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Engagement with labelling: informing the Calorie Wise scheme

Prepared for: Food Standards Agency

**Food and You
Waves 1-4
Briefing paper 3
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Summary

- The Food Standards Agency is working in Northern Ireland with the local food industry to encourage the display of calories on menus. The vision of this work is to help people in Northern Ireland make healthier choices when they eat out. The 'Calorie Wise' scheme was first trialled in 2012, and evaluated in 2013 by the Policy Studies Institute¹. The FSA are planning to launch new consumer messaging to raise public awareness of the scheme in Northern Ireland.

Knowledge of and attitudes towards calorie recommendations

- 80% of people believed it is important to eat within calorie recommendations.
- Most people did not correctly report the number of calories which men and women should eat each day. Around a third of people underestimated recommended calorie intake for men and women, 10% overestimated recommended calorie take for men and 5% overestimated recommended calorie intake for women. 30% said they did not know how many calories men or women should eat, indicating that provision of information about calorie intake might be beneficial for some people.
- People were less likely to know the correct calorie intake for men than for women.
- Older people (aged over 55) were less likely than younger people (aged under 35) to know recommended calorie intake for either men or women.

Views on the display of nutritional information in food outlets

- Because 95% of people in Northern Ireland eat out at least occasionally, consumer messaging about the Calorie Wise scheme should be accessible and clear for all groups. Fast food and takeaway outlets are used more frequently by younger people, suggesting that information at these outlets could be more effective if tailored to a younger demographic. This might be achieved by displaying information in a way that is particularly appealing to younger people or taking advantage of their greater knowledge of energy intake and the fact that they do not tend to struggle with less prominent labelling to provide further nutritional information.
- 78% of people want more nutritional information on display in food outlets: this is a strong endorsement for the Calorie Wise scheme. The desire for nutritional information extended to takeaway outlets, as well as eat-in venues such as restaurants and cafes. Although people expressed an interest in the provision of calorie information at food outlets this does not necessarily mean that they would use the information if it was provided and, as other research has shown, there are many factors that will influence actual use of food labelling information when making a decision².

¹ Ray, K. et al. (2013) Evaluation of Caloriewise: A Northern Ireland Pilot of the Display of Calorie Information in Food Catering Businesses. *Policy Studies Institute* <https://www.food.gov.uk/northern-ireland/researchni/fs307001>.

² Grunert, K.G. and Wills, J.M. (2007) A review of European research on consumer response to nutrition information on food labels. *Journal of Public Health*. 15(5): 385-399.

- One in ten people said that provision of nutritional information in a venue increased the likelihood that they would choose to eat there.

Use of labels and nutritional information

- 41% of people living in the lowest income households find food labelling easy to read. Therefore we suggest that calorie information should be displayed clearly and prominently using simple terms in order to prevent exacerbating existing inequalities in food label use.
- Two-thirds of people do not always trust nutritional information presented on food and menus. Distrust was highest in people living in low income households. For the Calorie Wise scheme to be a success, and for it to not exacerbate inequalities in health and nutrition, information must appear authoritative and independent. This is confirmed by earlier research in Northern Ireland^{3,4}.
- People report using labels and presented information: people say that they check use-by dates when shopping (85%) and cooking (77%). Consumer decision-making is complex, but this expressed interest and the correlation between use of food labels and menu labelling⁵ suggests that there is potential to enhance the use of Calorie Wise when eating out.

³ Ray, K. et al. (2013) Evaluation of Caloriewise: A Northern Ireland Pilot of the Display of Calorie Information in Food Catering Businesses. *Policy Studies Institute* <https://www.food.gov.uk/northern-ireland/researchni/fs307001>

⁴ TNS BMRB Research (2016) Understanding NI Consumer Needs Around Food Labelling. Food Standards Agency in Northern Ireland. <https://www.food.gov.uk/northern-ireland/researchni/understanding-ni-consumer-needs-around-food-labelling>

⁵ Roseman, M.G et al (2013) Relationships among grocery nutrition label users and consumers' attitudes and behavior toward restaurant menu labelling. *Appetite* 71: 274-278.

Introduction

The Food Standards Agency delivers policies in Northern Ireland designed to improve people's diet by ensuring healthier food choices are easier for everyone to make. Through collaboration across government and industry, the Agency aims to increase the availability of healthier mainstream food products and empower consumers with the information they need to access a healthy diet.

That is why the Agency is working with the local food industry to encourage the display of calories on menus. The vision of this work is to help people in Northern Ireland make healthier choices when they eat out. The 'Calorie Wise' scheme was first trialled in 2012, and evaluated in 2013 by the Policy Studies Institute⁶. The FSA are planning to launch new consumer messaging to raise public awareness of the scheme.

In recent years chronic, non-communicable diseases have been on the rise in developed countries. In Northern Ireland, people are eating too much saturated fat, sugar and salt, and not enough fibre, oily fish and fruit and vegetables^{7,8}. Diet and nutrition are risk factors in many chronic diseases such as obesity. It is the excess consumption of calories, whether they come from sugar or fat, which ultimately leads to obesity.

The purpose of this paper is to present the results of secondary analyses of the most recent Food and You survey (Wave 4) to inform the development of the Calorie Wise scheme and targeting of the associated consumer messaging. Although the Food and You survey did not include questions specifically about the Calorie Wise scheme, the survey data does ask about:

- Reported frequency and location of meals outside the home
- Preference for information on calorie content when eating out
- Reported importance of calories for a healthy lifestyle

⁶ Ray, K. et al. (2013) Evaluation of Caloriewise: A Northern Ireland Pilot of the Display of Calorie Information in Food Catering Businesses. *Policy Studies Institute* <https://www.food.gov.uk/northern-ireland/researchni/fs307001>

⁷ Food Standards Agency (2017) National Diet and Nutrition Survey: Results from Years 1-4 (Combined) for Northern Ireland. <https://www.food.gov.uk/sites/default/files/ndnsfullreport.pdf>

⁸ <https://www.kantarworldpanel.com/global>

These questions can be used to provide a range of insights useful to the development, design and rollout of the scheme and associated messaging:

- 1) **Knowledge** - Do people know enough about recommended daily calorie consumption to be able to make use of presented energy information?

This is an important question because for calorie labelling on menus to be effective there are two implicit assumptions or conditions that need to be met⁹:

- a. that consumers know how many calories they should be consuming on a daily basis;
- b. that they incorrectly estimate the number of calories in foods bought in restaurants and other food outlets. For the Calorie Wise scheme to have the greatest effect, it needs to reach the people who currently go to food outlets, and include those who tend not to engage with presented information (either because they can't, they won't, or they don't).

- 2) **Reaching the people who eat out** - what proportion of people regularly eat out, where do they eat, and what role does presented information play in where they choose to eat?
- 3) **Accessibility of food information** - which people do not currently engage with presented information because they practically are unable to, for example due to small print?

- 4) **Increasing consumer trust in food information** - which people do not engage with presented information because they do not trust it?

- 5) **Encouraging engagement with food information in practice** - which people tend not to engage with presented information, for example due to lack of interest or time?

