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Profiles and practices of people with food hypersensitivities

Prepared for: Food Standards Agency

**Food and You
Waves 1-4
Briefing paper 1
May 2017**



Summary

- As part of the Food Standards Agency's responsibility for protecting public health from risks which may arise in connection with the consumption of food, two key priorities are minimising the incidence of foodborne disease, and minimising the incidence of food-related allergic reactions. The FSA produces guidance and information to consumers on what they can do to minimise their exposure to food-related risks, including allergens, and focuses on avoiding cross-contamination and awareness of food ingredients.
- There are varying estimates of the proportion of the UK population reporting having a food allergy or a food intolerance and there is little data available about who these people are and what are their food-related safety practices. This paper sets out to analyse the data from Waves 1-4 of the FSA's Food and You survey to look at the characteristics of the adult population who report having food allergies and selected food-related practices around cross-contamination in the home, and attitudes and behaviours around eating outside the home for those with food allergies and food intolerance.
- Adults who reported a food allergy were more likely to be female and to have poor self-reported health than those who did not. There were no differences in the profile of those reporting an allergy and those without in relation to other characteristics such as working status, education level or living in a more urban or rural location.
- Just over half (58%) of adults reporting an allergy said that their earliest allergy had started before the age of 18 with 39% reporting their allergy had started before the age of 10.
- No differences were found between participants reporting a food allergy or intolerance and those reporting neither with regard to cross-contamination behaviours i.e. washing hands before preparing or cooking food and using different chopping boards for different foods.
- There was no difference in frequency of eating out between those who reported a food allergy, those who reported an intolerance and those with neither. In terms of types of establishments, those reporting food intolerance were more likely than those with neither an allergy nor intolerance to say they had eaten out in a restaurant or in a café in the past month. There were no differences in the proportion of participants who placed most importance on an establishment having food for restricted diets or for cleanliness and hygiene across the three groups.
- Overall, our findings suggest that people who report a food allergy are not that different from those who do not in terms of both characteristics and in relation to food safety practices in the home and outside. However the number of participants who report having a food allergy are small in a population survey like Food and You and a larger sample size, or targeted sample boost, may allow more exploration of the associations between having a food allergy or intolerance and reported behaviours that can inform policy in this area.

Introduction

The Food Standards Agency (FSA or ‘the Agency’) is an independent Government department responsible for food safety and hygiene in England, Wales and Northern Ireland.¹ As part of the Agency’s responsibility for protecting public health from risks which may arise in connection with the consumption of food, two key priorities are minimising the incidence of foodborne disease, and minimising the incidence of food-related allergic reactions. By improving the understanding of the population’s behaviour, attitudes and knowledge, and the risks that consumers are exposed will inform policy interventions to underpin the Agency’s priorities.

This paper, the first in a series based on secondary analysis of Waves 1-4 of the FSA’s Food and You survey,² focuses on the profile of those who report a food hypersensitivity and their food-safety-related practices in the home and when eating out. Food hypersensitivity is an umbrella term that includes: 1) food allergy which is an immunological and potentially life-threatening reaction in response to consuming certain types of food; and 2) food intolerances or sensitivities which are a related condition in which an individual has difficulty digesting particular foods or food components, which can lead to symptoms such as abdominal pain or diarrhoea, but does not trigger an immune response.³

The precise prevalence of both adult food allergy and food intolerance is unclear. A variety of estimates have been obtained from different studies. A meta-analysis of food allergy estimated that food allergy affects approximately 3-4% of adults in Western countries, but that the prevalence of self-reported food allergy is much higher at $\leq 35\%$.⁴ Surveys of the UK population have found self-reported levels of food allergy ranging from 4-6%⁵ to 12%⁶. Levels of food intolerance reported in surveys vary from 9% of individuals to 25% of households including at least one allergy or intolerance sufferer.^{6,7} Of these, many are self-diagnosed. This uncertainty makes it important to understand better who among the adult population report allergies and/or food intolerances as little is known about who they are.

¹ The FSA was previously the body for food safety across the UK. In April 2015, its responsibilities in Scotland were transferred to the new independent Scottish food safety body, Food Standards Scotland (FSS). This research was commissioned prior to this change, and is based on data from Waves 1-3 of the FSA’s Food and You survey, which was undertaken across the UK. For the purposes of this research, analysis and findings therefore relate to aggregate UK-level data.

