Dietary habits of the Irish population: results from SLÁN

Annual Report 2003

SLÁN

National Nutrition Surveillance Centre

HEALTH PROMOTION UNIT

AN tAONAD COTHÚ SLÁINTE

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summary

The National Nutritional Surveillance Centre was established in 1992, in the Department of Health Promotion, National University of Ireland, Galway. In 2003 the Centre moved to the Department of Public Health Medicine and Epidemiology, University College Dublin. Its main functions are to provide nutrition-related information to relevant organizations in an accessible form and to monitor trends in health status in relation to food supply, availability and consumption.

The NNSC 1999 Annual Report examined trends in patterns of the Irish diet and how these related to other socioeconomic circumstances. Four years on, this information has enabled us to examine the changes which have occurred in the Irish diet over this time period.

The choice of method of collecting data on diet was by self administration of a semi-quantitative food frequency questionnaire. The advantages of this method are its ability to reach large numbers of people quickly over a wide geographical area, (thus increasing the power of the sample); low cost; ease of administration; lack of interviewer bias. However, it has limitations in precise assessment of intake.

The following are key findings from the survey (note these are based on self reported data only).

BODY MASS INDEX

42% of males and 27% of females were in the overweight category in the latest survey compared with 40% and 25% respectively in the 1998 survey. In addition 14% of males and 12% of females were in the obese category compared with 11% of males and 9% females in the previous survey. Respondents with none/primary/some secondary education reported being more overweight and obese than those with higher levels of education. The highest overall prevalence of obesity was observed among those with none/primary/some secondary education. The levels of obesity have increased in all social groupings since 1998 with respondents from the lower social classes continuing to show the highest level (17%). Respondents who are single or who have never married are less likely to be obese (11.0%) compared to those who are married/cohabiting (15%) or who are widowed, separated, divorced (14%).

FOOD PYRAMID

Cereals, Bread and Potatoes

34% of respondents reported eating the recommended 6 or more servings daily from the cereals, bread and potatoes shelf of the pyramid, while 66% reported consuming less.
This years results show an overall decrease in compliance with food pyramid recommendations for cereals, breads and potatoes compared with the previous SLÁN survey which showed a compliance rate of 40% for cereals, breads and potatoes. The lowest consumption of the recommended servings of cereals, breads and potatoes was among those in social classes 5 and 6 (30 %) with the highest among social classes 1 and 2 (36%).

Fruit and Vegetables

Overall there was a 7% increase (from 62% to 69%) in respondents reporting consuming the recommended 4 or more servings of fruit and vegetables every day.
Compliance levels among males have increased by almost 13% over the past four years. The lowest consumption of the recommended servings of fruit and vegetables was among those in social classes 3 and 4 (67 %) with the highest among females (70%).

summary

Milk, Cheese and Yoghurt

29% of the respondents reported eating the recommended 3 servings from the milk cheese and yogurt shelf of the pyramid, 33% consumed less than the recommended and 39% reported consuming more. In comparison to the previous SLÁN survey there was a 7% overall increase (from 22-29%) in those consuming 3 servings, almost a 20% decrease (52-33%) consuming less than 3 servings and the amount of respondents that consumed more than 3 servings increased from 26-39%.

Meat, Fish, Poultry and Alternatives

39% reported eating the recommended 2 servings from the meat, fish and poultry shelf of the pyramid, while 23% consumed less and 38% consumed more. In the previous SLÁN survey the figure consuming the recommended 2 servings was 38%, while 22% consumed less than 2 servings and 40% consumed more than 2 servings.

Top shelf

Only 17 % of respondents ate foods from this group sparingly i.e. 3 or less per day, while 83% consumed more. These results are very similar to those in the previous study where only 14% complied with recommendations and 86% didn't.

OTHER DIETARY HABITS

- The percentage of respondents consuming fried foods more than four times a week has decreased since the last report (11.8% in 1998 to 9.9% in 2002).
- The majority of respondents consumed full fat-fat milk but consumption of low-fat milk has increased from 23% to 29%.
- The majority of people cook their vegetables by boiling from cold water.
- Higher percentages of the younger age group grilled or fried their foods compared to other age groups.
- The number of people following vegetarian, vegan, diabetic and gluten free diets has not changed greatly since 1998.
- More than four times more women than men followed a weight reducing diet in both 1998 and 2002.
- The number of men following a low cholesterol diet has increased since 1998.
- Food labels were read by 66% of respondents which has increased by 10% in four years.

summary

CONCLUSION

The reported numbers of overweight respondents has increased by 2% in the past four years. Obesity levels in the total population have increased by almost 3% and this increase was observed across all sociodemographic groupings. While the number of respondents consuming the recommended number of fruit and vegetables has increased there continues to be a large proportion of the population who are consuming large amounts of high fat and high salt foods. Although women reported consuming fried foods less frequently then in the last survey, men are consuming this type of food more frequently.

introduction

One of the main purposes of the national health and lifestyle survey, SLÁN, was to produce baseline information for the on-going surveillance of health and lifestyle related behaviours in the Irish adult population. The sample was designed to be large enough to detect any variations of lifestyle behaviours in the adult population. In the summer of 1998, dietary habits were assessed as part of a larger questionnaire to evaluate health and lifestyle in the Irish population. Analyses are on going to investigate the relationship between the range of lifestyle behaviours, how participation in some behaviours relates to others and how they all impact individually and collectively on general health and quality of life. This report focuses on the data relating to food intake according to gender, age, education, social class, and living circumstances.

methodology

INSTRUMENT

A self-administered questionnaire, which included a semi-quantitative food frequency section, was used in the survey. An adapted version of the semi-quantitative food frequency questionnaire (SQFFQ) used in the British arm of the European Prospective Investigation of Cancer (EPIC) study (Riboli, 1997) was developed for use in SLÁN. The EPIC food frequency instrument has been validated extensively in several populations (Bingham et al., 1997) and used recently in a survey of diet and lifestyle of Irish women (NNSC, 1998) and validated using food diaries and PABA in volunteers of the National University of Ireland, Galway (Harrington, 1997 Thesis).

There are several reasons why semiquantitative food frequency questionnaires are the most popular version for this methodology.

1. Nutrients can be estimated from them but cannot be estimated from qualitative food frequency instruments without inputting portion sizes.
2. Semi quantitative food frequency questionnaires can be administered in 15-20 minutes while quantitative food frequency questionnaires usually require a lengthy interview using food models or pictures of food to assess portion size
3. Self-administered questionnaires can be mailed to sample persons and this permits large cohort studies with sample persons spread over a wide geographic area.
4. Because the questionnaires are precoded they can be optically scanned or processed relatively easily and cheaply (Sempos, 1992).

There were eight sections in the questionnaire, which covered general health (including self-reported height and weight), exercise, tobacco, alcohol, illegal substances, accidents, household details and dietary habits.

methodology

DIETARY HABIT SECTION

Questions were asked relating to special diets, food supplement use, food labelling, frequency of consumption of fried food, butter, low-fat / polyunsaturated spreads, vegetable oil and lard, methods used for cooking vegetables and whether people thought their diet could be healthier. The food frequency part of the questionnaire was designed to cover the whole diet and included 149 food items arranged into the main food groups consumed in the Irish diet. Subjects were asked to indicate their average use of each food item over the last year. Frequency of consumption of a medium serving or common household unit such as a slice or teaspoon was asked for each food and later converted to quantities using standard portion sizes. The frequency categories offered were 'never or less than once per month', 1-3 per month', 'once a week', '2-4 per week', '5-6 per week', 'once a day', '2-3 per day', '4-5 per day' and '6+ per day'.

The whole questionnaire took on average about one hour to complete. Research and Evaluation Services Ltd, Belfast carried out data entry

SUBJECTS

A series of estimates were made of a sample sufficient to detect significant differences across socioeconomic status of key lifestyle and dietary variables including smoking, dietary fat and fibre intake and exercise.

Table 1:	Summary of SLÁN Methodologies
Population	Adults aged 18+
Sampling frame	Electoral Register
Sample	Multistaged sample drawn by electoral division
Stratification	Proportionate distribution across each of the 26 counties, locality and gender
Survey Instrument	Self-completed questionnaire
Delivery/Reminders	Postal, letter reminder, fieldworker follow-up, telephone Helpline
Return	Freepost addressed envelope, fieldworker collection
Data Quality	Data were entered and validated according to present protocol

STATISTICAL METHODS

Chi square tests were used to test differences in proportions between categories. Outliers were removed from the nutrient and food quantity datasets based on standardised z scores for energy (kcal) of > 3.29 (Tabachnick & Fidell, 1996). Means, standard deviations and medians of food and nutrient intake were computed. The distribution of some foods and nutrients were skewed. For those which were not skewed, differences in intake of nutrients were tested using t-tests and one-way ANOVA's. Those food and nutrients, which showed skewed distribution, were tested using Mann-Whitney U or Kruskal Wallis statistics where appropriate. Data were analysed using SPSS™ version 11.0 (SPSS 2001).

respondent characteristics

Table 2:	Sociodemographic characteristics of respondents (percentages)					
		SLÁN 1998			SLÁN 2002	
	Total (6,539) N (%)	Males (n=2995) N (%)	Females (n=3424) N (%)	Total (n=5992) N (%)	Males (n=2448) N (%)	Females (n=3526) N (%)
Age Group (years)						
18-34	2375 (37.3)	1073 (36.1)	1300 (38.4)	1544 (25.8)	588 (24.0)	956 (27.1)
35-54	2358 (37.0)	1129 (38.0)	1225 (36.2)	2690 (44.9)	1069 (43.7)	1618 (45.9)
55+	1634 (25.7)	769 (25.9)	862 (25.5)	1754 (29.3)	788 (32.2)	951 (27.0)
Education						
ED 1	2836 (47.4)	1433 (51.2)	1396 (44.0)	2204 (40.7)	1088 (48.7)	1112 (35.1)
ED 2	1362 (22.8)	538 (19.2)	823 (26.0)	1344 (24.8)	415 (18.6)	928 (29.3)
ED 3	1781 (29.8)	829 (29.6)	952 (30.0)	1865 (34.5)	733 (32.8)	1132 (35.7)
Social Class						
SC 1-2	1796 (40.0)	744 (36.2)	1043 (43.5)	2309 (47.1)	824 (40.9)	1481 (51.5)
SC 3-4	1761 (39.2)	808 (39.3)	939 (39.2)	1780 (36.3)	745 (37.0)	1031 (35.8)
SC 5-6	938 (20.9)	502 (24.4)	416 (17.3)	815 (16.6)	446 (22.1)	366 (12.7)
Location						
Urban	2834 (48.0)	1337 (49.2)	1460 (47.2)	2550 (44.9)	962 (41.3)	1578 (47.2)
Rural	3076 (52.0)	1382 (50.8)	1630 (52.8)	3134 (55.1)	1366 (58.7)	1762 (52.8)
Marital Status						
Married	3206 (50.6)	1456 (48.6)	1746 (51.0)	3242 (54.7)	1308 (53.9)	1933 (55.3)
Cohabiting	233 (3.7)	105 (3.5)	127 (3.7)	227 (3.8)	86 (3.5)	141 (4.0)
Separated/ divorced	249 (3.9)	99 (3.3)	150 (4.4)	257 (4.3)	94 (3.9)	163 (4.7)
Widowed	463 (7.3)	113 (3.8)	349 (10.2)	435 (7.3)	95 (3.9)	340 (9.7)
Single/never married	2189 (34.5)	1180 (39.4)	1001 (29.2)	1767 (29.5)	844 (34.8)	920 (26.3)
Number in household						
Live alone	851 (13.5)	411 (14.1)	425 (12.8)	968 (16.2)	423 (17.3)	540 (15.3)
More than one person	5470 (86.5)	2504 (85.9)	2905 (87.2)	5024 (83.8)	2025 (82.7)	2986 (84.7)

Results from the dietary section of SLÁN will be presented in three ways:

1.   Percentage consuming the recommended number of servings from each shelf of the food pyramid
2.   Food quantities consumed
3.   Nutrient intake

For both 1998 and 2002 SLÁN datasets, all variables have been stratified by sex and then age standardised to the 2002 census population. This allows for valid comparisons over time between the two surveys and also adjusts appropriately for variations in age and sex distribution of both surveys relative to the general population. All overall results have therefore taken account of age and sex differences in responses. It should be noted that real changes in Demographic composition of the population since 1998 will affect the adjusted figures compared to previous reports.