This paper also explores whether the use of labels and presented food information in one context may be an indicator of use of labels and presented information in other contexts, for instance when shopping. So while not directly related to point of choice display of calorie content in food outlets, profiling based on this indicator could be informative for targeting the Calorie Wise scheme and consumer messaging.

Exploring knowledge and attitudes towards energy consumption and label use behaviour by analysing existing Food and You data is a cost effective way of ensuring that the Calorie Wise scheme reaches the right people, with the right information, in the right way.

⁹ Elbel, B. (2011). Consumer estimation of recommended and actual calories at fast food restaurants. *Obesity*. 19: 1971-1978.

Previous research on food labelling

European Union law stipulates that a wide range of information must be provided on pre-packaged foods. This includes the name of the food, ingredient and allergen information, country of origin, as well as energy and nutrient content.

Reflecting this and the growing emphasis on food labelling as a means to promote dietary change, there is now a substantial body of research that has examined the use of food/nutrient labelling on pre-packaged foods and particularly back-of-pack (BoP) and front-of-pack (FoP) nutrition labels. Other studies have found a correlation between the use of labels on pre-packaged foods and calorie labels on menus¹⁰, this literature can provide some useful insights into who uses calorie labelling and what factors may influence this.

Since the introduction of energy/calorie labelling on menus in New York City in 2008, and its subsequent incorporation into federal law in 2010¹¹, there have also been many studies conducted in North America that have examined the implementation and impact of calorie labelling and the factors affecting these. Reviews of nutrition label usage generally show that there are broadly consistent patterns in use with higher usage among:

- Women, especially those of higher socio-economic status;

- Those seeking to lose weight;
- Parents of young children;
- Those with a particular health concern (such as hypertension or diabetes).

Men, especially younger men, and those who are over-weight are generally less likely to use nutrition labelling^{12,13,14}.

A baseline study¹⁵ was jointly commissioned by DEFRA and the FSA in 2014 to examine consumer understandings of food label information in the UK and any changes in purchasing decisions following the first wave of implementing the EU FIC regulations of 2011. This showed some regional differences:

- In Northern Ireland people reported lower levels of confidence in Country of Origin Labelling (CoOL) than people living in other UK countries (Wales, Scotland, England);
- Awareness of Front-of-Pack fat and calorie labelling was highest in Northern Ireland and Wales;

¹⁰ Roseman, M.G. et al (2013). Relationships among grocery nutrition label users and consumers' attitudes and behavior toward restaurant menu labelling. *Appetite* 71: 274-278.

¹¹ This was part of the Patient Protection and Affordable Care Act of 2010 (Affordable Care Act or ACA), which made calorie labeling mandatory for all restaurant chains and other retail food establishments that are part of a chain with 20 or more locations. See: <https://www.federalregister.gov/documents/2014/12/01/2014-27833/fod-labeling-nutrition-labeling-of-standard-menu-items-in-restaurants-and-similar-retail-food>.

¹² Grunert, K.G. and Wills, J.M. (2007) A review of European research on consumer response to nutrition information on food labels. *Journal of Public Health*. 15(5): 385-399.

¹³ Cowburn, G. and Stockley, L. (2005) Consumer understanding and use of nutrition labelling: a systematic review. *Public Health Nutrition* 8(1): 21-28.

¹⁴ Campos, S. et al. (2011) Nutrition labels on pre-packaged foods: a systematic review. *Public Health Nutrition* 14(8): 1496-1506.

¹⁵ Anthesis Consulting Group (2014) Baseline Evaluation of EU Food Information for Consumers (FIC) Labelling: Final Report. Prepared for the Food Policy Unit, DEFRA, London.

- Despite this, respondents in Northern Ireland reported the lowest level of increases in additional confidence and understanding of all regions, and also reported the lowest levels of usage of health or nutritional information on labels.

These findings suggest that there is particular potential to increase label usage among consumers in Northern Ireland, and that particular population groups may need to be targeted. A later study¹⁶ examining the specific needs of consumers in Northern Ireland found that people expressed an interest in an expanded provision of labelling information, but that for some people there were issues with interpreting the information with a need for simplicity and consistency. The trustworthiness of labelling information was also a concern for consumers and this was seen to be enhanced by official endorsement.

In terms of impact, a meta-analysis found that using nutrition labels was associated with a healthier food and calorie intake, although the latter was not statistically significant¹⁷. There have now been a number of studies of the impact of calorie labelling in eating out establishments (mainly conducted in the US, but also some from Canada and Australia) and recent reviews of these show that there is some impact on consumer choices, but this is mostly small and variable to date^{18,19,20,21,22,23,24}. Sources of variance in both use and impact were by the type of outlet, age, gender and socio-economic status in a pattern similar to that seen for the usage of food/nutrition labels generally. This endorses the importance of examining the Food and You data to identify who is currently using food labelling and importantly who is not and the factors that may influence this in order to promote engagement with Calorie Wise in Northern Ireland.

¹⁶ TNS BMRB Research (2016) Understanding NI Consumer Needs Around Food Labelling. Food Standards Agency in Northern Ireland. <https://www.food.gov.uk/northern-ireland/researchni/understanding-ni-consumer-needs-around-food-labelling>.

¹⁷ Cecchini, M. and Warin, L. (2016) Impact of food labelling systems on food choices and eating behaviours: a systematic review and meta-analysis of randomized studies. *Obesity Reviews* 17(3): 201-10.

¹⁸ Van Epps, E.M. et al. (2016) Restaurant Menu Labelling Policy: Review of Evidence and Controversies. *Current Obesity Reports* 5(1): 72-80.

¹⁹ Sarink, D. et al. (2016) The impact of menu energy labelling across socioeconomic groups: A systematic review. *Appetite* 1(99): 59-75.

²⁰ Long, M.W. et al. (2015) Systematic review and meta-analysis of the impact of restaurant menu calorie labelling. *American Journal of Public Health* 105(5): e11-e24.

²¹ Kiszko, K.M. et al. (2014) The influence of calorie labelling on food orders and consumption: A review of the literature. *Journal of Community Health* 39(6): 1248-1269.

²² Sinclair, S.E. et al. (2014) The Influence of Menu Labelling on Calories Selected or Consumed: A Systematic Review and Meta-Analysis. *Journal of the Academy of Nutrition and Dietetics* 114(9): 1375-1388.

²³ Swartz, J.J. et al. (2011) Calorie menu labelling on quick-service restaurant menus: an updated systematic review of the literature. *International Journal of Behavioral Nutrition and Physical Activity* 8:135-143.

²⁴ Sarink D. et al. (2016) The impact of menu energy labelling across socioeconomic groups: A systematic review. *Appetite* 1(99): 59-75.

About the data and analysis

This briefing is the third in a series of five based on secondary data analysis of the most recent wave, wave 4, of the FSA's Food and You survey. This briefing aims to use data from the Food and You survey to inform the planning and implementation of the Calorie Wise scheme in Northern Ireland.

Food and You is a biennial, random probability, cross-sectional survey of adults living in private households in the UK. The first three survey waves, conducted in 2010, 2012 and 2014, covered England, Scotland, Wales and Northern Ireland. The fourth wave was carried out in 2016 and covered England, Wales and Northern Ireland.