² The topics of these papers were developed with reference to the FSA’s own policy-, science- and consumer-engagement-related priorities.

³ <https://www.aaaai.org/conditions-and-treatments/conditions-dictionary/food-Intolerance>

⁴ Rona, R.J. et al (2007). The prevalence of food allergy: a meta-analysis. *Journal of Allergy and Clinical Immunology* 120: 638-646.

⁵ <https://www.food.gov.uk/science/research-reports/ssresearch/foodandyou>

⁶ Vacher, L. (2015). Understanding the FreeFrom Consumer. YouGov

⁷ <https://www.food.gov.uk/sites/default/files/food-and-you-w4-combined-report.pdf>

While there is a dearth of epidemiological studies to provide accurate data on the prevalence of either food allergies or food intolerances in the UK making it difficult to confirm reports of increasing incidence, there have been some studies examining various aspects of peoples' experiences of allergies or intolerances: their practices when eating out,^{8,9} links with low income and costs,^{10,11} use of allergen labelling when shopping,^{12,13} use of "freefrom" foods,¹⁴ the psychosocial impacts of food allergies and intolerances,¹⁵ quality of life,¹⁶ and their management.¹⁷ There is also a small sociological literature exploring the rise of food allergies and the disjuncture in figures of prevalence between self-reported and diagnosed^{18,19,20} and gender differences in prevalence.²¹ However, a gap remains in understanding peoples' domestic food practices. A more detailed understanding of these can inform the FSA's mission to provide advice and information to consumers on what they can do to minimise their exposure to food-related risks, including allergens, how to avoid cross-contamination and promoting awareness of food ingredients.

This paper sets out to analyse the data from Waves 1-4 of the FSA's Food and You survey to look at the characteristics of the adult population who report having food allergies and selected food-related practices for those who have food allergies or intolerances. Specific research questions are:

- 1) What is the profile of adults reporting a food allergy, looking at factors such as age and gender?
- 2) Are practices around cross-contamination in the home, and attitudes and behaviours around eating outside the home different for those with a food allergy compared to those with food intolerance and those with neither?

⁸ Barnett, J. et al (unpublished). The preferences of those with food allergies and/or intolerance when eating out Report for the FSA FS305013.

⁹ Leftwich, J. et al. (2011). The challenges for nut-allergic consumers of eating out. *Clinical & Experimental Allergy* 41(2): 243-249.

¹⁰ Minaker, L.M., Elliott, S.J. and Clarke, A., 2015. Low income, high risk: the overlapping stigmas of food allergy and poverty. *Critical Public Health*, 25(5), pp.599-614.

¹¹ Voordouw, J., Fox, M., Cornelisse-Vermaat, J., Antonides, G., Mugford, M. and Frewer, L., 2010. Household costs associated with food allergy: an exploratory study. *British Food Journal*, 112(11), pp.1205-1215

¹² Barnett, J., Leftwich, J., Muncer, K., Grimshaw, K., Shepherd, R., Raats, M. M., Gowland, M.H. Gowland, Lucas, J. S. (2011). How do peanut and nut-allergic consumers use information on the packaging to avoid allergens? *Allergy*, 66, 969-978.

¹³ Jenkin et al. (2014). Baseline evaluation of EU Food Information for Consumers (FIC0 Labelling): Final Report. DEFRA, London

¹⁴ YouGov (2016). Understanding the FreeFrom Consumer.

¹⁵ Cummings, A.J. et al (2010). The psychosocial impact of food allergy and food hypersensitivity in children, adolescents and their families: a review. *Allergy*, 65, 933-945.

¹⁶ Goossnes, N.J. et al (2014). Health-related quality of life in food-allergic adults from eight European countries. *Annals of Asthma and Immunology*, 113(1), 63-68.

¹⁷ Stijerna, M-L. et al. (2104). The management of situated risk: a parental perspective on child food allergy. *Health* 18(2), 130-145.

¹⁸ Nettleton, S. et al (2009). Food allergy and intolerance: towards a sociological agenda. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine* 13(6), 647-664

¹⁹ Haeuserman, T. (2015). I can't eat that: the sociology behind the rise in food allergies and intolerances. *Current Sociology* 63(3), 369-386.

²⁰ Waggoner, M.R. (2013). Parsing the peanut panic: the social life of a contested allergy epidemic. *Social Science and Medicine* 90, 49-55.