ANTHROPOMETRIC MEASURES
Height, weight and body mass index

Respondents were asked to report their height (metres) and weight (kilograms). Figures 1 and 2 below show the mean weight and height of males and females across the various age groups. The mean weights, heights and BMIs were very similar to those reported in the previous SLÁN.

Mean weight decreases with age, as can be seen in Figure 1. There were obvious weight increases observed among the male middle-aged groups and also among young and middle aged women. Mean heights remained very similar for males and females (Figure 2). Finally BMI appears to have increased for both men and women. Obvious increases were observed among men between the ages of 35 and 65 and among women between the ages of 25 and 60 (Figure 3).

results

Figure 1:   Age distribution of mean body weight (kilograms)

Males

Females
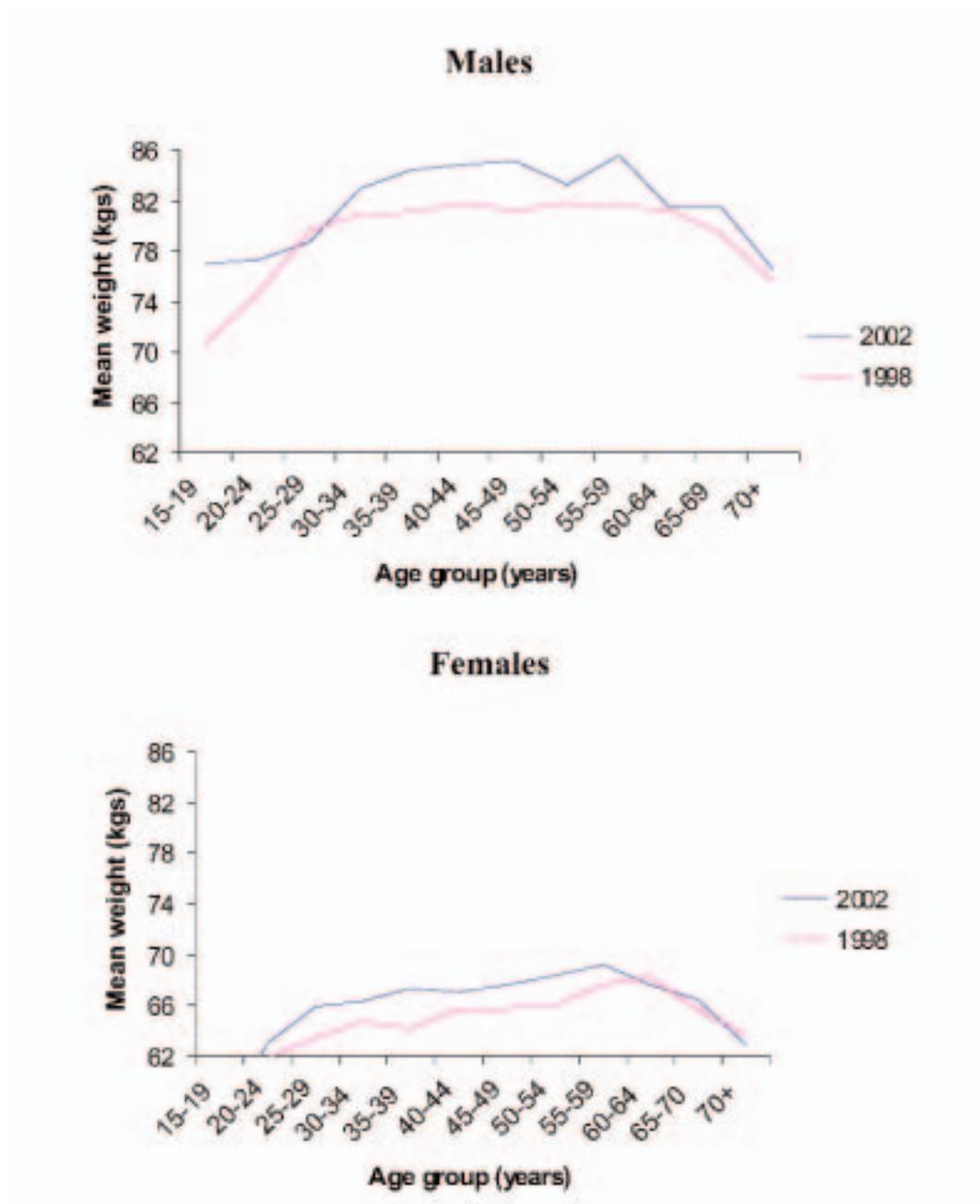
Figure 2:   **Age distribution of mean heights (metres)**
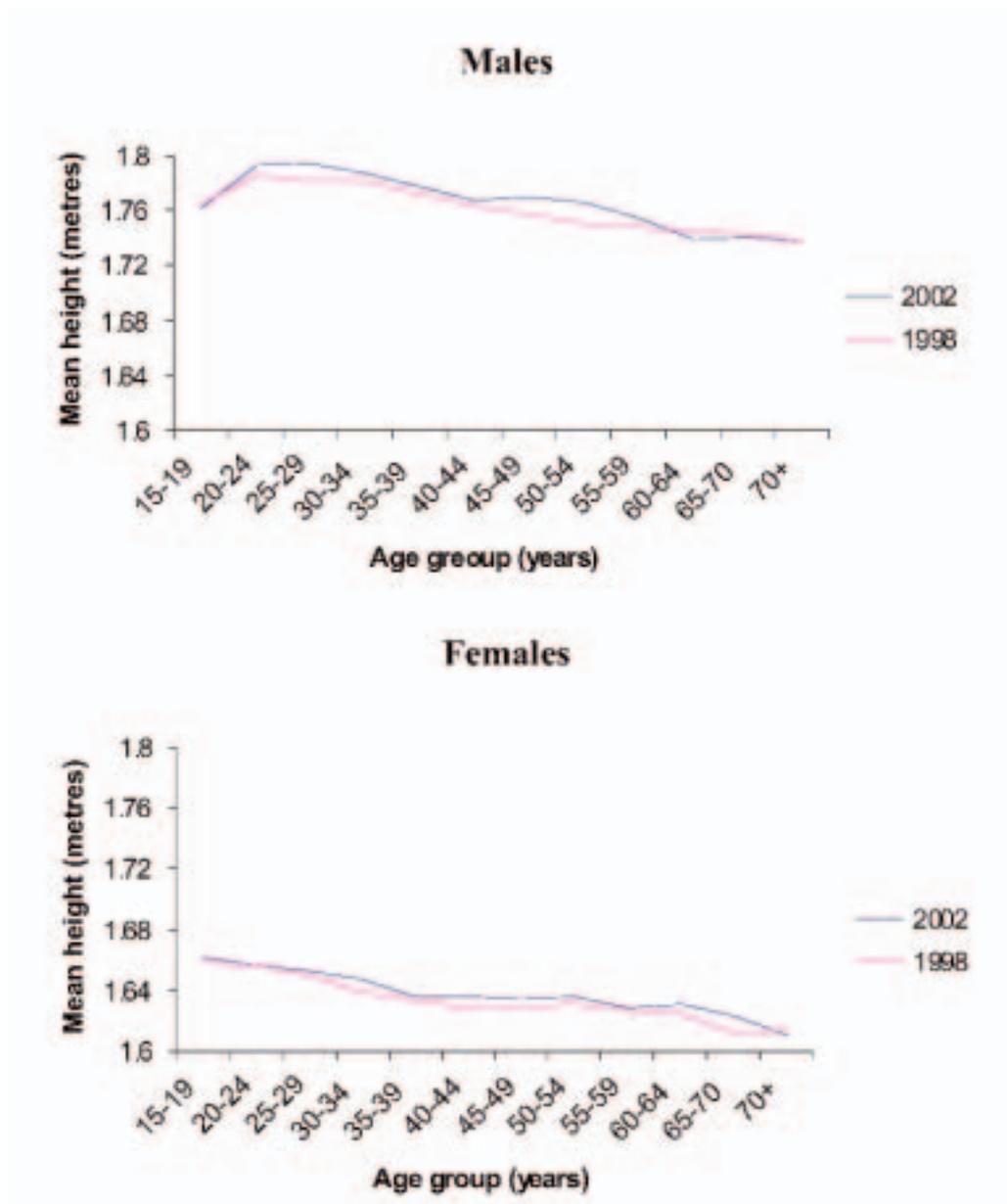
Figure 3: **Age distribution of mean body mass index**

