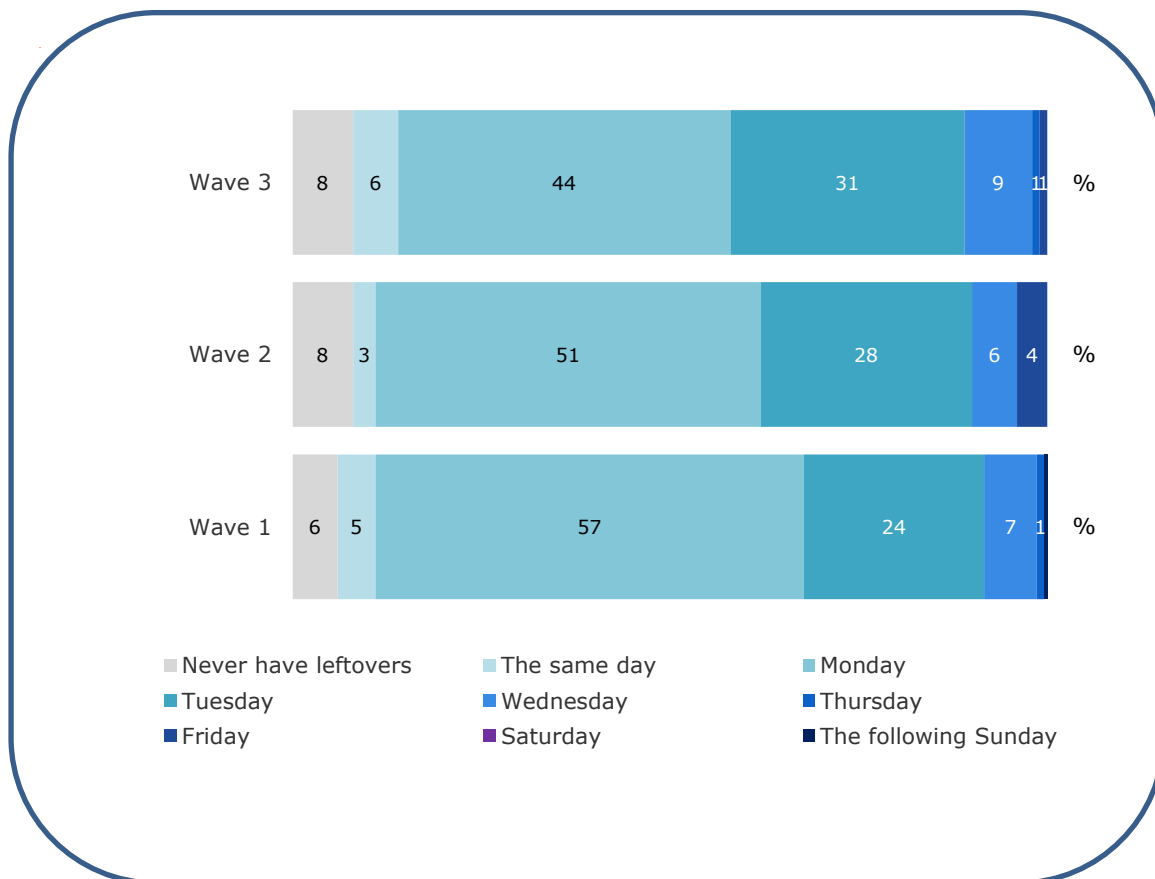
Best before dates appear on food with a longer shelf life. They show how long the food will be at its best quality. Using food after the best before date does not mean it will be unsafe, with the exception of eggs (raw egg must be consumed by the best before date although cooked egg, provided it is cooked thoroughly by the best before date, can be consumed a day or two after the best before date).

¹⁷ Although dairy foods were asked about with respect to 'use by' dates, current guidelines state that each dairy product should have a date mark which is appropriate for the specific product. Foods which are microbiologically highly perishable or likely to become an immediate danger to human health after a short period of time will have a use by date. Other products may have a best before date. Further detail of these guidelines can be found at the following link: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69316/pb132629-food-date-labelling-110915.pdf

- When asked about dairy foods, bread and eggs, respondents were more likely to report that they would eat them for longer after the recommended date, compared with raw and cooked meat. Around a quarter of respondents said they would eat dairy foods, bread and eggs three days or more after the best before date (23%, 27% and 25% respectively).
- Respondents were less likely to report that they would eat meat for longer after the recommended date, compared with the other foods asked about. For example, nine per cent of respondents reported that they would eat cooked meat three days or more after the use by date, while six per cent said they would use raw meat three days or more after the use by date.
- Some differences were observed compared with findings at Wave 2. At Wave 3 respondents were less likely to report never eating dairy foods after the use by date (38% compared with 53% at Wave 2) and more likely to report eating them between one and two weeks after the use by date (five per cent compared with one per cent at Wave 2). Respondents were also less likely to say they would never eat eggs after the best before date (41% compared with 58% at Wave 2) and more likely to say that they would eat them between one and two days after the best before date (17% compared with five per cent at Wave 2).