The survey includes a range of questions about reported behaviour, attitudes and knowledge relating to food along with demographic and socio-economic variables and other household information. Some of these questions are directly related to calories:

- Knowledge of daily calories needed by men and women
- Preference for information on calorie content when eating out
- Rated importance of calories for a healthy lifestyle.

The Wave 4 survey also includes more general questions on reasons for not engaging with food labels and presented food information, including:

- Ease of reading labels (e.g. print size)
- Trust in the information presented on labels or menus
- Propensity to check presented information in practice, specifically use-by dates.

These are reported by demographic factors (e.g. age, sex, and country of residence); socioeconomics (e.g. household income and employment status); and attitudinal and behavioural factors (e.g. frequency of eating out, shopping, and cooking).

In 2010, during wave 1 of the survey, responsibility for nutrition policy in England and Wales was transferred from FSA to the Department of Health. Since wave 2 questions in the Healthy Eating module have not been asked in England or Wales. Where these questions have been included in the analysis this has been indicated in the base description. Consequently, base sizes for some questions are too small to allow for subgroup analyses. For example, we have not been able to explore the characteristics of those who eat out, have low calorie knowledge, and tend to not engage with presented food information.

Data for analysis has been weighted to correct for lower probability of selecting adults in multi-adult homes and to correct for over-representation of Wales and Northern Ireland relative to England. The data is also weighted to match the distribution of working status, gender, age and region in each country²⁵.

All tables are presented in the appendix.

²⁵ For further details about the survey methodology, including the weighting please see The Food & You Survey Wave 4 Technical Report: <https://www.food.gov.uk/sites/default/files/food-and-you-w4-tech-report.pdf>

Knowledge of and attitudes towards calorie recommendations

Key findings

- 80% believed it is important to eat within calorie recommendations.
- Most people did not correctly report the number of calories which men and women should eat each day. Around a third of people underestimated recommended calorie intake for men and women, 10% underestimated recommended calorie intake for men and 5% underestimated recommended calorie intake for women.
- 30% said they did not know how many calories men or women should eat, indicating that provision of information about calorie intake might be beneficial for some people.
- Participants were less likely to know the correct calorie intake for men than for women.
- Almost half of 16 to 34 year olds correctly reported calorie intake for men and women (45% and 47% respectively), decreasing to 26% and 28% respectively of 35 to 54 year olds and 11% and 13% respectively of people aged 55 or older.

Overweight and obesity increase the risk of developing many chronic diseases, including diabetes, cardiovascular disorders, musculoskeletal disorders and some cancers (including cancers of the liver, kidney, breast and large intestine)²⁶. The prevalence of overweight and obesity in the Northern Ireland population is a concern. 60% of adults in Northern Ireland are overweight or obese, a figure which has remained fairly constant since 2005/06. Of more concern is the prevalence of childhood obesity, approximately 25% of children aged 2 to 15 years are overweight or obese²⁷.

As overweight and obesity are caused by consuming more calories each day than are used in daily activity and basal metabolism, we can conclude that a high proportion of the population regularly consume more calories than they need. Data from the Food and You survey shows that most people say it is important to eat the right number of calories each day (see Table 1). This indicates that many people who eat too many calories do so, despite believing that it is important to consume the right number.

80% of people in Northern Ireland said that it is important to eat the right number of calories each day. Despite saying that it is important to eat the right number of calories each day, the majority of people did not correctly report how many calories men or women should eat. When asked how much women should eat, 29% of those surveyed said 2,000kcal per day, 36% underestimated and 5% overestimated with 30% saying they did not know. A quarter (26%) correctly reported that men should aim to eat 2,500kcal while a third

²⁶ Prospective Studies Collaboration (2009) Body-mass index and cause-specific mortality in 900,000 adults: collaborative analyses of 57 prospective studies. *Lancet* 28(373):1083-96. [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(09\)60318-4/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(09)60318-4/fulltext)

²⁷ Scarlett, M. and Denvir, J. (2016) Health Survey (NI): First Results 2015/16. *Department of Health*. Belfast. <https://www.health-ni.gov.uk/sites/default/files/publications/health/hsni-first-results-15-16.pdf>

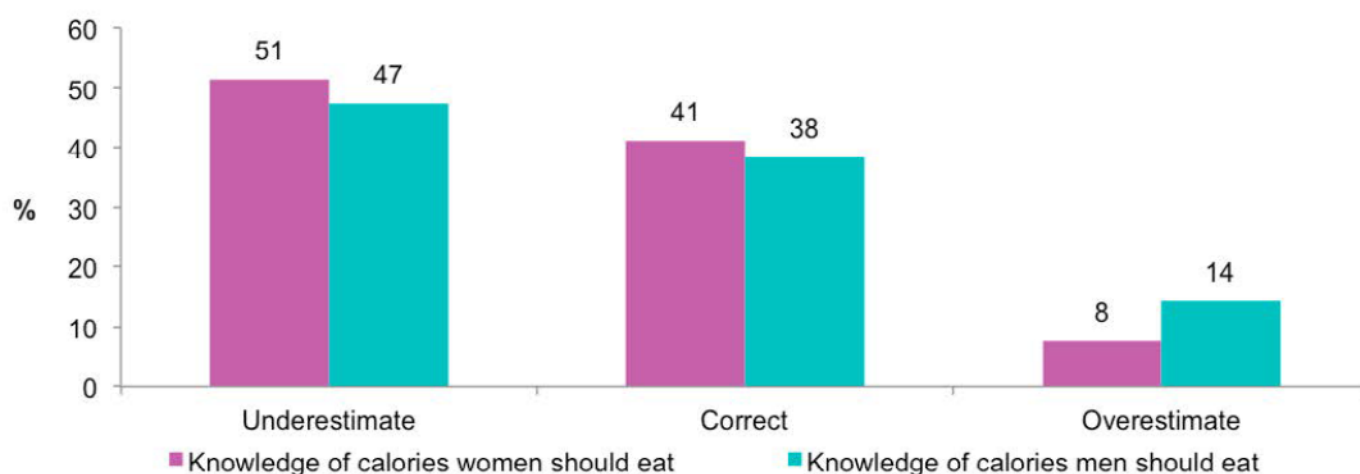
(33%) of people underestimated and 10% overestimated men's recommended calorie intake. 31% said they did not know how many calories men should eat. This indicates that some people may overeat due to a lack of knowledge about recommended calorie intake (Tables 2 and 3).

The proportion of people who were aware of the precise recommended calorie intakes decreased with age. Almost half of 16 to 34 year olds correctly reported calorie intake for men and women (45% and 47% respectively), decreasing to 26% and 28% respectively of 35 to 54 year olds and 11% and 13% respectively of people aged 55 or older (Tables 2 and 3).

People with no qualifications were less likely to know how many calories men (14%) or women (15%) should eat than people with a degree or A levels (30% and 33% respectively) (Tables 4 and 5).

Across Northern Ireland, England and Wales, those who incorrectly reported daily calorie intakes were slightly less likely (86%) than those with better knowledge about calorie intake (94%) to eat out at least once a month. There was no difference in the levels of knowledge about calorie consumption according to participant's reference to use-by dates when shopping or cooking (Tables 6 and 7).