Males

Females
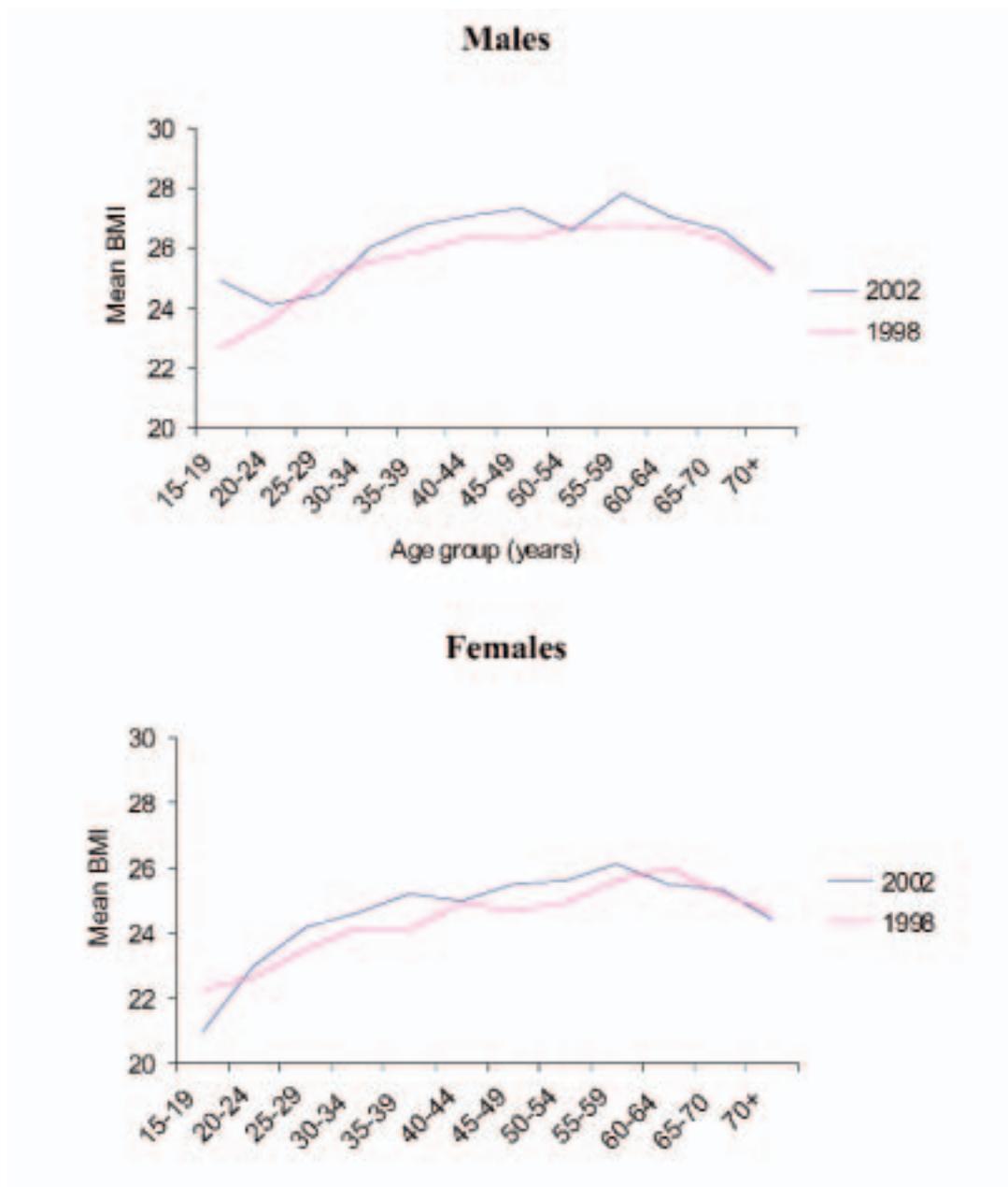
Table 3:	Sociodemographic distribution of body mass index levels					
	Normal (%)	SLÁN 1998 Overweight (%)	Obese (%)	Normal (%)	SLÁN 2002 Overweight (%)	Obese (%)
Gender						
Males	49.1	39.6	11.3	43.6	41.9	14.4
Female	65.8	24.9	9.3	61.7	26.5	11.8
Age Group (years)						
18-34	70.0	23.7	6.3	67.3	23.9	8.8
35-54	51.8	36.3	12.0	46.1	38.3	15.6
55+	50.0	36.7	13.3	48.0	37.1	14.9
Level of education						
ED 1	50.5	36.0	13.5	43.9	37.7	18.4
ED 2	61.7	29.2	9.2	53.8	33.1	13.1
ED 3	66.6	27.2	6.2	60.7	30.9	8.4
Social Class						
SC 1-2	62.3	29.5	8.2	56.3	33.3	10.5
SC 3-4	59.2	30.4	10.5	50.3	34.9	14.7
SC 5-6	54.9	34.2	10.9	47.6	35.5	17.0
Location						
Urban	60.0	30.3	9.7	54.3	32.1	13.5
Rural	57.0	32.7	10.2	50.7	35.5	13.8
Marital Status						
Married/ cohabiting	52.4	36.3	11.3	47.1	38.1	14.8
Widowed/ Separated/ Divorced	52.0	34.1	13.9	51.5	34.1	14.4
Single/ Never Married	68.9	23.7	7.4	62.6	26.3	11.1
Number in household						
Live alone	55.7	32.1	12.2	53.5	33.0	13.6
More than one person	58.4	31.3	10.0	51.8	34.5	13.7
OVERALL (%)	58.0	31.8	10.3	52.1	34.3	13.7

Table 3 shows the sociodemographic distribution of normal, overweight and obese respondents. Normal BMI is defined as a weight to height ratio of less than 25, Overweight is between 25 and 30 and Obese is a ratio of greater than or equal to 30. A higher percentage of females reported heights and weights relating to a normal body mass index whereas males were more likely to be obese. Those in the younger age groups were more likely to be a normal weight compared to those in the 35-54 age group who are more likely to be obese. Respondents with none/primary/some secondary education reported obesity levels that were more than twice that of those with tertiary level education. While obesity levels have increased in all social class groupings the levels in the lower social classes have increased more than those in social class 1-2. Single respondents or those who have never married have lower levels of obesity compared to those who are currently or who have been married.

Both males and females reported higher levels of obesity than those in the previous survey (Figure 4). Obesity levels have increased across all age groups (Figure 5). Males aged between 35 and 54 years reported higher obesity levels compared to other age groups.

Figure 4:   Age standardised obesity levels broken down by gender
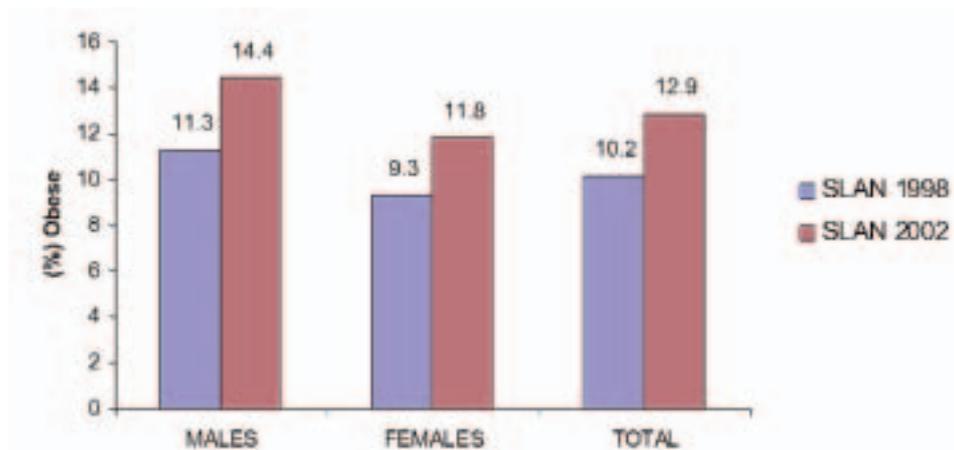
Figure 5: Age and gender distribution of obesity
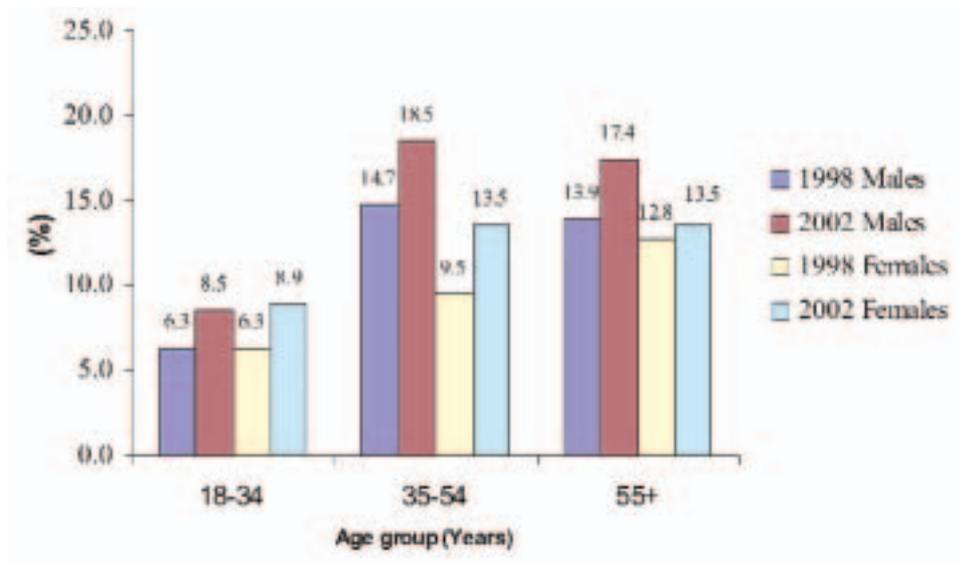
FOOD PYRAMID

In line with international dietary guidelines, the Irish food pyramid was developed (Figure 6) which recommended daily consumption of a number of servings from four of the five shelves. It is recommended that foodstuffs from the top shelf be eaten sparingly.

Figure 6:   **The Irish Food Pyramid**

DAILY RECOMMENDED NUMBER OF SERVINGS

Others
Up to 3 servings

Meat, fish, poultry &
Alternatives
2 Servings

Milk, cheese and yogurt
3 servings

Fruit and vegetables
4 plus servings

Cereals, breads and potatoes
6 plus servings
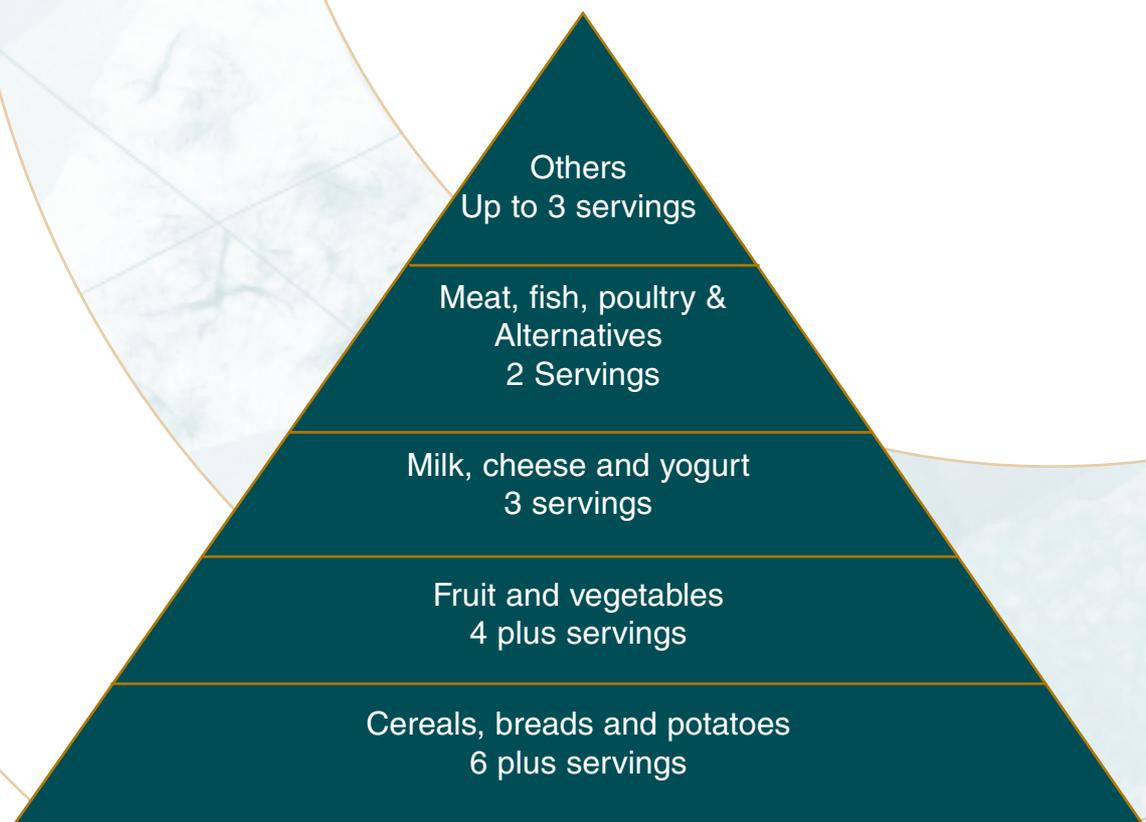
SOCIODEMOGRAPHIC VARIATIONS IN FOOD PYRAMID COMPLIANCE

The cereals, breads and potatoes shelf was the only shelf of the pyramid which showed a decrease in compliance with food pyramid recommendations over the past four years (Table 4). All of the other shelves exhibited moderate increases in compliance. The shelf with the highest rates of compliance was the fruit and vegetable shelf.

Table 4:
Percentage consuming the recommended number of daily servings age standardised.