6.3 Maximum time for keeping leftovers

Figure 6.6 Last day respondents would consider eating leftovers from a meal (having cooked it on Sunday) (Waves 1, 2 and 3)



Source: Q4_24 If you made a meal on Sunday, what is the last day that you would consider eating the leftovers?

Note: responses to Q4_24 were given spontaneously, with no prompted response list shown to respondents

Base: All Wales respondents - Wave 1 (121); Wave 2 (104); Wave 3 (503)

The FSA recommends that leftovers should be used within two days (that is, up to Tuesday if cooked on Sunday).

- Around eight in ten respondents (81%) reported that, if they cooked a meal on Sunday, Tuesday would be the last day they would consider eating the leftovers, in line with recommended practice.
- Respondents most commonly reported that they would eat the leftovers by the next day (44%, compared with 57% at Wave 1), and 31% reported that they would consider eating them up to two days after cooking the meal.
- Around one in ten respondents (11%) reported that they would consider eating leftovers three days or more after cooking (i.e. Wednesday or after).

7. Variation in food safety practices ('4 Cs' and methods used to tell whether food is safe to eat) by different groups in the population¹⁸

Variation by gender, age and Welsh Index of Multiple Deprivation (WIMD) at Wave 3

- Reported food safety practices were found to vary considerably by **gender** with women being more likely than men to report food safety practices in line with practices recommended by the Agency for:
 - Always washing hands before preparing food (90% of women compared with 81% of men);
 - Storing certain foods in certain parts of the fridge (85% compared with 65%);
 - Always storing raw meat on the bottom shelf of the fridge (69% compared with 57%);
 - Never storing open tins in the fridge (77% compared with 66%);
 - Washing fruit (e.g. 55% of women reported always washing fruit to be eaten raw compared with 38% of men);
 - Usually defrosting meat or fish in the fridge (30% compared with 19%); and
 - Always cooking food until it is steaming hot throughout (93% compared with 79%).
- The main area where women were less likely than men to report practices that were in line with recommended practice was washing raw meat: women were more likely than men to report always washing raw meat or poultry excluding chicken (33% compared with 21%) or always washing chicken (43% compared with 33%).
- Variation by **age** was also observed. Older respondents were less likely to report some food safety practices in line with recommended practice, compared with younger age groups. For example:
 - Lower levels of hand washing (72% of those aged 75 and over reported always washing their hands before starting to cook or prepare food compared with 89% of those aged 35-74, and 84% of those aged 55 and over reported always washing their hands immediately after handling raw meat, poultry or fish compared with 92% of those aged 16-54);

¹⁸ The following variables were analysed to identify statistically significant differences: age, gender and Welsh Index of Multiple Deprivation.

- Fewer reporting *never* washing raw meat other than poultry (48% of those aged 16-54 compared with 36% of those aged 55 and over), raw chicken (43% of those aged 16-54 compared with 28% of those aged 55 and over) or raw fish / seafood (28% of those aged 16-54 compared with 18% of those aged 55 and over);
 - Fewer reporting behaviours in line with recommended practice for storing raw meat in the fridge (46% of those aged 65 and over who stored raw meat or poultry in the fridge compared with 64% of those aged 45-54 who stored raw meat or poultry in the fridge);
 - Lower levels of usually defrosting meat in the fridge (22% of those aged 35 and over compared with 43% of those aged 25-34);
 - Fewer saying their fridge temperature should be between 0°C and 5°C (36% of those aged 65 and over compared with 56% of 16-64 year olds); and
 - Fewer reporting behaviour in line with recommended practice for use by dates (56% of those aged 65 and over compared with 78% of 25-34 year olds).
- Younger respondents were less likely than older age groups to report some practices in line with recommended practice for food safety. For example:
- Less likely to report always washing fruit which is going to be eaten raw (42% of 16-64 year olds compared with 60% of those aged 65 and over);
 - More likely to report ever eating duck if it is pink or has pink or red juices (16% of 16-54 year olds compared with six per cent of those aged 55 and over);
 - Less likely to select use by dates as the best indicator of food safety (53% of 16-24 year olds compared with 78% of respondents aged 25-34);
 - Fewer reporting behaviours in line with recommended practice for chilling (six per cent of those aged 16-44 compared with 14% of those aged 45 and over); and
 - Fewer reporting behaviours in line with recommended practice for storing raw meat in the fridge (44% of those aged 16-34 who stored raw meat or poultry in the fridge compared with 64% of those aged 45-54 who stored raw meat or poultry in the fridge).
- Reported food safety practices also varied by **level of deprivation**. Respondents in more deprived areas were found to be less likely to report some food safety practices in line with recommended practice, compared with respondents in less deprived areas. For example:
- Respondents in the more deprived areas (quintiles one and two) were less likely than those in the least deprived areas (quintile five) to report never washing raw meat other than chicken (34% compared with 60%), and less likely than those in less deprived areas (quintiles three to five) to report never washing raw chicken (28% compared with 45%) and raw fish or seafood (19% compared with 29%); and