²¹ DunnGalvin, A. et al. (2006). Incorporating a gender dimension in food allergy research: a review. *Allergy* 61, 1336-1343.

About the data and analysis

This paper is based on secondary analysis of data generated by the FSA's Food and You survey, a biennial, random probability, cross-sectional survey of adults living in private households in the UK. Four waves of the survey have been conducted to date (in 2010, 2012, 2014 and 2016). Samples have been combined across waves for the purposes of this analysis. Wave 4 covered England, Wales and Northern Ireland only. The survey includes a range of questions about reported behaviour, attitudes and knowledge relating to food along with a range of demographic and socio-economic variables, and other household information.

Waves 1-3 of Food and You included a question that asked whether respondents were allergic to certain food but no questions on intolerance. In Wave 4, existing questions were updated and new ones introduced to provide more information on population-level prevalence of adult food allergies and intolerances.^{22 23} This means that we can identify respondents with a food allergy in all four waves (although the way the variable is derived is different in Wave 4 because of the question changes). However we can only identify those with food intolerance in Wave 4.²⁴

Data for analysis has been weighted. Percentages in figures and tables may not add up to 100% due to rounding.

²² <https://www.food.gov.uk/sites/default/files/food-and-you-2014-uk-bulletin-technical-report.pdf>

²³ <https://www.food.gov.uk/sites/default/files/food-and-you-w4-tech-report.pdf>

²⁴ If a respondent had a food allergy and intolerance, they were classed as having a food allergy.

Profile of those with a food allergy

In total, 5% of participants in Waves 1-4 combined reported having a food allergy. Looking at how the characteristics of those who report a food allergy compare with the characteristics of those who do not:

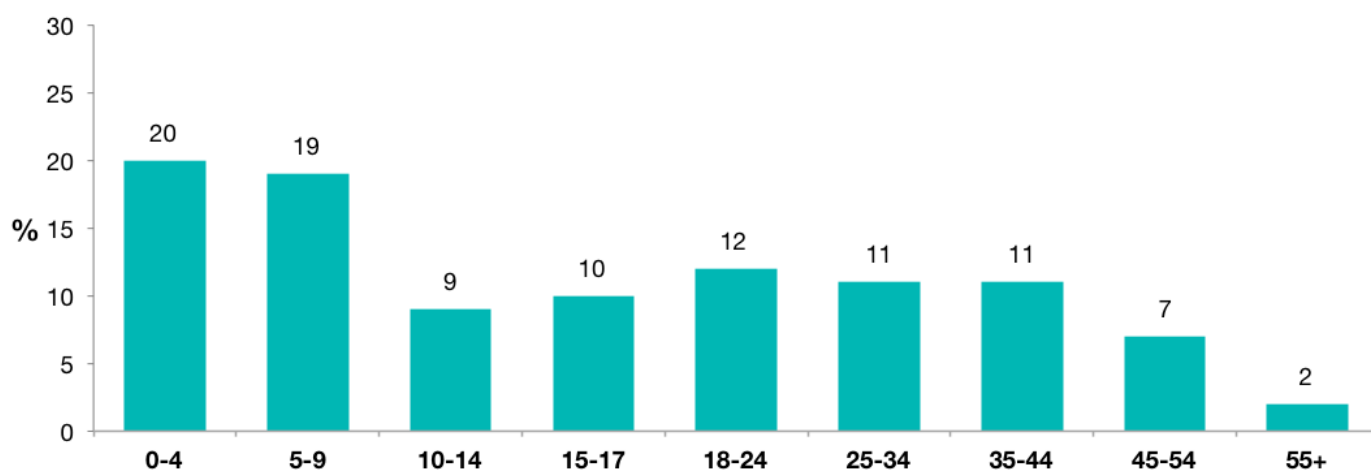
- The proportion reporting a food allergy was evenly distributed across age groups in the adult population and was very similar to the age profile of those who did not have a food allergy
- Those with a food allergy were more likely to be female than those who did not (60% compared with 51%)
- Those with a food allergy were more likely to have fair or bad self-reported health than those who did not (29% compared with 22%)
- There were no differences in the profile of those with an allergy and those without in relation to household size, presence of children under 16 in the household, working status, education level, country of residence or urban/rural location.