	Male 1998 %	2002 %	Female 1998 %	2002 %	Total 1998 %	2002 %
Cereals, Breads & Potatoes	43	34.9	38.2	33.6	40.4	34
Fruit & Vegetables	53.7	67.2	68.4	70.1	61.5	68.9
Milk, Cheese & Other Dairy Products	23	27.6	21.9	29.9	22.4	29
Meat, Fish, Poultry & Alternatives	36.3	37.1	39.7	40.2	38.2	39
Top Shelf	13.6	16.9	14.2	17.5	14	17.4

Figure 7:   Percentage of all respondents consuming the recommended number of servings from each shelf of the food pyramid
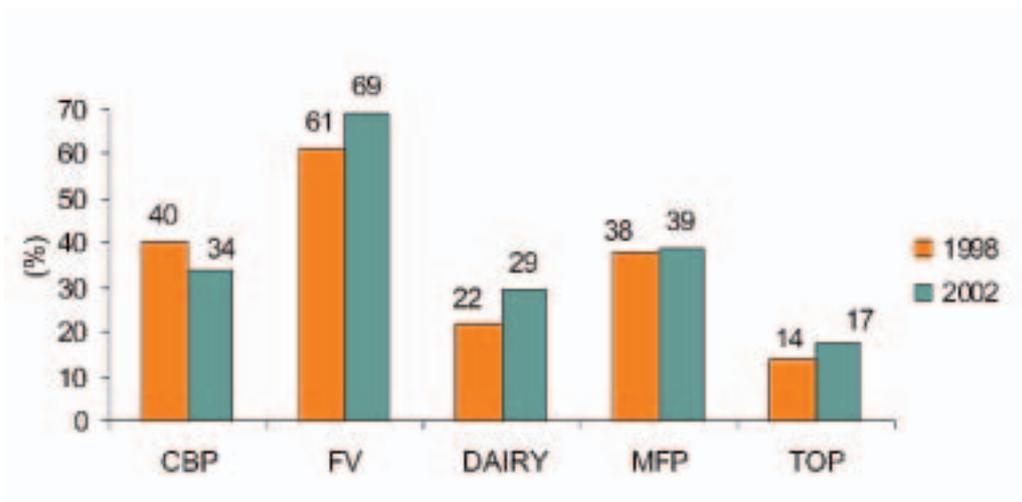
CBP: Cereals, breads and potatoes
FV: Fruit and vegetables
Dairy: Milk, cheese and other dairy products
MFP: Meat, fish, poultry & Alternatives
Top: Top shelf of pyramid high in sugar and fats

Very similar compliance levels with food pyramid recommendations were seen for both males and females (Figure 8).

Figure 8:
Percentage compliance with shelves of the pyramid broken down by gender.
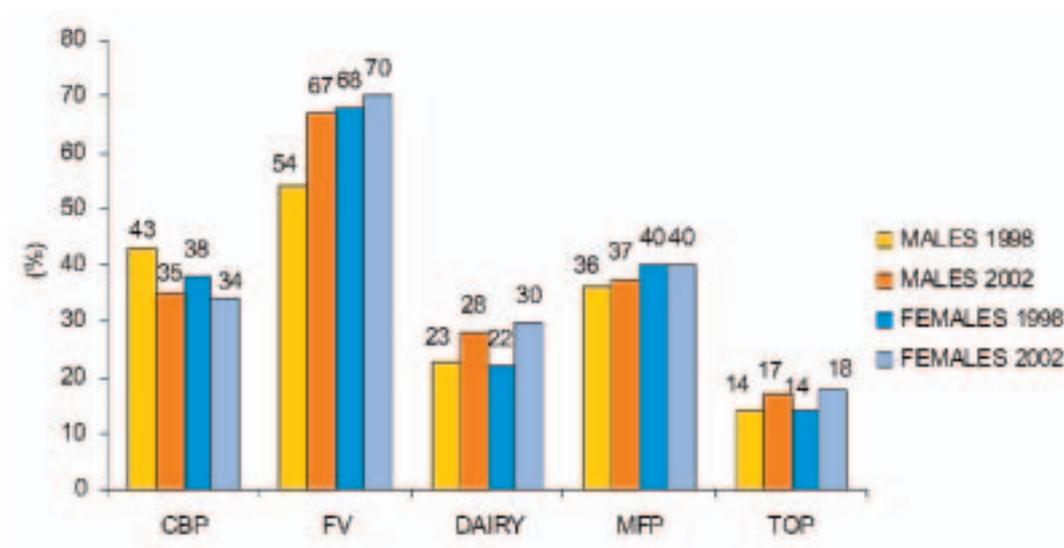
Cereals, breads and potatoes (six or more servings daily)

Cereals, breads and potatoes were the only shelf of the food pyramid which showed a decrease in compliance for the overall sample and across both genders compared with the previous SLÁN study. 66% of the population consumed less than the recommended six plus servings per day compared to 60% four years ago. Males reported a 8% decrease in compliance with recommendations and females reported a 4% decrease. Levels of compliance also decreased across the social class groupings however people from the higher social classes are significantly more likely to consume the recommended six plus servings daily(p<0.05).

Fruit and vegetables (four or more servings daily)

There was an 8% (from 61% to 69%) increase in those consuming the correct number of servings of fruit and vegetables. Just over 70% of women reported consuming four or more servings of fruit and vegetables daily which was significantly different from men (67%). Over the past four years consumption of fruit and vegegetables has remained similar among women but has increased by 13% among men (from 54% to 67%). Compliance with the recommended daily number of fruit and vegetables has increased across the sociodemographic groupings. Those in the higher social and educational classes reported a slight decrease from four years ago. Overall, 31% of the population consumed less than the recommended number of servings compared to 39% in the previous survey.

results

Milk, cheese, and other dairy products (three servings daily)

There was a 7% increase in consumption of the recommended 3 servings daily of dairy products (from 22% to 29%). This increase was also observed for those consuming more than the recommended servings (from 26% to 39%). The numbers consuming less than 3 servings has decreased (52% in 1998 to 33% in 2002). Increases were also observed across all sociodemographic groupings in the last four years. The number of respondents from lower social classes consuming three servings daily has increased by 12.4% since 1998. Respondents in the older age grouping were more likely to consume the recommend number of servings compared to other age groups (p<0.05). There was a substantial decrease in the percentage of respondents consuming less than 3 servings a day of dairy products. Overall, 33% of the population are consuming less than 3 servings daily compared with 52% four years ago.

Meat, fish, poultry and alternatives (two servings daily)

39% of respondents reported consuming the recommended 2 servings daily of meat, fish and poultry compared to a similar 38% in the previous survey. A slight increase was observed for those consuming less than the recommendations (from 21.7% to 23.1%). The numbers consuming more than 2 servings daily has decreased from 40% in 1998 to 38% in 2002. Compliance with the recommendations has increased in four years across most sociodemographic groupings. More females (40.5%) than males (38%) consumed the recommended two servings per day of meat, fish and poultry (p<0.01). Respondents in the 35-54 year age group were more likely to consume the recommended number of servings compared to other age groups (p<0.01). More people in higher educational and social classes, living in urban locations and living with others consumed the recommend number of servings of meat, fish and poultry (p<0.01). Overall, 23% of respondents consumed less than the recommended 2 servings per day compared to 22% in the previous study.

Top shelf, foods high in fat and sugar
(eat sparingly, up to three servings daily)

Consumption of foods from the top shelf of the pyramid increased by 3% (from 14% to 17%). Increases in compliance with the recommend servings were found across all sociodemographic groupings from the previous survey

results

FOOD PYRAMID, OVERALL SUMMARY

Figure 9: Percentage consuming the recommended number of servings for each shelf of the pyramid

Top Shelf
(up to 3 servings)
Total - 1031 (17.4%)
Males - 420 (16.9%)
Females - 611 (17.5%)

Meat, Fish, Poultry (2 servings)
Total - 2308 (39%)
Males - 908 (37.1%)
Females - 1400 (40.2%)

Milk, Cheese & Yogurt (3 servings)
Total - 1732 (39%)
Males - 679 (37.1%)
Females - 1053 (40.2%)

Fruit & Vegetables (4+ servings)
Total - 4005 (68.9%)
Males - 1601(67.2%)
Females - 2404 (70.2%)

Milk, Cheese & Yogurt (6+ servings)
Total - 1953 (34.0%)
Males - 814 (34.9%)
Females - 1139 (33.6%)
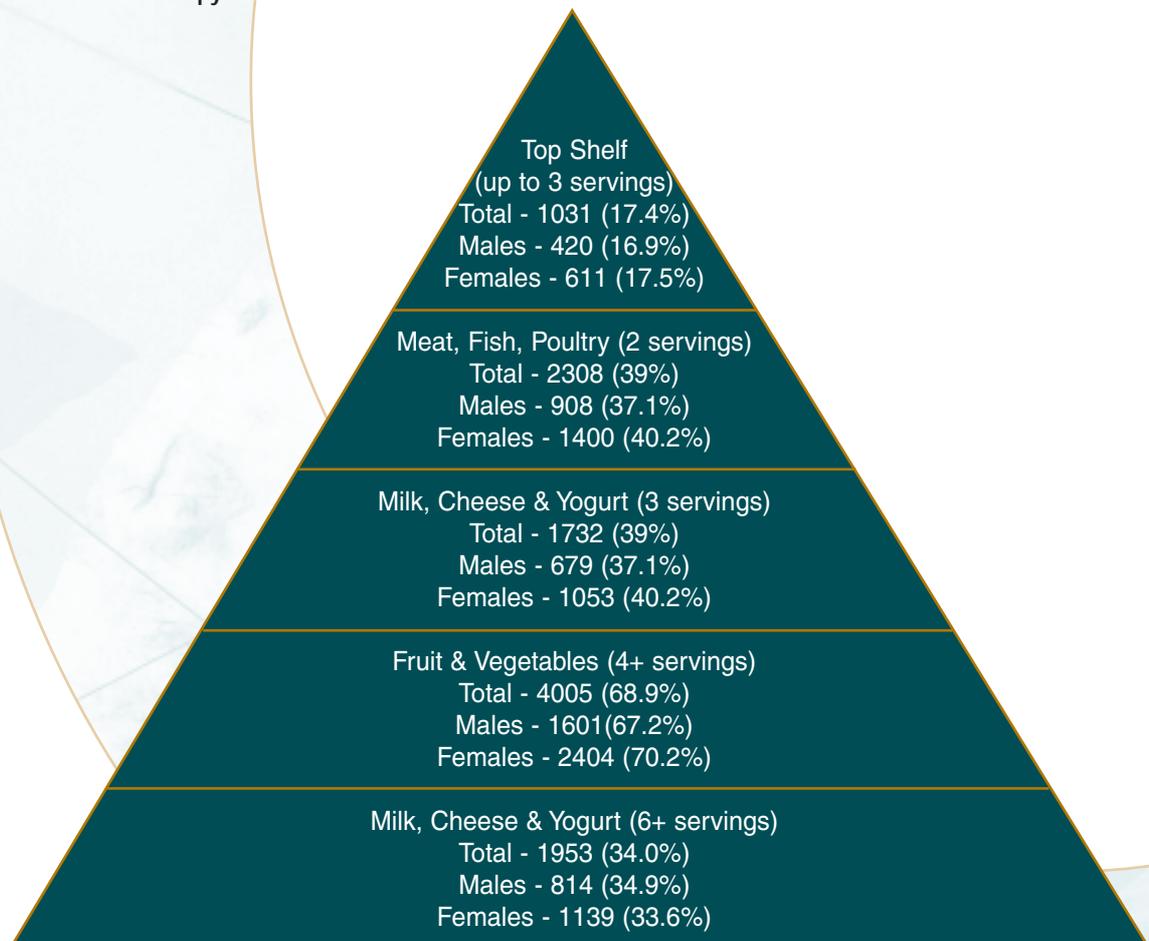
FOOD PYRAMID, GENDER AND AGE

Figure 10 below shows the distribution of those respondents consuming the recommended number of servings from each shelf in the food pyramid. Males in the 18-34 age group reported the lowest levels of compliance with all shelves of the food pyramid compared to other age groups. There was very little difference reported in compliance with the cereal, bread and potato shelf among women of all age groups. Those between the ages of 35-54 years reported the highest compliance with the Fruit and vegetable and the Meat, fish, poultry and alternatives shelves. Women aged 55 consumed the recommended number of servings from the dairy shelf while the younger aged females reported consuming the recommended servings from the Top shelf.