Figure 1 Knowledge of recommended calorie intake



Base: Respondents from Northern Ireland

Appendix Tables 6 and 7

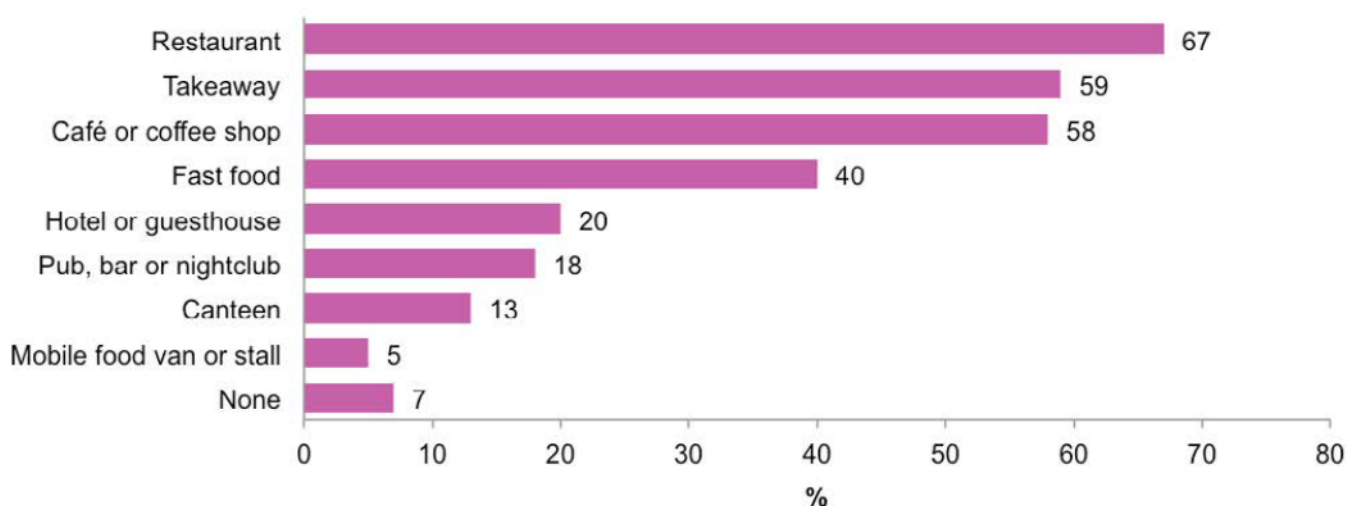
Views on the display of nutritional information in food outlets

- Because 95% of people in Northern Ireland eat out at least occasionally, consumer messaging about the Calorie Wise scheme should be accessible and clear for all groups. Fast food and takeaway outlets are used more frequently by younger groups, suggesting that information at these outlets could be more effective if tailored to a younger demographic.
- 78% of participants want more nutritional information on display in food outlets: this is a strong endorsement for Calorie Wise. The desire for nutritional information extended to takeaway outlets, as well as eat-in venues such as restaurants and cafes.
- For one in ten people, provision of nutritional information in a venue increased the likelihood that they would choose to eat there.

Eating out of the home was more common in Northern Ireland than either England or Wales. Half (52%) of people in Northern Ireland say they eat out at least once a week compared with 44% of people in England and 39% of people in Wales. 34% of people in Northern Ireland say they eat out less than once a week but more than once a month, 9% eat out less than once a month, and only 5% said they never eat out (Table 9).

In Northern Ireland, restaurants were the most popular place to eat out (67% reported eating at a restaurant within the last month) followed by takeaway outlets (59%) and cafes and coffee shops (58%). Mobile food vans and stalls had been used by only 5% of the population surveyed in the past month (**Figure 2**) (Table 10).

Figure 2 Eating at food outlets in past month



People over the age of 55 were less likely to say they had eaten out in the past month than younger people. They were also less likely than younger groups to eat takeaways or fast food or to eat in cafes or canteens or from food vans (Table 10).

People who had retired were less likely to say that they had eaten out in the past month (83%) than people who were in work (96%). They were also less likely to say that they had eaten a takeaway (21% compared to 69% of people in work) and less likely (18%) than people in work (49%) to have eaten fast food (Table 11).

The proportion of people in Northern Ireland who report eating in restaurants and cafes in the past month increases with income. Overall, 22% of people in the lowest income group said that they had not eaten out in the past month. Those in higher income groups were much less likely (3% -8%) to say that they had not eaten out (Table 12).

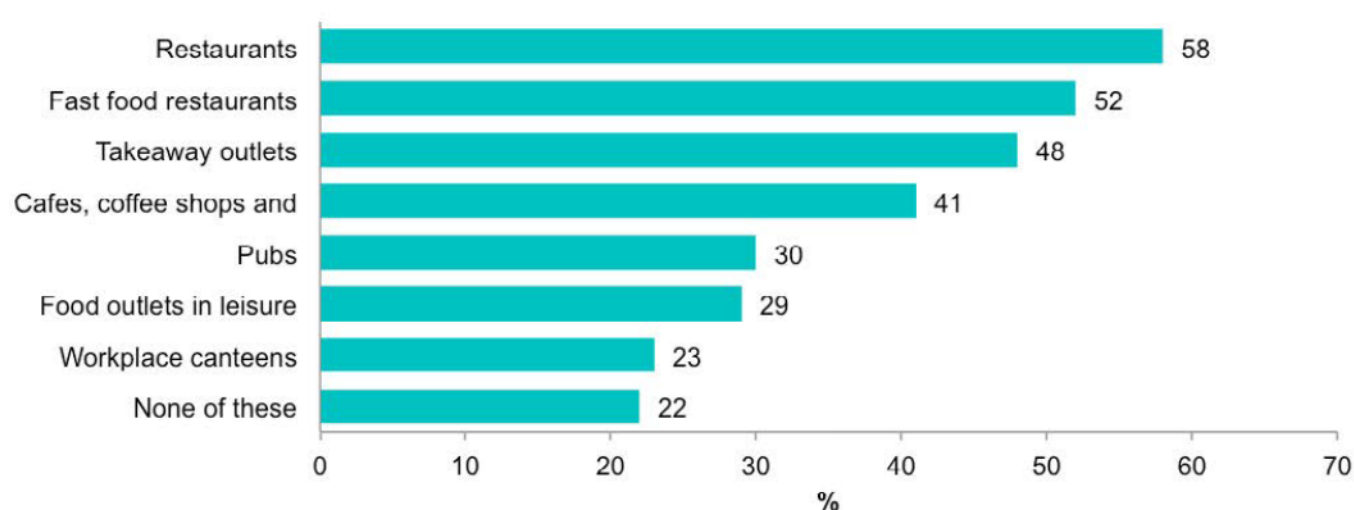
The proportion eating out also varied with education. People with degrees were more likely than people with no qualifications to say they had eaten in a restaurant, pub or bar, café or canteen or to say they had eaten fast food or from a takeaway in the last month. People with no qualifications were more likely than people with qualifications to say that they had not eaten out in the last month (Table 13).