Appendix Table A1-A9

Age of allergy onset

For Wave 4, participants who had experienced an adverse reaction were asked when they first started experiencing this. For those who reported a food allergy we calculated the earliest onset (Figure 1). Just over half (58%) reported their earliest allergy had started under the age of 18 with 39% reporting their allergy had started under the age of 10. Forty-three per cent reported their earliest allergy started aged 18 or over with 2% reporting their allergy starting aged 55 or over. Numbers were too small to be able to look at age of allergy onset by specific foods.

Figure 1: Age of earliest onset of food allergy



Base: Those with food allergy in Wave 4

Appendix Table A10

Practices inside and outside the home

Cross-contamination

It was hypothesised that people who reported food hypersensitivity may be more likely to be aware of cross contamination risks due to having to avoid contact with certain foods. Using data from Wave 4 we were able to look at those who reported food intolerance as well as those who reported allergies. In Wave 4, 5% of people reported a food allergy and 9% a food intolerance. We looked at two food safety behaviours that may indicate better risk management in the home: washing hands before preparing or cooking food and using different chopping boards for different foods (Figure 2).

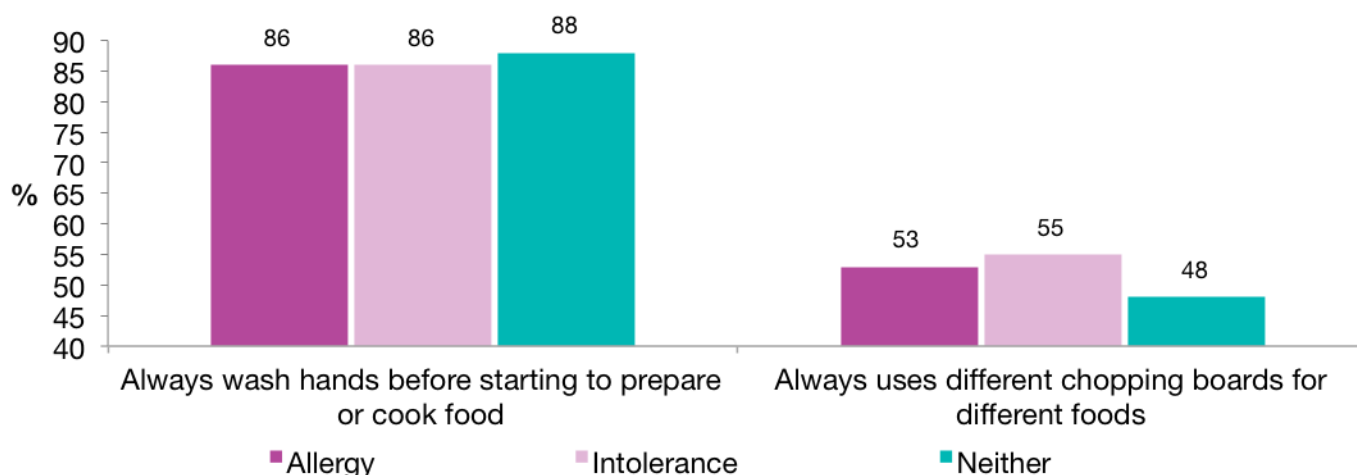
Eighty six per cent of participants who reported having a food allergy said they always washed their hands before preparing or cooking food. This was the same proportion as those who reported intolerance and similar to those with neither food allergy or intolerance.

Fifty-five per cent of participants who reported having a food intolerance said they always used different chopping boards for different foods. This was higher than the proportion with a food allergy (53%) and higher than the proportion with neither food allergy nor intolerance (48%) although not significantly so.

Allergies and eating outside the home

It was thought that respondents with allergies or intolerance may eat out less than those without an allergy, in order to avoid situations where there is a greater risk their food could become contaminated with the ingredient they are allergic/intolerant to. However there was no difference in frequency of eating out between those who reported a food allergy, those with intolerance and those with neither food allergy nor intolerance (Figure 3).