- Less likely to select use by dates as the best indicator of food safety (64% of respondents in the more deprived areas (quintiles one to three) compared with 84% of respondents in the least deprived areas (quintile five));
- Respondents in less deprived areas were also found to be less likely to report some food safety practices in line with recommended practice, compared with respondents in more deprived areas. For example:
 - More likely to report ever eating duck if it is pink or has pink or red juices (18% in quintiles three to five compared with seven per cent in quintiles one and two) and ever eating burgers or sausages if they are pink or have pink or red juices (16% in quintile five compared with four per cent in quintile one);
 - Less likely to usually defrost meat or fish in the fridge (17% in quintile two compared with 31% in quintile one); and
 - Less likely to store certain types of food in certain parts of the fridge (73% in quintiles two to five compared with 84% in quintile one).
- Respondents in less deprived areas were more likely to report ever eating red meat if it is pink or has pink or red juices (62% in quintile five compared with 33% in quintile one and 40% in quintile two).

8. Comparisons between Wales and the rest of the UK

Table 8.1 Food preparation behaviour - % who reported carrying out a food safety practice, by country (Wave 3)

| % reporting that they always ... | Wales | England | Scotland | Northern Ireland |
|---|-------------------|------------------|---------------------|------------------|
| Wash hands immediately after handling raw meat, poultry or fish | 89% ^{NI} | 86% | 85% | 83% |
| Wash hands before starting to prepare or cook food | 86% | 84% | 82% | 81% |
| Cook food until it is steaming hot throughout | 86% ^{NI} | 82% | 88% ^{E NI} | 78% |
| Wash vegetables (including salad) which are going to be eaten raw | 66% | 67% | 70% | 66% |
| Wash vegetables which are going to be cooked | 60% | 61% | 62% | 64% |
| Wash fruit which is going to be eaten raw | 47% | 54% ^W | 56% ^W | 50% |
| Use different chopping boards for different foods | 49% | 49% | 51% | 46% |
| Wash fruit which is going to be cooked | 36% | 42% | 38% | 39% |
| <i>Base</i> | <i>(503)</i> | <i>(1,951)</i> | <i>(475)</i> | <i>(524)</i> |

Source: Q4_1 Thinking about when you are storing, preparing and cooking food, I would like you to tell me whether you do or don't do the following things at all when you are in the kitchen and if so how frequently.

Base: All respondents

NB. E / W / S / NI indicates that the result is statistically significantly higher than the result for the country indicated by the initial

- Respondents living in Wales were more likely than those in Northern Ireland to report that they always wash their hands immediately after handling raw meat, poultry or fish (89% compared with 83% respectively) and that they always cook food until it is steaming hot (86% compared with 78%).
- They were less likely to report always washing fruit which is going to be eaten raw (47%) compared with respondents living in England (54%) and Scotland (56%).

Table 8.2 Food preparation behaviour - % who reported carrying out a food safety practice, by country (Wave 3)

| % reporting that they never ... | Wales | England | Scotland | Northern Ireland |
|--|--------------|------------------|--------------------|----------------------|
| Eat chicken or turkey if the meat is pink or has pink or red juices | 87% | 92% ^W | 92% ^W | 93% ^W |
| Eat burgers or sausages if the meat is pink or has pink or red juices | 80% | 80% | 84% | 90% ^{E W S} |
| Eat whole cuts of pork or pork chops if the meat is pink or has pink or red juices | 77% | 77% | 78% | 86% ^{E W S} |
| Eat red meat (e.g. beef or lamb, steak or roast meat, but not mince) if it is pink or has pink or red juices | 48% | 46% | 54% ^E | 60% ^{E W} |
| Eat duck if the meat is pink or has pink or red juices | 43% | 43% | 42% | 57% ^{E W S} |
| Store open tins in the fridge | 71% | 70% | 79% ^{E W} | 78% ^E |
| Wash raw meat or poultry other than chicken | 44% | 40% | 52% ^{E W} | 50% ^E |
| Wash raw chicken | 37% | 35% | 38% | 45% ^E |
| Wash raw fish or seafood | 24% | 21% | 25% | 30% ^E |
| <i>Base</i> | <i>(503)</i> | <i>(1,951)</i> | <i>(475)</i> | <i>(524)</i> |