Across Northern Ireland the majority of people surveyed expressed a preference for more nutritional information to be displayed when they eat out (78%). Most people (58%) said that they would like more information about how healthy different food options are in restaurants, and around half said that they would like such information displayed in fast food restaurants (52%) or takeaway outlets (47%). Participants were less likely to want

to see nutritional information in pubs (30%) or food outlets in leisure facilities such as cinemas and bowling alleys (29%) (Table 14).

There was stronger support for provision of health information at more frequented food outlets, for example participants were both most likely to say that they had eaten at restaurants within the last month and to say that they would like health information displayed at restaurants. Canteens were both frequented by a smaller proportion of people than restaurants and received the least support for displaying health information. This might be explained by people expressing a preference for provision of health information at food outlets that they use themselves.

Figure 3 In which, if any, of these places would you like to see more information displayed about how healthy different options are?



Base: Respondents from Northern Ireland

Appendix Table 14

The availability of healthy food options was an important factor reported in deciding where to eat out for 35% of participants across Northern Ireland, England and Wales. Healthy food options were reportedly more important to people with degrees (44%) than people with no qualifications or whose highest qualifications were GCSEs (28%-29%). One in ten people stated that the display of nutritional information about food options would be a factor in their choice of food outlet. Cleanliness and food hygiene were the factors most likely to determine where people eat out, cited by 69% of people. Half of 16-34 year olds (49%) and a third of those over 54 (33%) mentioned a good hygiene rating score as a determining factor (Tables 15 and 16).

Young people (14% of 16-34 year olds) were more likely than older people (9% of those aged 35 or more) to cite the provision of nutritional information about food options as an important factor when choosing where to eat. This may be because younger people have a better understanding of recommended calorie intake (Table 15).

Use of food labels and nutritional information

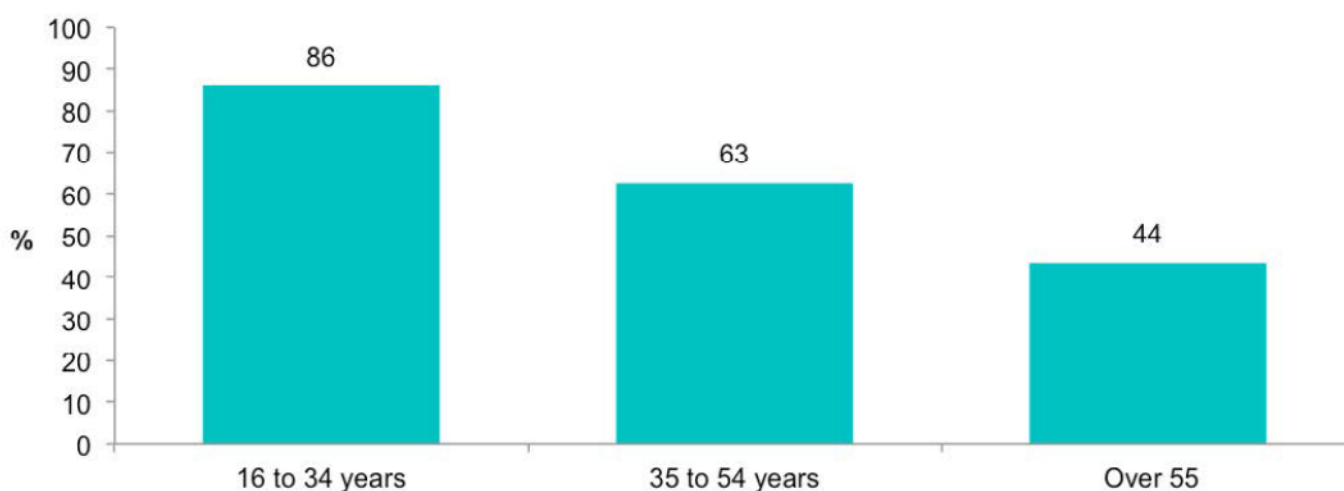
- Less than half (41%) of people living in the lowest income households find food labelling easy to read. Calorie Wise information must be displayed clearly and prominently in simple terms.
- Two-thirds of people do not always trust nutritional information presented on food and menus. Distrust was highest in people living in low income households suggesting that the Calorie Wise scheme will be more successful if the information appears authoritative and independent.
- People can engage with labels and presented information: the great majority of people do check use-by dates when shopping (85%) and cooking (77%). This suggests that getting people to engage with presented information is a feasible aim for Calorie Wise.

For people to be able to engage with presented nutritional information they need to find the information accessible and they need to trust that the information is correct. We found there to be disparities in both the proportion of people who reported being able to read labels easily and in the perceived reliability of food information. Unless the Calorie Wise scheme addresses these issues, groups who already use food labels and have good calorie knowledge may be the ones most likely to benefit, and the scheme could actually serve to increase disparities.

Accessibility: ease of reading labels

In Northern Ireland 28% of people surveyed said that they find the size of the print on food labels hard to read, even when wearing glasses or contact lenses. 47% of people aged over 55 found the labelling on food products either quite or very difficult to read (see **Figure 4**), likely due to deterioration of eyesight with age (Table 17).

Figure 4 Ease of reading labels



Base: Respondents from Northern Ireland

Appendix Table 17

Trust: is food what it says it is on the label?

Overall, across Northern Ireland, England and Wales, two-thirds (66%) of people are not always confident that food is what it says it is on the label or menu (Table 18). For the Calorie Wise scheme to be a success it is critical that information appears authoritative and independent. This may indicate a need for provision of energy information on menus to be visibly branded with the logo of a familiar and respected organisation, or for the process of information audit to be visibly branded.

Suspicion that food labels do not always accurately represent the contents of the product is strongly related to household income. A quarter (27%) of people living in the lowest income households said that they never, rarely or only sometimes felt confident in food labelling, compared with 8% of those in the highest income households. This could in part also reflect the types of food and venues used by people on higher and lower incomes (Table 18).

Scepticism about presented food information was higher in young people than older people (see Table 19), and slightly more likely in women than men (Table 21). This could simply reflect the fact that younger people and women are more likely to have engaged with such information.

People with no qualifications were less likely (77%) to say that they felt confident that food is what it says on the label or menu than people with qualifications (86%-88%) (Table 20).

Behaviour: checking use-by dates on labels

As noted earlier, a correlation between use of food labels and menu labelling has been observed in the USA²⁸ showing that an interest in one may predispose consumers to use other label types²⁹. Most people in Northern Ireland, England and Wales say that they always check use-by dates (either for all foods or certain types of foods) when they go shopping (85%) or when they are about to cook or prepare food (77%) (Table 22 and 23).

Despite expressing greater confidence in food labels than women, men were less likely to always check use by dates when shopping (79% compared to 88% of women) (see table 22) or when preparing food (76% vs 80%) (see table 23). This might be partly explained by cultural expectations and roles fulfilled by different genders.

Women were more likely than men to be responsible for shopping (93% compared to 78%) (Table 24) and preparing meals (95% compared to 81%) (see table 25) for their families and therefore may be more engaged with food safety than men. Having responsibility for both food shopping and food preparation were associated with a higher likelihood of checking the use-by dates while shopping and preparing food respectively. After controlling for responsibility for food shopping, men were still less likely than women to check use-by dates when buying food. However, once we controlled for responsibility for food preparation, there was no difference between the proportion of men and women who checked use-by dates before preparing food.