Figure 2: Food safety practices by food hypersensitivity



Base: Wave 4 respondents

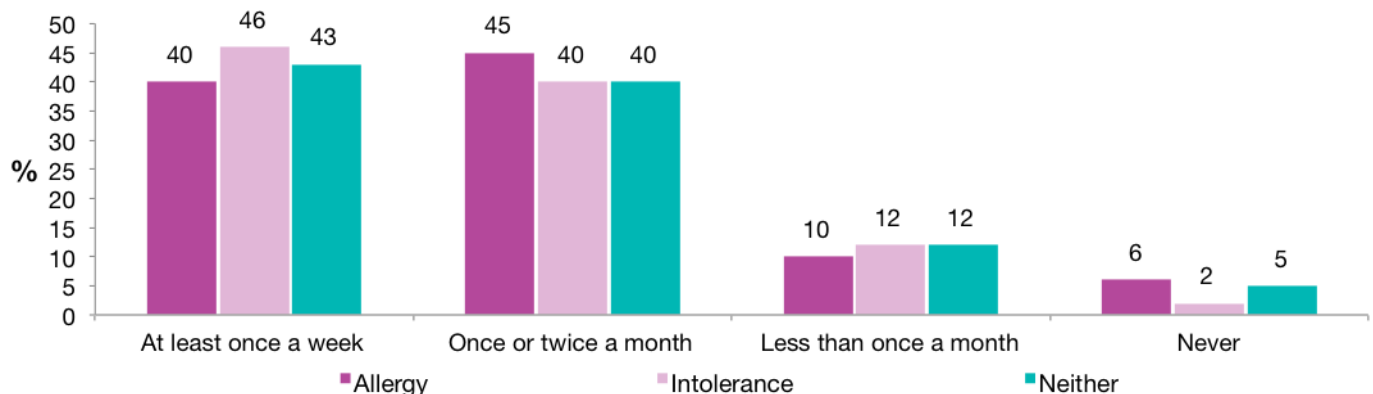
Appendix Table A11-A12

Participants who ate out were asked where they had eaten out in the last month. Those with a food intolerance were more likely than those with neither an allergy or intolerance to say they had eaten out in a restaurant or in a café in the past month (Figure 4). There were no differences in the proportions eating out at other types of establishment or in the proportions who ate takeaway food from a restaurant or takeaway outlet.

We also looked at what participants considered the most important factor when choosing where to eat out. We hypothesised

that participants who reported having a food allergy or intolerance would place more importance on whether an establishment had food for restricted diets or cleanliness and good hygiene (in relation to concerns about cross-contamination). However there were no significant differences in the proportion of participants who placed most importance on an establishment having food for restricted diets or for cleanliness and hygiene across the three groups (Figure 5). In the case of restricted diets this may be because the question wording does not specifically mention food allergies or intolerances.

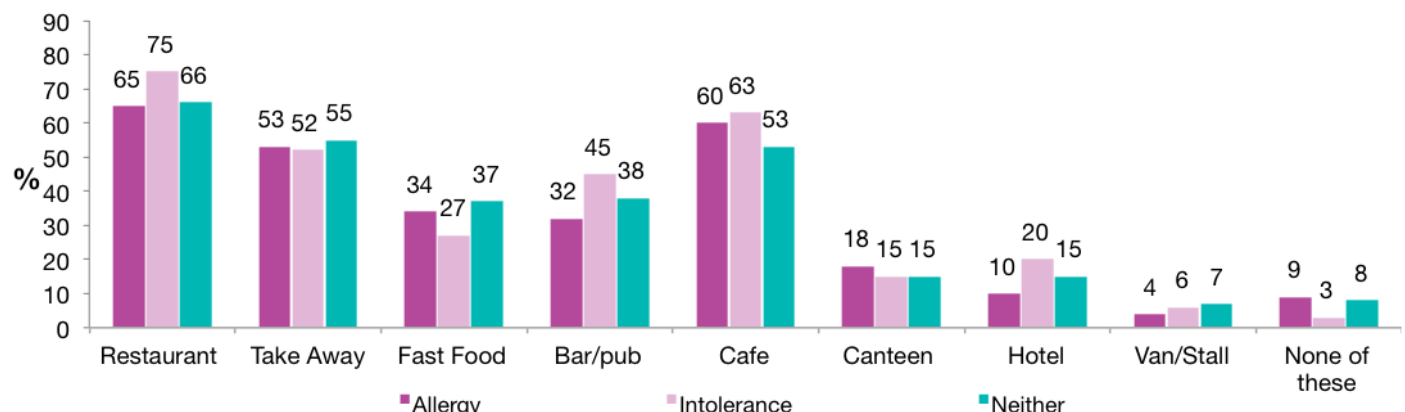
Figure 3: Frequency of eating outside the home by food hypersensitivity