Figure 10: Gender and age group breakdown of respondents consuming the recommended number of servings from each shelf of the pyramid
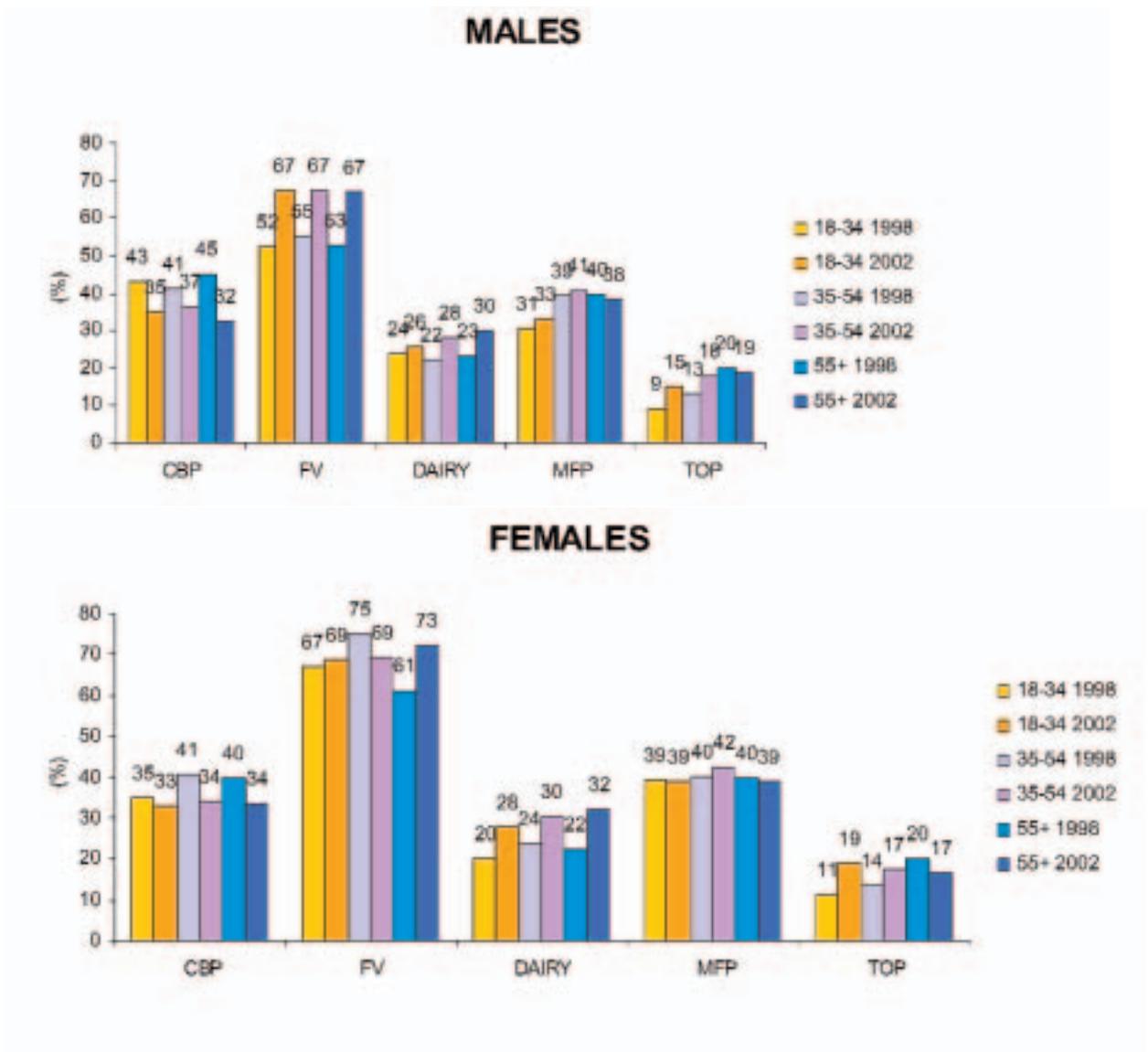
CBP: Cereals, bread and potatoes, 6+ servings per day recommended
FV: Fruit and vegetables, 4+ servings per day recommended
Dairy: Milk, cheese and other dairy products, 3 servings per day recommended
MFP: Meat, fish, poultry, and alternatives 2 servings per day recommended
Top: Foods high in fat and sugar, cut off of 3 servings per day used

FOOD PYRAMID, GENDER AND SOCIAL CLASS

As shown in Figure 11 below, significantly more males in the higher social class groupings consumed the recommended servings from the bottom shelf of the pyramid ($p<0.05$). Consumption of cereals, breads and potatoes is the only food grouping to have decreased across all social groups in four years. Since the last survey there was a 26% increase in the number of males from the lower social groups consuming the recommended number of fruit and vegetables. Significantly more females from social classes 1-2 consumed the recommended number of fruit and vegetables ($p<0.05$). However the number of women complying with the fruit and veg recommendations in classes 1-2 and 3-4 has decreased since 1998 (76.3 to 71.4 and 69.8 to 65.9 respectively). Respondents in social classes 1 and 2 were significantly more likely to consume three servings of meat, fish, poultry and alternatives ($p<0.01$).

Figure 11: Gender and social class breakdown of respondents consuming the recommended number of servings from each shelf of the pyramid

FEMALES

results
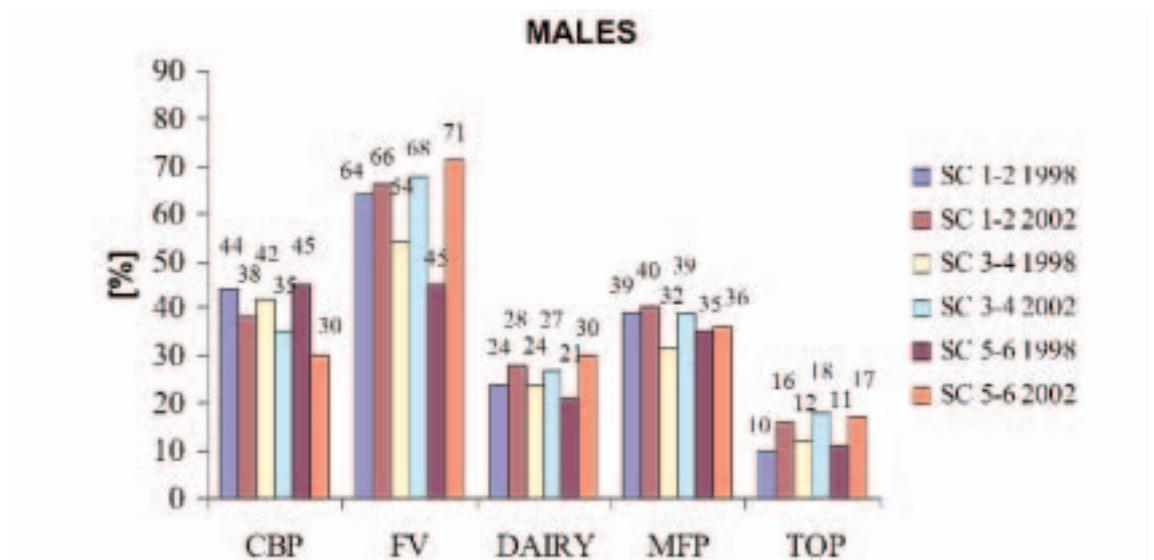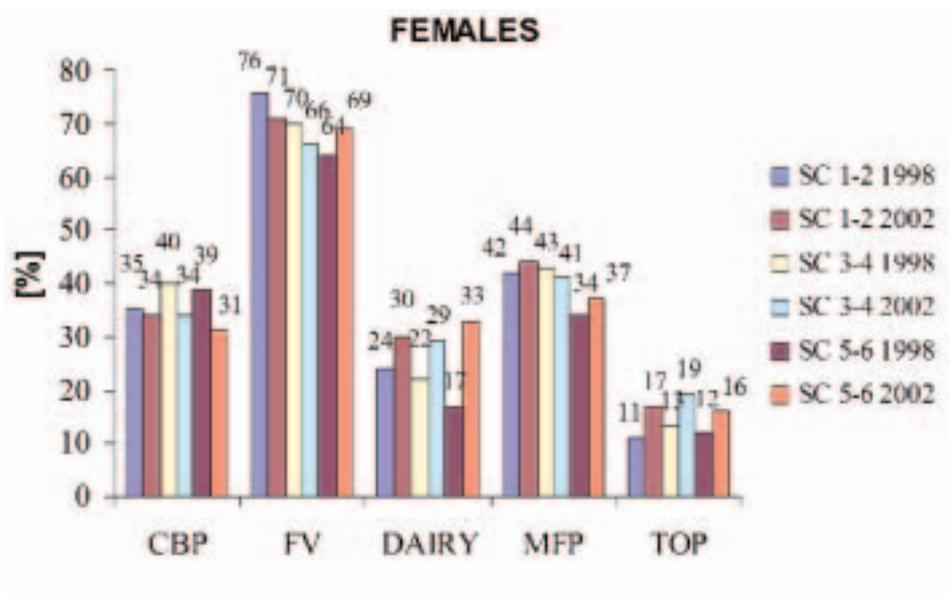
Other dietary habits

The vast majority of respondents (75.8%) thought their diet could be healthier. Significant variations were reported among the sociodemographic groupings. Those aged between 18-34 years (87.6%), those with completed tertiary education (81.4%) and those living with others (77.1%) were more likely to feel that their diet could be healthier.

ADDED FATS

Respondents were asked about their use of fats as spreads or in cooking. Appendix 4 lists the usage of the various fats across the sociodemographic strata in 2002. Overall use of butter/hard margarine has decreased since the last survey from 60% to 48% (Table 5). Males, those in older age groups, with lower education levels, from lower social classes and in rural areas consumed significantly more added fats daily than their counterparts. Figure 12 shows that both males and females are consuming less added butter/hard margarine than in the previous survey.

Table 5: Percentage consuming added fats age standardised.						
	Male 1998 %	2002 %	Female 1998 %	2002 %	Total 1998	2002 %
Butter/hard margarine	63.4	53.2	56.7	43.6	59.9	47.5
Low fat/polyunsaturated spread	51.9	46.3	60.1	53.8	56.4	50.7
Vegetable oil	17.6	19.2	18.6	17.8	18.1	18.2
Lard/dripping	7	4.1	5	2.4	6	3.5
Fried foods (+4/week)	17.4	16.7	7.0	5.4	11.8	9.9

Figure 12:   Daily use of butter/hard margarine by age group and gender
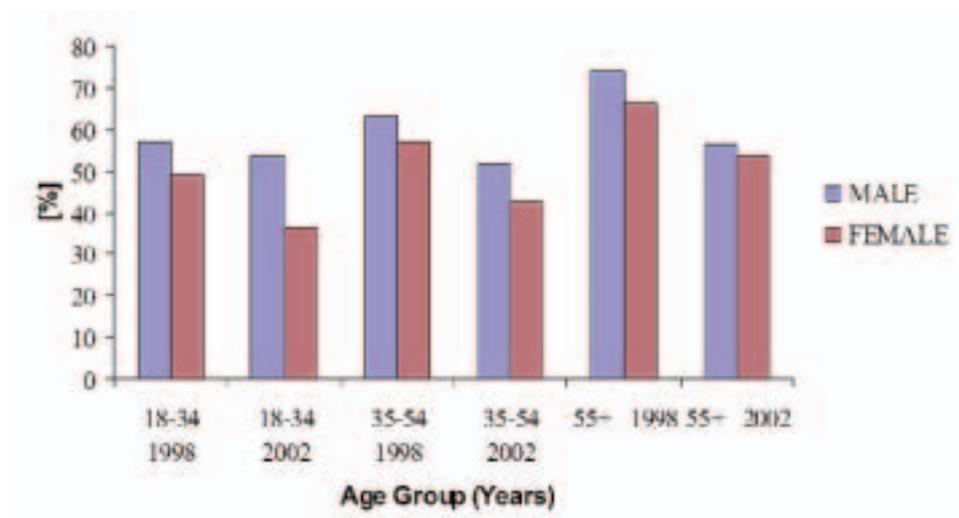
Daily use of low-fat/polyunsaturated spreads has also decreased since the last survey (59% to 50.7%). Significantly more females, those aged over 55 and living in an urban area reported consuming higher levels of this type of fat.