²⁸ Elbel, B. (2011) Consumer estimation of recommended and actual calories at fast food restaurants. *Obesity* 19(10): 1971-1978.

²⁹ Although findings from the USA are not directly applicable to the UK they are a useful indication of likely trends.

People who were unemployed (75%) were less likely than those in work (85%) to always check use by dates when they went shopping (Table 26). The proportion of people checking use by dates before preparing or cooking food also varied by employment status. Checking use by dates before cooking or preparing food was less common among people who were retired (70%) than in people who were in work (81%) (Table 27).

People in the lowest income group were less likely to always check use by dates (73%) when cooking or preparing food than those in the highest income group (83%). This might be due to reluctance for people on lower incomes to waste food and therefore money, issues which are of less concern to people on higher incomes (Table 28). However, the proportion of people who always check use by dates while purchasing food did not vary by income, indicating that engagement with food labelling at food outlets may be similar across different income groups.

Those with no qualifications were less likely than people with degrees to check use-by dates either when they bought or prepared food. This could be partly explained because this group indicated that they were less confident that food labels were reliable (Table 29).

People who were highly engaged with labels³⁰ were more likely to know how many calories women should eat in comparison with people who were not highly engaged with labels³¹ (33% and 23% respectively). But the proportion of people who knew how much men should eat did not vary by engagement with labels (Table 30).

³⁰ That is people who always check use-by dates, both when shopping and when preparing food.

³¹ People who do not always check use-by dates.

Discussion

Most people (80%) think that it is important to eat the right number of calories each day, but few know what their daily energy requirements are. As noted earlier, the latter is an important prerequisite for calorie labelling to be effective and this suggests that some people might benefit from the provision of information about appropriate calorie intake when they are eating out in order to help them make healthier choices. This is confirmed by the American experience of calorie labelling on menus with one meta-analysis showing that the addition of some contextual or interpretative information helped consumers to select foods containing fewer calories³². As noted in the original PSI evaluation of Calorie Wise, however, there is tension between the simplicity of the labelling, which encourages use, versus the comprehensiveness of the information – too much information can discourage use³³.

Encouragingly there was a high level of support for the provision of nutritional information at food outlets, which suggests the Calorie Wise scheme will be positively received by the general public. While it must be remembered that the desire for further nutritional information does not necessarily mean that this information will be used in practice (the value-action gap) an expressed interest in the provision of nutrition information is an important precursor to the search and actual use of such information to guide decisions³⁴.

The majority of people in Northern Ireland, England, and Wales check use-by dates, both when they are shopping and when they are preparing food. But we found that older people, who said that labels were hard to read, were less likely to check use-by dates even though they were more likely than younger people to say that they trusted food labels. Previous research indicates a correlation between food label and menu label use, suggesting that problems with food label use might provide insight into menu label use. To ensure that older people are able to engage with the Calorie Wise scheme it is important that information is presented clearly.

Those in the lowest income group were less likely to check use-by dates when they were cooking or preparing food, however there was no significant difference by income between the proportions of people who checked use-by dates while food shopping. Those on lower incomes were also more likely to report that food labels were hard to read and to express distrust that food labelling was reliable. While these factors are likely to decrease the proportion of people on low incomes who check use-by dates when cooking, the fact they were just as likely as higher income groups to check use-by dates when shopping suggests that it might also be related to a desire to use up all food that has been bought. A previous analysis of the Food and You data also showed that people in lower income groups avoided throwing food away³⁵.

³² Sinclair, S.E. et al. (2014) The Influence of Menu Labeling on Calories Selected or Consumed: A Systematic Review and Meta-Analysis. *Journal of the Academy of Nutrition and Dietetics*. 114(9): 1375-1388.

³³ Ray, K. et al. (2013) Evaluation of Caloriewise: A Northern Ireland Pilot of the Display of Calorie Information in Food Catering Businesses. *Policy Studies Institute* <https://www.food.gov.uk/northern-ireland/researchni/fs307001>

³⁴ Grunert, K.G. and Wills, J.M. (2007) A review of European research on consumer response to nutrition information on food labels. *Journal of Public Health*. 15(5): 385-399.

³⁵ Roberts, C. et al. (2016) Food affordability and safety. Paper 4 Food and You Waves 1-3 Secondary Analysis. *NatCen Social Research*, London.

There was no difference in the levels of knowledge about calorie consumption according to participant's tendency to check use-by dates either when shopping or cooking. But we did find that those who never check labels are less likely to eat out. Only 77% of people who never check use-by dates said they eat out at least once a month compared to 86% of people who said they always check use-by dates. We also found that people with lower levels of knowledge about calories were less likely to eat out at least once a month than people with higher levels of knowledge about calories.

These findings are consistent with the wider literature discussed earlier on the use of food and nutrition labels generally as well as calorie information. The literature suggests that for some groups of people, their poor health and nutrition literacy may be a limiting factor. Again this is endorsed by the wider literature³⁶.

As almost all participants report eating out at least occasionally, it is important that calorie information provided is accessible for all groups. However, this analysis suggests that there might be some groups that would benefit from specific targeting.

Younger groups (aged under 35 years) had better knowledge about recommended energy intake than older groups and reported eating out more frequently. As younger people also reported eating at fast food and takeaway venues more frequently than older groups it might be possible to tailor signage towards these younger groups, perhaps displaying information in a way that is particularly appealing to younger people or taking advantage of their greater knowledge of energy intake and the fact that they do not

tend to struggle with less prominent labelling to provide further nutritional information. This group were less likely to say they were confident in food labelling, suggesting that an official logo or marker might be particularly helpful in increasing trust in the scheme among this group.

A higher proportion of older groups (aged over 55) and people on lower incomes reported struggling to read food labels and had a lower existing level of knowledge about calorie intake. Although these groups tend to eat out less frequently, it is especially important that menus in restaurants, pubs and cafés, where older groups were more likely to report eating, ensure that calorie labelling is clear, prominent and easy to understand in order to avoid increasing existing disparities in knowledge and behaviour.

³⁶ Malloy-Weir, L. and Cooper, M. (2016) Health literacy, literacy, numeracy and nutrition label understandings and use: a scoping review of the literature. *Journal of Human Nutrition and Dietetics* 30(3): 309-325.

Conclusions

An understanding of daily energy requirements is key to the success of calorie labelling, but this analysis shows that while the majority of people know that it is important not to overeat many do not know what their actual requirements are. This suggests that there is a need to enhance basic health/nutrition literacy especially among some groups, such as older people and those on a low income. Provision of contextual information, such as an anchor statement of daily requirements may be helpful here in assisting consumers in using and interpreting the Calorie Wise information, although as the PSI evaluation found simplicity and consistency are important too³⁷. Other factors were also found to influence peoples' use of labelling information with older people and people on low incomes being less likely to trust food labels or to say that they are easy to read. In order to maximise the effectiveness of the scheme, especially among lower income groups and older people, it is important that labels are clear and easy to read. Calorie counts should be in a consistent style alongside an official logo or marker which will give diners confidence in the information provided and the PSI evaluation also found that use of the Calorie Wise logo was seen to provide consistency by consumers and to promote awareness.