Base: All respondents

Appendix Table A13

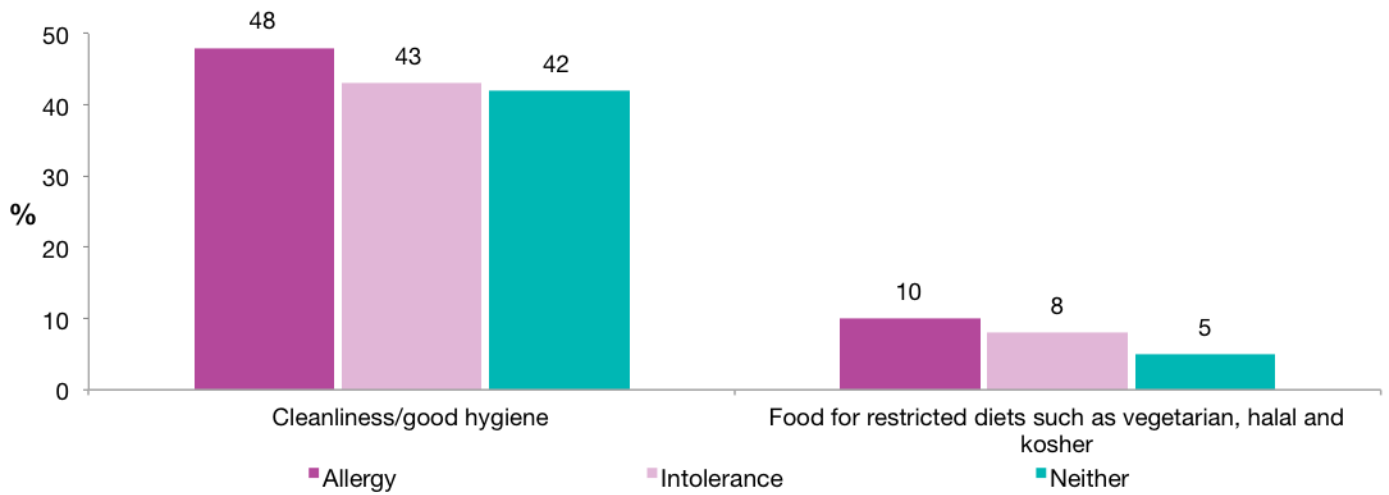
Figure 4: Where participants ate outside the home by food hypersensitivity



Base: Wave 4 respondents

Appendix Table A14

Figure 5: Most important factor when considering where to eat out by food hypersensitivity



Base: Wave 4 respondents

Appendix Table A15

Conclusions

The findings suggest that those with a food allergy are more likely to be female and have poorer health than those without. While a survey such as Food and You can provide some insight into the profile of those with a food allergy compared to those who do not (and compared to the total sample), the number of participants who report having a food allergy are small. This may explain why differences in practices were not significant. A larger sample size, or targeted sample boost, may allow more exploration of the associations between having a food allergy or intolerance and reported behaviours. Given the paucity of studies of the food practices of people with food allergies and intolerances, there are few data to compare these findings with and support the basis of policy. However, two small qualitative studies show that those with food allergies or intolerance use complex strategies when making food choices,²⁵ and that these extend beyond avoiding particular allergens and/or foods. They also suggest that there are differences between those who report food allergies versus food intolerance.²⁶ This could have important implications in terms of food labelling and other forms of information provision. Due to the limited data on adult food hypersensitivities the FSA aims to build on this paper and focus on this area.

²⁵ Barnett, J., Vasileiou, K., Gowland, M.H., Raats, M.M. and Lucas, J.S. (2013). Beyond labelling: what strategies do nut allergic individuals employ to make food choices? A qualitative study. PLoS ONE, 8 (1), e55293

²⁶ Sommer, I., MacKenzie, H., Venter, C., Dean, T. (2012). Factors influencing food choices of food-allergic consumers: findings from focus groups. Allergy. 67: 1319-1322

Appendix

Table A1 Population with allergy, by age

		Presence of allergy		
		No allergy	Allergy	Total
		%	%	%
Age	16-24	15	13	14
	25-34	17	16	17
	35-44	16	16	16
	45-54	18	20	18
	55-64	14	14	14
	65+	21	21	21
Bases		12,332	604	12,936