Source: Q4_1 Thinking about when you are storing, preparing and cooking food, I would like you to tell me whether you do or don't do the following things at all when you are in the kitchen and if so how frequently.

Base: All respondents

NB. E / W / S / NI indicates that the result is statistically significantly higher than the result for the country indicated by the initial

- Respondents living in Wales were less likely to report that they never ate chicken or turkey that was pink or had pink or red juices (87%) compared with those living in England (92%), Scotland (92%) and Northern Ireland (93%).
- They were less likely to report never eating burgers or sausages (80%), pork (77%), red meat (48%) or duck (43%) that was pink or had pink or red juices, compared with respondents in Northern Ireland (90%, 86%, 60% and 57% respectively).
- Respondents living in Wales were less likely than those in Scotland to report that they never stored open tins in the fridge (71% compared with 79%) and that they never washed raw meat or poultry other than chicken (44% compared with 52%).

Table 8.3 Checking fridge temperature, by country (Wave 3)

| Whether fridge temperature is checked by respondent | Wales | England | Scotland | Northern Ireland |
|--|--------------|--------------------|-------------------|------------------|
| No | 52% | 47% | 45% | 53% |
| Yes | 41% | 41% | 44% | 39% |
| Someone else in the household does | 5% | 9% ^{W NI} | 9% | 5% |
| Combined - Yes | 46% | 50% | 53% ^{NI} | 44% |
| I don't need to – it has an alarm if it is too hot or cold | 2% | 3% | 3% | 3% |
| <i>Base</i> | <i>(496)</i> | <i>(1,937)</i> | <i>(469)</i> | <i>(518)</i> |

Source: Q4_9 Do you ever check your fridge temperature?

Base: All respondents with a fridge in the household

NB. E / W / S / NI indicates that the result is statistically significantly higher than the result for the country indicated by the initial

- Respondents living in Wales were no less likely than those living in other countries to report that they checked their fridge temperature, but were less likely to report that someone else in their household checked the fridge temperature (five per cent) compared with respondents living in England (nine per cent).
- When asked what the fridge temperature should be, respondents living in Wales with a fridge in their household were less likely to say that the fridge temperature should be between 0°C and 5°C (52%) compared with those living in Northern Ireland (62%). Respondents living in Wales with a fridge in their household were also more likely to report that they just stored food in the fridge wherever it fits (23% compared with 17% in Northern Ireland).
- No statistically significant differences were observed by country in whether respondents stored raw meat in their fridge in line with recommended practice for avoiding cross contamination.

Table 8.4 Other food safety practices reported, by country (Wave 3)

| % reporting ... | Wales | England | Scotland | Northern Ireland |
|---|------------------|---------------------|-------------------|----------------------|
| Behaviour in line with recommended practice for use by dates [§] | 63% | 60% | 64% | 72% ^{E W S} |
| Reheat food no more than once | 94% ^E | 90% | 93% | 93% |
| Generally defrost meat and fish in the fridge | 25% | 31% ^{W NI} | 31% ^{NI} | 22% |
| <i>Base</i> | <i>(503)</i> | <i>(1,951)</i> | <i>(475)</i> | <i>(524)</i> |

Source: Q4_19/Q4_22 Whether recommended practice (RP) followed for use by dates; Q4_25 How many times would you consider re-heating food after it was cooked for the first time?; Q4_1c Which method do you generally use to defrost frozen meat or fish?

Note: [§]Aware that use by date is an indicator of whether food is safe to eat, and always check use by date before cook and prepare food

Base: All respondents

NB. E / W / S / NI indicates that the result is statistically significantly higher than the result for the country indicated by the initial

- Respondents living in Wales were less likely to report behaviours in line with recommended practice for use by dates (being aware that the use by date is indicator of whether food is safe to eat, and always checking the use by date before cooking and preparing food) compared with those living in Northern Ireland (63% compared with 72%).
- Respondents in Wales were more likely than those in England to report reheating food once at most (94% compared with 90%) and less likely to report that they generally defrosted meat and fish in the fridge (25% compared with 31%).