³⁷ Ray, K. et al. (2013) Evaluation of Caloriewise: A Northern Ireland Pilot of the Display of Calorie Information in Food Catering Businesses. *Policy Studies Institute* <https://www.food.gov.uk/northern-ireland/researchni/fs307001>

Appendix

Table 1 Attitude towards calorie consumption, by age group

Northern Ireland, Wave 4	16 to 34	35 to 54	55+	Total
	%	%	%	%
Not important to eat the right amount of calories each day	20	17	21	20
Important to eat the right amount of calories each day	80	83	79	80
Bases	106	158	254	519

Table 2 Knowledge of men's recommended daily calorie intake, by age group

Northern Ireland, Wave 4	16 to 34	35 to 54	55+	Total
	%	%	%	%
Underestimate	27	35	36	33
Correct response	45	26	11	26
Overestimate	5	13	11	10
Don't know	22	27	42	31
Bases	106	158	254	519

Table 3 Knowledge of women's recommended daily calorie intake, by age group

Northern Ireland, Wave 4	16 to 34	35 to 54	55+	Total
	%	%	%	%
Underestimate	28	39	39	36
Correct response	47	28	13	29
Overestimate	5	6	5	5
Don't know	20	27	42	30
Bases	106	158	254	518

Table 4 Knowledge of men's recommended daily calorie intake, by highest qualification

<i>Northern Ireland, Wave 4</i>	Degree of higher	A level/ diploma/ apprenticeship	GCSE	Other/none
	%	%	%	%
Underestimate	44	31	36	22
Correct response	30	34	23	14
Overestimate	10	8	13	10
Don't know	17	27	28	54
Bases	118	156	91	147

Table 5 Knowledge of women's recommended daily calorie intake, by highest qualification

<i>Northern Ireland, Wave 4</i>	Degree of higher	A level/ diploma/ apprenticeship	GCSE	Other/none
	%	%	%	%
Underestimate	47	35	38	25
Correct response	33	33	29	15
Overestimate	7	6	3	6
Don't know	12	27	30	54
Bases	118	156	91	147

Table 6 Frequency of eating out, by knowledge of men's recommended daily calorie intake

<i>Northern Ireland, England and Wales Wave 4</i>	Incorrect	Correct	Don't know	Total
	%	%	%	%
At least once a week	52	50	54	44
Once or twice a month	34	43	27	40
Less than once a month	10	6	11	11
Never	4	0	9	4
Bases	221	114	180	3102

Table 7 Frequency of eating out, by knowledge of women's recommended daily calorie intake

<i>Northern Ireland, England and Wales Wave 4</i>	Incorrect	Correct	Don't know	Total
	%	%	%	%
At least once a week	50	55	53	44
Less than once a week, but at least once a month	35	39	27	40
Less than once a month	12	5	10	11
Never	3	2	9	4
Bases	217	121	177	3102

Table 8 Frequency of eating out, by age group

<i>Northern Ireland, England and Wales, Wave 4</i>	16 to 34	35 to 54	55+	Total
	%	%	%	%
At least once a week	57	41	34	44
Less than once a week, but at least once a month	35	46	40	40
Less than once a month	5	10	18	11
Never	2	3	8	4
Bases	643	992	1463	3102

Table 9 Frequency of eating out, by country

<i>Northern Ireland, England and Wales, Wave 4</i>	Northern Ireland	England	Wales	Total
	%	%	%	%
At least once a week	52	44	39	44
Less than once a week, but at least once a month	34	40	44	40
Less than once a month	9	11	13	11
Never	5	5	3	4
Bases	518	2094	490	3102

Table 10 Food venues visited over the past month, by age group

<i>Northern Ireland Wave 4</i>	16 to 34	35 to 54	55+	Total
	%	%	%	%
Restaurant	65	74	63	67
Takeaway food from a restaurant or takeaway outlet	75	72	34	59
Fast food restaurant	58	44	21	40
Pub/ bar/ nightclub	16	23	15	18
Café, coffee shop or sandwich bar	74	59	45	58
Canteen (e.g. at work, school, university, or hospital)	17	19	5	13
Hotel, B&B or guesthouse	17	24	20	20
Mobile food van or stall	7	7	1	5
None of these	4	3	14	7
Bases	106	158	256	521

Table 11 Food venues visited over the past month, by work status

<i>Northern Ireland Wave 4</i>	In work	Retired	Other	Total
	%	%	%	%
Restaurant	74	60	57	67
Takeaway food from a restaurant or takeaway outlet	69	21	67	59
Fast food restaurant	49	18	38	40
Pub/ bar/ nightclub	19	14	18	18
Café, coffee shop or sandwich bar	62	49	59	58
Canteen (e.g. at work, school, university, or hospital)	17	4	11	13
Hotel, B&B or guesthouse	25	16	11	20
Mobile food van or stall	5	1	10	5
None of these	4	17	8	7
Bases	263	162	96	521

Table 12 Food venues visited over the past month, by household income

<i>Northern Ireland Wave 4</i>	Less than £10,400	£10,400 to £25,999	£26,000 to £51,999	Over £52,000	Total
	%	%	%	%	%
Restaurant	41	62	77	88	67
Takeaway food from a restaurant or takeaway outlet	43	60	61	64	59
Fast food restaurant	26	40	42	41	40
Pub/ bar/ nightclub	13	15	20	23	18
Café, coffee shop or sandwich bar	39	48	61	75	58
Canteen (e.g. at work, school, university, or hospital)	4	11	10	29	13
Hotel, B&B or guesthouse	10	19	20	34	20
Mobile food van or stall	1	6	3	6	5
None of these	22	8	3	4	7
Bases	64	144	147	73	521

Table 13 Food venues visited over the past month, by highest qualification

<i>Northern Ireland Wave 4</i>	Degree or higher	A level/ Diploma/ Apprenticeship	GCSE	Other/None	Total
	%	%	%	%	%
Restaurant	83	68	70	50	67
Takeaway food from a restaurant or takeaway outlet	64	65	59	44	59
Fast food restaurant	46	44	42	29	40
Pub/ bar/ nightclub	29	17	19	9	18
Café, coffee shop or sandwich bar	78	59	53	41	58
Canteen (e.g. at work, school, university, or hospital)	20	16	7	8	13
Hotel, B&B or guesthouse	33	24	10	10	20
Mobile food van or stall	3	6	4	5	5
None of these	2	4	6	18	7
Bases	118	156	92	147	521

Table 14 Would like to see more information displayed about how healthy different options are, by age group

<i>Northern Ireland, Wave 4</i>	16 to 34	35 to 54	55+	Total
	%	%	%	%
Restaurants	55	61	58	58
Fast food restaurants	57	58	43	52
Takeaway outlets	55	55	35	47
Cafés, coffee shops and sandwich shops	39	46	40	41
Pubs	24	40	27	30
Food outlets in cinemas, bowling alleys, theme parks or other leisure facilities	28	37	22	29
Workplace canteens	25	28	17	23
None of these	20	20	27	22
Bases	105	158	255	519