Table A2 Population with allergy, by gender

		Presence of allergy		
		No allergy	Allergy	Total
		%	%	%
Gender	Male	49	40	49
	Female	51	60	51
Bases		12,341	604	12,945

significant difference at $p < 0.001$ level

Table A3 Population with allergy, by household size

		Presence of allergy		
		No allergy	Allergy	Total
		%	%	%
Household size	One	17	16	16
	Two	36	39	37
	Three	19	21	19
	Four	18	16	18
	Five or more	10	8	10
Bases		12,341	604	12,945

Table A4 Population with allergy, by presence of children in household

		Presence of allergy		
		No allergy	Allergy	Total
		%	%	%
Children under 16 in the household	Yes	27	29	27
	No	73	71	73
Bases		12,337	603	12,940

Table A5 Population with allergy, by general health

		Presence of allergy		
		No allergy	Allergy	Total
		%	%	%
General health	Good	78	70	78
	Fair	18	22	18
	Bad	4	7	4
Bases		9,390	456	9,846

significant difference at $p < 0.005$ level

Table A6 Population with allergy, by working status

		Presence of allergy		
		No allergy	Allergy	Total
		%	%	%
Working status	In work	56	57	56
	Retired	22	21	22
	Unemployed	5	5	5
	Other	17	17	17
Bases		12,336	604	12,940

Table A7 Population with allergy, by highest educational attainment

		Presence of allergy		
		No allergy	Allergy	Total
		%	%	%
Highest educational attainment	Degree	25	28	25
	Diploma/A levels/ Apprenticeship	33	38	33
	GCSE/O level	22	19	22
	Other qualification/None	20	15	20
Bases		9,352	456	9,808

Table A8 Population with allergy, by country of residence

		Presence of allergy		
		No allergy	Allergy	Total
		%	%	%
Country of Residence	England	56	64	56
	Wales	11	8	11
	Northern Ireland	19	13	19
	Scotland	14	15	14
Bases		12,341	604	12,945

Table A9 Population with allergy, by urban/rural location

		Presence of allergy		
		No allergy	Allergy	Total
		%	%	%
Urban or rural location	Urban	86	87	86
	Rural	14	13	14
Bases		12,340	604	12,944

Table A10 Age of earliest allergy onset

	Earliest age of allergy onset
	%
0-4	20
5-9	19
10-14	9
15-17	10
18-24	12
25-34	11
35-44	11
45-54	7
55+	2
Bases	102

Table A11 Proportion who reported washing their hands before starting to cook or prepare food

	Allergy	Intolerance	Neither
	%	%	%
Not always	14	14	12
Always	86	86	88
<i>Bases</i>	148	283	2,621

Table A12 Proportion who use different chopping boards for different foods

	Allergy	Intolerance	Neither
	%	%	%
Not always	47	45	52
Always	53	55	48
<i>Bases</i>	139	267	2,526

Table A13 Frequency of eating away from home

	Allergy	Intolerance	Neither
	%	%	%
At least once a week	40	46	43
Once or twice a month	45	40	40
Less than once a month	10	12	12
Never	6	2	5
It varies too much to say (spontaneous only)	0	-	-
<i>Bases</i>	148	286	2,681

- Less than 0.5

Table A14 Location for eating food outside the home (or from outside the home)

	Allergy	Intolerance	Neither
	%	%	%
Restaurant (not fast food)*	65	75	66
Take away food	53	52	55
Fast food restaurant/food to take away from a fast food restaurant**	34	27	37
Bar/pub	32	45	38
Café	60	63	53
Canteen	18	15	15
Hotel	10	20	15
Van/stall	4	6	7
None of these	9	3	8
Bases	148	286	2,681

*significant difference at $p=0.05$ level ** significant difference at $p<0.05$ level

Table A15 Most important information when choosing where to eat out

	Allergy	Intolerance	Neither
	%	%	%
Price	10	7	10
Recommendations or invitation from someone you know/good review	14	18	16
Nutritional information/healthy choices	10	12	9
Cleanliness and hygiene	48	43	42
Good service	2	4	9
Food for restricted diets such as Vegetarian, Halal, Kosher	10	8	5
None of these	0	0	0
Something else	2	5	2
All equally important (spontaneous only)	4	5	8
Don't know (spontaneous only)	0	0	-
Bases	125	247	2,167

- Less than 0.5%

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