Figure 13:   Daily use of low fat/polyunsaturated spread by age group and gender
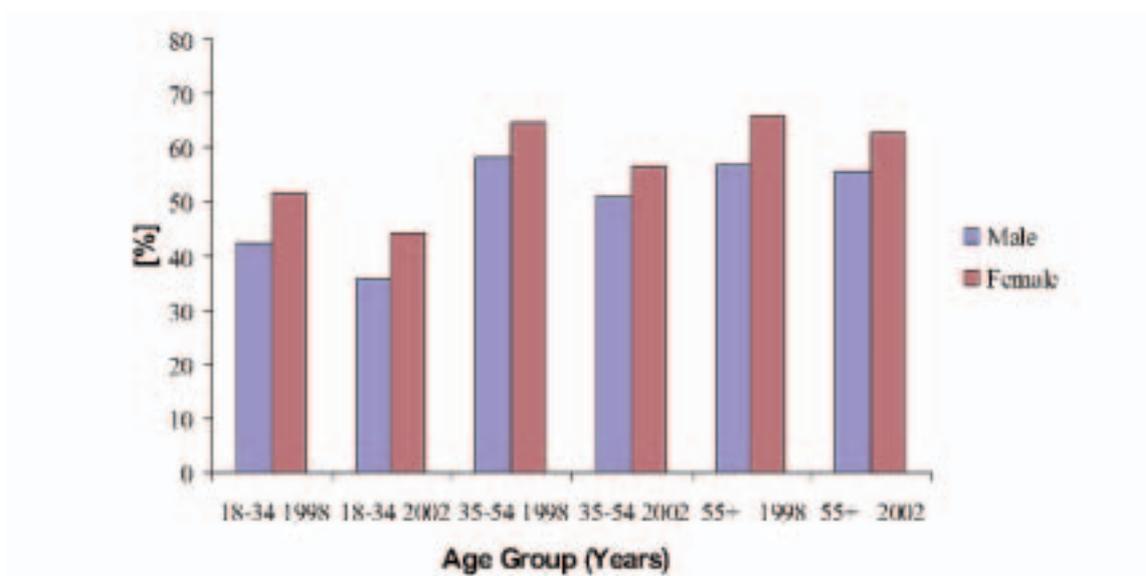
The use of vegetable oil has not changed over the past four years. 18.2 % of respondents used vegetable oil daily compared to 3.5% who used lard/dripping.

results

The consumption of lard/dripping has decreased since 1998 (6.0%) with males using significantly more than females. Older people, those with lower education levels, from lower social classes and living alone were more likely to use lard/dripping in their cooking whereas those from higher education and social class groupings, living in an urban areas were more likely to use vegetable oil ($p < 0.05$).

The percentage of respondents consuming fried foods more than four times a week has decreased since the last report (11.8% in 1998 to 9.9% in 2002). Men, those in the 18-34 years age group, those in social classes 5-6 continue to consume significantly more fried food compared to other strata. Those with none/primary and some secondary level education, living alone and in urban areas also reported this behaviour.

COOKING METHODS

The majority of people cooked their vegetables by boiling from cold water (47.8%). 20.5% immersed them in already boiling water and a further 11.9% steamed the vegetables. The percentage of respondents that grill (from 3.4% to 1%) and boil their vegetables (54.6% to 47.8%) from cold water has decreased since the previous SLÁN survey. Also higher percentages of males than females fry their vegetables (1.4% compared with 0.3%).

Table 6:	Cooking methods age standardised.					
	Male 1998 %	2002 %	Female 1998 %	2002 %	Total 1998 %	2002 %
Immersed in boiling water	15	17.1	21.6	22.8	18.6	20.5
Boiled from cold water	59.2	55.3	50.5	42.7	54.6	47.8
Grilled	4	1.5	3	0.7	3.4	1
Fried	1.7	1.4	0.7	0.3	1.1	0.7
Sautéed then casseroled	-	0.2	-	0.4	-	0.3
Microwaved	2.3	3.3	3.2	3.3	2.8	3.3
Steamed	6.7	9.4	9.6	137	8.2	11.9
Sautéed	0.5	2	0.4	3	0.5	2.7
Other	-	9.8	-	13	-	11.7

Higher percentages of the younger age group grilled or fried their foods compared to other age groups. Individuals with third level education and from higher social classes were more likely to report immersing the vegetables in boiling water, whereas more of those with less education and lower social class groupings boiled the vegetables from cold water. Respondents from urban areas are more likely to use a microwave to cook their vegetables.

results

DIETING

Overall, 33.6% of respondents reported being on some sort of diet compared to 30.2% in the previous study. The most common diets were reported as being weight reducing (14.0%), low cholesterol (9.3%), vegetarian (3.7%) and diabetic (2.4%). There was an overall increase since 1998 in the percentage of those following all of the special diets The diabetes management plan showed a marginal increase (2.2% in 1998 to 2.4% in 2002). More than four times more women than men followed a weight reducing diet in both 1998 (5.7% of men compared with 18.5% of women) and 2002 (5.0% of men and 19.8% of women). There was also a 2.2% increase in men following a low cholesterol diet between 1998 and 2002.

Table 7: Dieting patterns age standardised						
	Male 1998 %	2002 %	Female 1998	2002 %	Total 1998	2002 %
Eat Healthier	71	77	72.6	74.8	71.8	75.8
Vegetarian	2	1.8	4.3	4.8	3.4	3.7
Vegan	0.2	0.2	0.3	0.2	0.2	0.2
Diabetic	2.4	2.8	1.9	2.1	2.2	2.4
Gluten Free	0.7	1.1	1	1.8	0.9	1.5
Weight Reducing	5.7	5	18.2	19.8	12.5	14
Low Cholesterol	7.2	9.6	9.4	9.1	8.3	9.3
Other	2.5	2.3	2.9	2.6	2.8	2.5
No Diet	82.8	69.3	68.6	58.7	75	65.2
Food Supplements	-	42.1	-	59.5	-	52.9
Vitamins	37.5	-	54.5	-	45.5	-
Folic acid	1.4	-	22.4	-	12.8	-
Folic Acid or Vitamins	-	5.8	-	11.7	-	9.5

The only type of diet where there was an obvious age gradient observed was for those following a low cholesterol diet. Among males and females in 1998 and 2002 the percentage of respondents following a low cholesterol diet increased linearly with age Males 2002, 3.4% for 18-34 year olds versus 10.16 and 18.0%

for 35-54 and 55 years and over respectively; Females 2002 2.7% for 18 –34 year olds versus 8.1% and 18.3% for 35-54 and 55 years and over. This is not surprising as age and a high cholesterol diet are major risk factors for the development of coronary heart disease. Furthermore greater amounts of males and females in the ED 1 category reported following low cholesterol diets compared to those with higher levels of education for both males (13.7% ED 1 versus 8.5% for completed second level and 8.6% for completed tertiary) and females (13.3% for ED 1 versus 7.9% and 5.6%).

Respondents from SC 1-2 were significantly more likely to follow a vegetarian diet than other groupings (4.5%, p<0.05). The diabetes management plan and low cholesterol diets were more likely to be reported by those from lower educational and social class groupings and those living alone.

FOOD LABELLING

Overall the numbers reading food labels has increased from 56% in 1998 to 66% in 2002 (Table 8).

Table 8:   Food labelling habits age standardised.

	Male 1998 %	2002 %	Female 1998 %	2002 %	Total 1998 %	2002 %
Read food labels	43.3	51.9	67.4	74.7	56.2	65.6
Ingredients	74	68.1	65.8	63.8	68.5	65
Nutrients	56.4	53.1	64.6	64.2	61.8	60.7
Calorific Value	22.1	21.8	41	40.7	35.2	35.1
Weight of food	15.5	13.8	13	14.6	13.9	14.3
Additives	43.2	40.3	46.4	47.4	45.3	44.9
Serving Size	20	15.6	17.6	14.7	18.5	15.1
Instructions for competitions	12.8	9.7	12.8	9.7	12.7	9.6

results

Figure 14 below show that the main information looked for by respondents is that of ingredients, nutrients and additives. Women and those between the ages of 35-54 are significantly more likely to look at nutrients and additives then men and those in other age groups. Young women, in particular, look at the calorie information. Respondents from higher educational and social class groupings are significantly more likely to look at all the information on food labels with the exception of instructions for competitions. People living in an urban area and living with others are more likely to look at the nutrient and calorific labelling.

Figure 14:   Information looked for on food labels 2002
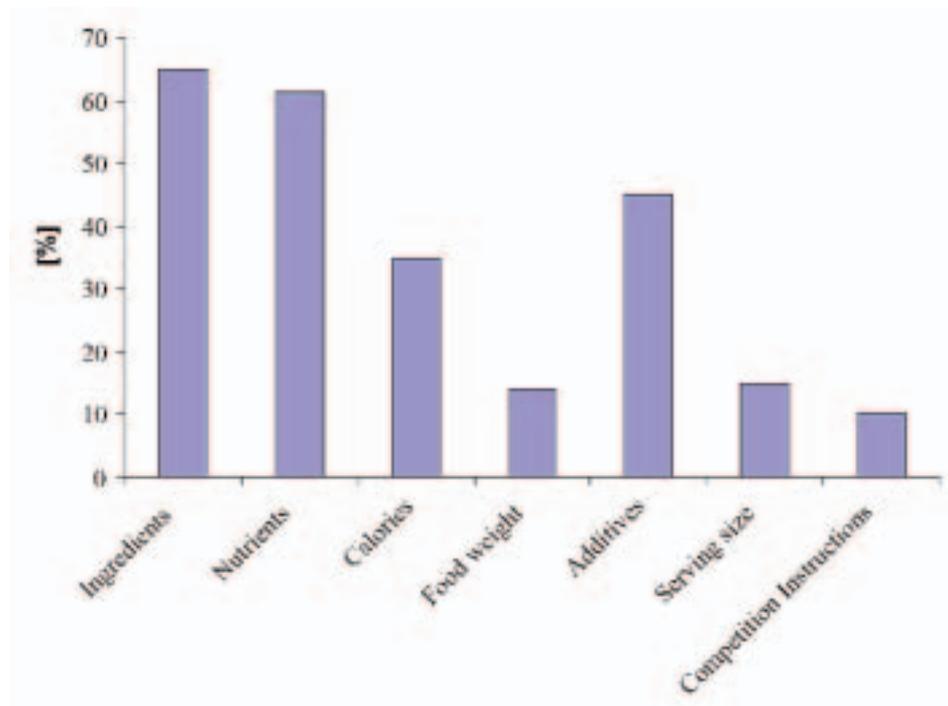
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Appendix 1: 2002Sociodemographic profile of respondents consuming the recommended number of servings from each shelf in the food pyramid