Table 15 Factors determining where to eat out, by age group

<i>Northern Ireland, England and Wales, Wave 4</i>	16 to 34	35 to 54	55+	Total
	%	%	%	%
Price	62	53	38	51
Recommendations or invitation from someone you know/good reviews	47	50	46	48
Nutritional information of the food is provided	14	9	9	10
Healthy foods/choices	32	38	36	35
Cleanliness and hygiene	67	72	69	69
Good service	58	63	57	59
A good hygiene rating/score	49	43	33	41
Food for restricted diets such as Vegetarian, Halal, Kosher etc.	14	12	7	11
None of these	2	2	2	2
Bases	644	996	1474	3118

Table 16 Factors determining where to eat out, by highest qualification

<i>Northern Ireland, England and Wales, Wave 4</i>	Degree or higher	A level/ Diploma/ Apprenticeship	GCSE	Other/None	Total
	%	%	%	%	%
Price	56	53	49	39	51
Recommendations or invitation from someone you know/good reviews	59	53	41	27	48
Nutritional information of the food is provided	10	11	9	11	10
Healthy foods/choices	44	35	29	28	35
Cleanliness and hygiene	73	69	73	59	69
Good service	65	62	57	48	59
A good hygiene rating/score	40	45	44	33	41
Food for restricted diets such as Vegetarian, Halal, Kosher etc.	14	9	10	8	11
None of these	0	1	3	5	2
Bases	872	915	594	721	3118

Table 17 Ease of reading the labelling on food products, by age group

<i>Northern Ireland Wave 4</i>	16 to 34	35 to 54	55+	Total
	%	%	%	%
Very easy to read	47	24	9	26
Quite easy to read	39	39	34	37
Neither easy nor difficult to read	5	15	10	10
Quite difficult to read	7	18	36	22
Very difficult to read	2	5	10	6
Bases	106	158	254	519

Table 18 Feel confident that food is what it say on the label or menu, by household income

<i>Northern Ireland, England and Wales, Wave 4</i>	Less than £10,400	£10,400 to £25,999	£26,000 to £51,999	Over £52,000	Total
	%	%	%	%	%
Always	26	33	30	39	34
Most of the time	47	53	58	52	52
Some of the time	19	11	10	7	12
Rarely	7	2	1	1	2
Never	1	0	1	0	1
Bases	332	827	718	569	3106

Table 19 Feel confident that food is what it say on the label or menu, by age group

<i>Northern Ireland, England and Wales, Wave 4</i>	16 to 34	35 to 54	55+	Total
	%	%	%	%
Always	34	35	32	34
Most of the time	48	51	56	52
Some of the time	15	12	8	12
Rarely	2	2	3	2
Never	1	1	1	1
Bases	642	993	1467	3106

Table 20 Feel confident that food is what it say on the label or menu, by highest qualification

<i>Northern Ireland, England and Wales, Wave 4</i>	Degree or higher	A level/ Diploma/ Apprenticeship	GCSE	Other/None	Total
	%	%	%	%	%
Always	37	30	31	37	34
Most of the time	51	57	55	40	52
Some of the time	10	10	12	16	12
Rarely	1	2	1	5	2
Never	1	0	1	1	1
Bases	870	915	592	713	3106

Table 21 Feel confident that food is what it say on the label or menu, by gender

<i>Northern Ireland, England and Wales, Wave 4</i>	Male	Female
	%	%
Always	35	33
Most of the time	52	51
Some of the time	10	13
Rarely	2	2
Never	1	0
Bases	1225	1881

Table 22 Whether check use-by dates when buying food, by gender

<i>Northern Ireland, England and Wales, Wave 4</i>	Male	Female	Total
	%	%	%
Yes, always	64	76	70
Yes, depending on the food type	16	12	14
Sometimes	11	7	9
Never	5	3	4
Do not buy food (spontaneous only)	4	1	3
Bases	1233	1885	3118

Table 23 Whether check use-by dates when cooking or preparing food, by gender

<i>Northern Ireland, England and Wales, Wave 4</i>	Male	Female	Total
	%	%	%
Yes, always	58	64	61
Yes, depending on the food type	17	16	17
Sometimes	11	13	12
Never	8	6	7
Do not buy food (spontaneous only)	6	1	3
Bases	1233	1885	3118

Table 24 Responsible for food shopping, by gender

<i>Northern Ireland, England and Wales, Wave 4</i>	Male	Female	Total
	%	%	%
Not responsible for food/grocery shopping	22	7	14
Responsible for food/grocery shopping	78	93	86
Bases	1233	1885	3118

Table 25 Responsible for food preparation/cooking, by gender

<i>Northern Ireland, England and Wales, Wave 4</i>	Male	Female	Total
	%	%	%
Not responsible for food preparation/cooking	19	5	12
Responsible for food preparation/cooking	81	95	88
Bases	1233	1885	3118

Table 26 Whether check use-by dates when food shopping, by employment status

<i>Northern Ireland, England and Wales, Wave 4</i>	In work	Retired	Unemployed	Other	Total
	%	%	%	%	%
Yes, always	71	70	52	70	70
Yes, depending on the food type	14	13	24	15	14
Sometimes	10	8	13	8	9
Never	3	6	11	5	4
Do not buy food (spontaneous only)	2	4	1	3	3
Bases	1577	1002	110	428	3118

Table 27 Whether check use-by dates when cooking or preparing food, by employment status

<i>Northern Ireland, England and Wales, Wave 4</i>	In work	Retired	Unemployed	Other	Total
	%	%	%	%	%
Yes, always	64	54	53	61	61
Yes, depending on the food type	17	16	20	18	17
Sometimes	11	13	8	13	12
Never	5	13	17	4	7
Do not buy food (spontaneous only)	3	4	2	4	3
Bases	1577	1002	110	428	3118

Table 28 Whether check use-by dates when cooking or preparing food, by household income

<i>Northern Ireland, England and Wales, Wave 4</i>	Less than £10,400	£10,400 to £25,999	£26,000 to £51,999	Over £52,000	Total
	%	%	%	%	%
Yes, always	60	64	57	63	61
Yes, depending on the food type	14	14	18	21	17
Sometimes	12	9	13	10	12
Never	11	8	8	5	7
Do not buy food (spontaneous only)	4	4	3	1	3
Bases	335	831	718	569	3118*

* Note, about 20% of the sample is missing data on household income.

Table 29 Whether check use-by dates when food shopping, by qualification

<i>Northern Ireland, England and Wales, Wave 4</i>	Degree or higher	A level/ Diploma/ Apprenticeship	GCSE	Other/None	Total
	%	%	%	%	%
Yes, always	69	69	74	68	70
Yes, depending on the food type	18	14	10	10	14
Sometimes	9	10	8	11	9
Never	3	4	4	7	4
Do not buy food (spontaneous only)	1	3	4	4	3
Bases	872	915	594	721	3118

Table 30 Whether check use-by dates when cooking or preparing food, by qualification

<i>Northern Ireland, England and Wales, Wave 4</i>	Degree or higher	A level/ Diploma/ Apprenticeship	GCSE	Other/None	Total
	%	%	%	%	%
Yes, always	61	60	65	59	61
Yes, depending on the food type	22	16	14	13	17
Sometimes	11	14	9	11	12
Never	6	7	6	11	7
Do not buy food (spontaneous only)	1	3	5	6	3
Bases	872	915	594	721	3118

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