	Gender		Age group (years)			Education			Social Class			Location		Number in Household	
	Male	Female	18-34	35-54	55+	None/primary/Some secondary	Completed secondary	Completed tertiary	1-2	3-4	5-6	Urban	Rural	1	>1
	n=2448 %	n=3526 %	n=1544 %	n=2687 %	n=1739 %	n=2204 %	n=1344 %	n=1865 %	n=2309 %	n=1768 %	n=815 %	n=2550 %	n=3134 %	n=968 %	n=5024 %
Cereals, Breads & Potatoes	34.8	33.7	33.9	34.9	33	34.1	34.6	34.5	35.5*	34.5	30.3	33.8	34.2	34.3	34.1
Fruit & Vegetables	67.2	70*	68.3	68.6	70.1	69.5	68.9	68.6	69.3	66.6	69.8	68.8	69.5	68.7	69
Milk Cheese & Other Dairy Products	28	30.1	26.8	29.5	31.2*	28.3	29.4	30	29.6	28.1	31.3	27.8	30.4	31.7	28.8
Meat Fish & Poultry	38	40.5**	36.7	41.6**	38.6	35.9	39.3	44.3**	42.4**	40.2	36.3	41.4**	37.4	36.8	40
Top Shelf	16.9	17.5	17.2	17.4	17.6	17.4	17.3	17.6	16.6	18.6	16.8	17.2	17.6	16.8	17.5

*p<0.05, **p<0.01: significant difference between sociodemographic categories within food shelf

	Age group (years)			Education			Social Class			Location		Number in Household	
	18-34	35-54	55+	None/prim ary/some secondary	Completed secondary	Completed tertiary	1-2	3-4	5-6	Urban	Rural	1	>1
	n=588 %	n=1069 %	n=788 %	n=1088 %	n=415 %	n=733 %	n=824 %	n=745 %	n=446 %	n=962 %	n=1366 %	n=423 %	n=2025 %
Cereals, Breads & Potatoes	34.9	36.5	32.4	35.1	35.4	35.6	37.5*	34.8	29.8	34.6	35	34	35
Fruit & Vegetables	67.2	67.3	67	68.4	67.3	66.1	65.6	67.6	71.2	67	68.4	65.9	67.5
Milk, Cheese & Other Dairy Products	25.6	28.2	29.8	27.2	27.2	29.8	28	26.8	29.5	25.9	29.6	31.2	27.4
Meat, Fish & Poultry	32.8	40.7	38.4	37	35.7	42.2*	39.8	39.2	35.6	41.4*	35.5	36.6	38.3
Top Shelf	14.9	17.7	18.7	17.7	17.2	17.5	16.2	17.8	17.1	17.8	17.2	18.9	17

Appendix 2: 2002 % Males consuming recommended number of servings from each shelf in the food pyramid by sociodemographic variable

*p<0.05, **p<0.01: significant difference between sociodemographic categories within food shelf

appendix 3

appendices

Appendix 3: 2002 % Females consuming recommended number of servings from each shelf in the food pyramid by sociodemographic variable

| | Age group (years) | | | Education | | | Social Class | | | Location | | Number in Household | |
| | 18-34 | 35-54 | 55+ | None/prim ary/some secondary | Completed secondary | Completed tertiary | 1-2 | 3-4 | 5-6 | Urban | Rural | 1 | >1 |
	n=956 %	n=1618 %	n=951 %	n=1112 %	n=928 %	n=1132 %	n=1481 %	n=1031 %	n=366 %	n=1578 %	n=1762 %	n=540 %	n=2986 %
Cereals, Breads & Potatoes	33.2	34	33.6	33.3	34.2	33.9	34.4	34.2	30.8	33.6	33.6	34.6	33.5
Fruit & Vegetables	69	69.4	72.5	70.7	69.6	70.3	71.4*	65.9	68.5	69.9	70.3	70.9	70
Milk, Cheese & Other Dairy Products	27.5	30.3	32.3	29.4	30.4	30.2	30.3	29.1	33.2	45.5	54.5	32	29.8
Meat, Fish & Poultry	39.1	42.3	38.9	34.9	41	45.7**	43.8**	41	37.4	41.7**	39	37	41.2
Top Shelf	18.6	17.3	16.5	17.1	17.4	17.7	16.8	19.1	15.9	16.8	17.9	15.4	17.8

*p<0.05, **p<0.01: significant difference between sociodemographic categories within food shelf

Appendix 4: Sociodemographic profile of respondents who consume added fats every or most days

| | Gender | | Age group (years) | | | Education | | | Social Class | | | Location | | Number in Household | |
| | Male | Female | 18-34 | 35-54 | 55+ | None/primary/some secondary | Completed secondary | Completed tertiary | 1-2 | 3-4 | 5-6 | Urban | Rural | 1 | >1 |
	n=2448 %	n=3526 %	n=1544 %	n=2690 %	n=1754 %	n=2200 %	n= 1344 %	n=1865 %	n=2309 %	n=1780 %	n=815 %	n=2550 %	n=3134 %	n=968 %	n=5024 %
Butter/hard margarine	53.6**	43.3	43.2	46.3	54.8**	57.5**	45.4	39.4	42.1	48	52.6**	45.6	49.3**	51.4	46.9
Low fat/polyunsaturated spread	48.1	54.3**	41	54	59.4**	52.1	54.1	49.7	51.4	53.4	49.8	53.9**	49.5	53.6	51.4
Vegetable oil	19.2	18.1	15.2	19.2	21**	16.2	14.7	22.6**	20.5**	14.7	16.7	19.6**	17.3	21.1**	18
Lard/dripping	4.9**	2.3	3.7	2.9	4.1**	5**	3.5	1.7	2	3.2	5.4**	3	3.7	5.1*	3.1
Fried foods	15.6**	5	13.4**	8.2	7.3	11.3**	7.9	7.6	7.2	9.3	15.1**	10.6**	7.6	9.2	9.3

*p<0.05, **p<0.01: significant difference between sociodemographic categories

appendices

Appendix 5: Percentage of male respondents consuming added fats every/most days

	Age group (years)			Education			Social Class			Location		Number in Household	
	18-34	35-54	55+	None/prim ary/some secondary	Completed secondary	Completed tertiary	1-2	3-4	5-6	Urban	Rural	1	>1
	n=588 %	n=1069 %	n=788 %	n=1088 %	n=415 %	n=733 %	n=824 %	n=745 %	n=446 %	n=962 %	n=1366 %	n=423 %	n=2025 %
Butter/hard margarine	53.8	51.7	56.3*	60**	55.2	45	48.2	56.6*	53.8	49.6	56.7**	54.7	53.4
Low fat/ poly unsaturated spread	35.6	50.7	55.7**	48.4	50.4	46	49.5	47.8	48.3	51.7**	44.4	49.8	47.8
Vegetable oil	19.4	18.8	19.6	15.4	14.2	24.7**	22.3*	16.3	15.4	20.6**	17.9	21.8	18.7
Lard/ dripping	6.4*	4.1	4.5	6.3	6.6**	2.1	3.7	4.1	7.4**	4	5.5	8.4	4.3
Fried foods	22**	14.8	11.6	16.3*	14.7	13.6	13.3	15.7	21.5**	16.9	13.5	16*	15.5

*p<0.05, **p<0.01: significant difference between sociodemographic categories

Appendix 6 : Percentage of female respondents consuming added fats every/most days

	Age group (years)			Education			Social Class			Location		Number in Household	
	18-34	35-54	55+	None/prim ary/some secondary	Completed secondary	Completed tertiary	1-2	3-4	5-6	Urban	Rural	1	>1
	n=956 %	n=1618 %	n=951 %	n=1112 %	n=928 %	n=1132 %	n=1481 %	n=1031 %	n=366 %	n=1578 %	n=1762 %	n=540 %	n=2986 %
Butter/hard margarine	36.5	42.8	53.6**	55**	40.7	35.9	38.8	41.7	51.4**	43	43.7	48.4	42.6
Low fat/ poly unsaturated spread	44.3	56.3	62.8**	55.7	55.7	52.1	52.6	57.3	52.1	55.4	53.4	56.4	54
Vegetable oil	12.6	19.5	22.4**	17.1	14.9	21.2*	19.6**	13.6	18.3	19.0*	16.9	20.9	17.6
Lard/ dripping	2	2	3.5	3.5**	2	1.4	1	2.5	2.8**	2.3	2.2	2.5	2.3
Fried foods	8.1**	3.9	3.7	6.4**	4.8	3.8	3.9	4.7	7**	5.7**	4.1	3.7	5.2

*p<0.05, **p<0.01: significant difference between sociodemographic categories

appendix 7

appendices

Appendix 7: Sociodemographic profile of respondents' cooking methods

	Gender** Male	Female	Age group (years)** 18-34	35-54	55+	Education** None/prim ary/some secondary	Completed secondary	Completed tertiary	Social Class** 1-2	3-4	5-6	Location** Urban	Rural	Number in Household** 1	>1
	n=2448 %	n=3526 %	n=1544 %	n=2690 %	n=1754 %	n=2204 %	n=1344 %	n=1865 %	n=2309 %	n=1780 %	n=815 %	n=2550 %	n=3134 %	n=968 %	n=502 %
Immersed in boiling water	17.5	23.4	18.1	23	20.5	18.5	20.6	25.2	24.3	20.9	17.1	20.2	22	21.5	20.9
Boiled from cold water	55.5	42.3	47.9	45.6	50.5	57.2	48	36.9	38.7	49.9	56.9	45.6	49.2	48.6	47.5
Grilled	1.3	0.7	1.3	0.8	0.8	1.2	0.8	0.8	0.6	0.8	1.1	1	0.8	1.9	0.7
Fried	1.2	0.3	1.3	0.3	0.4	0.5	0.5	0.9	0.6	0.6	0.8	0.7	0.6	1.2	0.5
Sautéed then casseroled	0.2	0.4	0.3	0.3	0.2	0	0.3	0.6	0.5	0.2	0.3	0.2	0.3	0.1	0.4
Microwaved	3.5	3.3	3	3.2	4	1.9	3.4	5.2	4.6	2.7	2.2	4.9	2.3	4.7	3.1
Steamed	9.5	13.9	10.9	12.9	12.1	11.1	13.8	12.5	13.8	12.4	10.4	12.6	11.5	9	12.7
Sautéed	1.8	2.7	4.4	2.1	1	0.7	1.5	4.9	3.9	1.5	1.3	2.9	2	2	2
Other	9.6	13	12.8	11.7	10.3	9	11.1	13	12.9	11.1	9.9	11.8	11.4	10.9	11.7

*p<0.05, **p<0.01: significant difference between sociodemographic categories

Appendix 8: Male respondents' cooking methods

	Age group (years)**			Education**			Social Class**			Location**		Number in Household*	
	18-34	35-54	55+	None/prim ary/some secondary	Completed secondary	Completed tertiary	1-2	3-4	5-6	Urban	Rural	1	>1
	n=588 %	n=1069 %	n=788 %	n=1088 %	n=415 %	n=733 %	n=824 %	n=745 %	n=446 %	n=962 %	n=1366 %	n=423 %	n=2025 %
Immersed in boiling water	15.2	19.7	16.1	16.2	14.8	21	20.4	17.4	14.2	16.8	18.2	13.5	18.3
Boiled from cold water	54.7	54	58.2	62.9	53.9	45.9	47.7	57.6	61.6	53.5	57.3	57.1	55.1
Grilled	2	1.4	0.8	1.7	1.8	0.7	0.6	1.3	1.7	1.5	1.1	2	1.2
Fried	2.7	0.6	0.8	0.9	1	1.6	1.4	1	0.9	1.5	0.9	2	1
Sautéed then casseroled	0	0.2	0.3	0	0	0.4	0.3	0.1	0	0.1	0.2	0	0.2
Microwaved	2.5	3.2	4.6	2	4	6.2	4.8	3.1	2.4	5.5	2.2	5.3	3.1
Steamed	8.8	10.5	8.7	7.9	12.8	10.4	11.2	10.1	7.5	9.1	9.2	7	10
Sautéed	3	1.8	1	0.3	1.8	4.3	3.3	1.1	1.2	2.3	1.5	2	1.8
Other	11.1	8.7	9.5	8.2	10	9.4	10.4	8.3	10.6	9.7	9.5	11	9.3

*p<0.05, **p<0.01: significant difference between sociodemographic categories

Appendix 9: Female respondents' cooking methods

	Age group (years)**			Education**			Social Class**			Location**		Number in Household**	
	18-34	35-54	55+	None/prim ary/some secondary	Completed secondary	Complete tertiary	1-2	3-4	5-6	Urban	Rural	1	>1
	n=956 %	n=1618 %	n=951 %	n=1112 %	n=928 %	n=1132 %	n=1481 %	n=1031 %	n=366 %	n=1578 %	n=1762 %	n=540 %	n=2986 %
Immersed in boiling water	19.7	25.1	24	20.7	23.1	27.8	26.4	23.3	20.6	22.4	24.8	27.4	22.6
Boiled from cold water	43.9	40.2	44.2	51.7	45.5	31.1	33.6	44.4	51.3	40.6	43.1	42.1	42.3
Grilled	0.9	0.4	0.9	0.7	0.4	0.8	0.6	0.5	0.6	0.7	0.5	1.9	0.4
Fried	0.5	0.2	0.1	0.1	0.2	0.5	0.2	0.3	0.6	0.2	0.3	0.6	0.2
Sautéed then casseroled	0.5	0.4	0.2	0.1	0.4	0.7	0.7	0.2	0.6	0.3	0.4	0.2	0.4
Microwaved	3.2	3.2	3.6	1.8	3.1	4.6	4.5	2.4	1.9	4.5	2.3	4.3	3.1
Steamed	12.2	14.4	14.9	14.1	14.3	13.8	15.3	14	13.9	14.7	13.3	10.6	14.6
Sautéed	5.2	2.3	1.1	1	1.3	5.3	4.3	1.8	1.4	3.3	2.3	2.1	2.9
Other	13.8	13.7	11	9.8	11.3	15.2	14.3	13.1	9.2	13.2	12.9	10.9	13.4

*p<0.05, **p<0.01: significant difference between sociodemographic categories

Appendix 10: Sociodemographic profile of respondents' dieting patterns

	Gender		Age group (years)			Education			Social Class			Location		Number in Household	
	Male	Female	18-34	35-54	55+	None/prim ary/some secondary	Completed secondary	Completed tertiary	1-2	3-4	5-6	Urban	Rural	1	>1
	n=2448 %	n=3526 %	n=1544 %	n=2690 %	n=1754 %	n=2204 %	n=1344 %	n=1865 %	n=2309 %	n=1780 %	n=815 %	n=2550 %	n=3134 %	n=968 %	n=5024 %
Eat Healthier	74.5	75	87.6**	80.1	54	66.8	78.2	81.4**	77.2	77.6	77.7	75.2	74.8	62.8	77.1
Vegetarian	1.9	4.6**	4.6*	3.1	3.2	2	2.8	5**	4.5**	2.7	3	3.9	3.5	4.3	3.4
Vegan	0.2	0.3	0.3	0.2	0.2	0.2	0.1	0.3	0.2	0.2	0.2	0.3	0.2	0.3	0.2
Diabetic	3.3**	2	0.9	1.7	5.4**	4**	2.1	1.3	1.7	1.9	3.8**	2.5	2.4	4.3**	2.2
Gluten Free	1.1	1.9*	1.1	1.7	1.9	1.6	1.8	1.4	1.7	1.4	1.5	1.6	1.7	2	1.5
Weight Reducing	5.3	20.2**	15	16.2**	9.9	11.7	17.7**	13.8	14.5	15.5	12.9	15.1	13.2	10.9	14.7
Low Cholesteron	11*	9.3	3	8.9	18.3**	13.5**	8.1	6.8	8.4	9.2	11.3*	9.5	10.6	15.6**	9
Other	2.1	2.7	2.7	2.5	2.2	2	1.9	2.9	3.1*	1.9	2.2	2.4	2.6	2.8	2.4
No Diet	67.9**	58.4	67**	63.1	65.6	59.2	63.5	66.1**	64.2	63.7	63.1	61.9	62.7	58.8	62.9
Food Supplement	40.4	59.2**	58.7**	51.3	45	39.6	51.8	62.7**	60.9**	49	43.1	56.6**	47.7	48.5	52
Folic Acid	5.6	11.3**	12.5**	7.7	7.8	6.8	8.5	10.9**	10.7**	8.2	8.1	9.9**	8.3	6.5	9.5

*p<0.05, **p<0.01: significant difference between sociodemographic categories

Appendix 11: Male dieting patterns

	Age group (years)			Education			Social Class			Location		Number in Household	
	18-34	35-54	55+	None/prim ary/some secondary	Completed secondary	Completed tertiary	1-2	3-4	5-6	Urban	Rural	1	>1
	n=588 %	n=1069 %	n=788 %	n=1088 %	n=415 %	n=733 %	n=824 %	n=745 %	n=446 %	n=962 %	n=1366 %	n=423 %	n=2025 %
Eat Healthier	89**	81.3	53.1	66.8	77.5	83.5**	77.6	76.2	77.9	75.8	73.7	65.1	76.5
Vegetarian	1.2	1.7	2.9	1.8	1	2.8	2.3	1.4	1.4	1.8	2.2	3.6	*1.6
Vegan	0.3	0	0.3	0.2	0	0.1	0.2	0.1	0	0.1	0.2	0	0.2
Diabetic	0.5	2.3	6.9**	4.9**	1.9	1.9	2	2.4	5*	3.8	2.7	6.7*	2.6
Gluten Free	0.7	0.8	2*	1.4	0.7	1.1	1.2	0.7	0.9	1.4	1	1.2	1.1
Weight Reducing	3.8	4.7	7.2*	5.7	4.9	5	4	6.4	3.8	4.6	5.7	7	4.9
Low Cholesteron	3.4	10.2	18**	13.7**	8.5	8.6	8.2	11.1	12.9*	10.7	11.3	13.3	10.5
Other	3.1	1.4	2.4	1.7	2.4	2.5	2.7	1.6	2.3	1.7	2.5	2.7	2
No Diet	75.2**	71.7	57.1	64.1	74.8**	70.4	71.4	69.6	69.3	68.2	68	61	69.4
Food Supplement	49.7**	39.3	34.8	31.2	40.4	52.5**	48.2**	38.2	37.6	46.4**	36.9	38.3	40.9
Folic Acid	7.2**	3.5	7.2	5.2	4.2	6.7**	5.5	5.2	5.9	7.7**	4.2	7.2	5.3

*p<0.05, **p<0.01: significant difference between sociodemographic categories

Appendix 12: Female dieting patterns

	Age group (years)			Education			Social Class			Location		Number in Household	
	18-34	35-54	55+	None/prim ary/some secondary	Completed secondary	Completed tertiary	1-2	3-4	5-6	Urban	Rural	1	>1
	n=956 %	n=1618 %	n=951 %	n=1112 %	n=928 %	n=1132 %	n=1481 %	n=1031 %	n=366 %	n=1578 %	n=1762 %	n=540 %	n=2986 %
Eat Healthier	86.7**	79.3	54.2	66.7	78.5	80**	77	78.7	77.6	74.9	75.6	61	77.4
Vegetarian	6.7**	4	3.3	2.2	3.7	6.4**	5.7	3.7	4.7	5.2	4.4	4.9	4.5
Vegan	0.3	0.3	0.1	0.2	0.1	0.4	0.2	0.2	0.5	0.4	0.1	0.6	0.2
Diabetic	1.2	1.3	4.2**	3.1**	2.2	0.9	1.5	1.5	2.5	1.7	2.1	2.4	2
Gluten Free	1.4	2.3	1.7	1.8	2.3	1.6	2	1.9	1.9	1.7	2.1	2.6	1.8
Weight Reducing	21.9	23.8**	12.2	17.6	23.5**	19.6	20.3	22.1	23.8	21.5	19	14	21.
Low Cholestron	2.7	8.1	18.3**	13.3**	7.9	5.6	8.4	7.8	9.3	8.8	1	17.4**	7.9
Other	2.5	3.2	2	2.4	1.7	3.1	3.4	2.1	2.2	2.9	2.6	3	2.6
No Diet	61.9*	57.6	56.1	54.4	58.6	63.3**	60.2	59.5	55.9	58.1	58.7	57.1	58.6
Food Supplement	64.3**	59.3	53.5	47.9	56.9	69.4**	67.8**	65.8	50.1	62.8**	55.9	56.6	59.6
Folic Acid	15.8**	10.4	8	8.5	10.4	13.6**	13.3**	10.3	10.5	11.2	11.2	6	12.2

*p<0.05, **p<0.01: significant difference between sociodemographic categories

Appendix 13: Sociodempgraphic profile of respondents' food label habits

	Gender		Age group (years)			Education			Social Class			Location		Number in Household	
	Male	Female	18-34	35-54	55+	None/primary/some secondary	Completed secondary	Completed tertiary	1-2	3-4	5-6	Urban	Rural	1	>1
	n=2448 %	n=3526 %	n=1544 %	n=2690 %	n=1754 %	n=2204 %	n=1344 %	n=1865 %	n=2309 %	n=1780 %	n=815 %	n=2550 %	n=3134 %	n=968 %	n=5024 %
Read food labels	52.3	75.5**	63.2	67.7*	66	56.5	66.7	74.5*	74.5**	60.1	57.7	68.5**	64.3	69*	65.5
Ingredients	67.3	64.9	63.3	69.5**	61.4	57.8	62.7	73.4**	72.5**	63.5	58.6	66.3	65.4	62.5	66.2
Nutrients	52.1	64.7**	63.2	63.4**	53.6	50.9	61.9	66.7**	66.2**	61.2	53.7	63.7**	58.4	53.2	62.1
Calorific Value	22	40.3**	41.7	36.7	24.1	21.6	36.8	42.5**	40.5**	35	24.1	36.7**	32.3	30.5	35.2
Weight of Food	13.8	14.3	14.7	12.6	16.1*	13	11.7	16.8**	15.5*	12.7	11.8	14.7	13.6	15.5	13.8
Additives	40.5	49.99**	39.3	56.6**	37.2	34.8	49.4	54.2**	54.9**	45.4	38.2	45.8	47.9	35.6	49
Serving Size	14.3	15.2	14.7	15.8	14.2	15.3	13.4	13.6	16.6*	15.6	15.4	12.7	15.7	14.4	18.2*
Instructions for competition	9	9.6	10.7	8.5	9.5	8.3	9.5	10.2	9.4	9.3	7	8.9	9.8	8.5	9.5

*p<0.05, **p<0.01: significant difference between sociodemographic categories

Appendix 14: Males food labelling habits

	Age group (years)			Education			Social Class			Location		Number in Household	
	18-34	35-54	55+	None/prim ary/some secondary	Completed secondary	Completed tertiary	1-2	3-4	5-6	Urban	Rural	1	>1
	n=588 %	n=1069 %	n=788 %	n=1088 %	n=415 %	n=733 %	n=824 %	n=745 %	n=446 %	n=962 %	n=1366 %	n=423 %	n=2025 %
Read food labels	49.6	50.3	57.4**	45.3	50.1	61.7**	59.7**	44.7	50.3	56.2**	49.7	59.5**	50.8
Ingredients	70.5**	70.4	61.4	59.1	61.8	77**	75.9**	65.5	58.3	67.9	67	64.9	67.9
Nutrients	56.9	51.8	49.2	44.4	52.5	59.3**	59**	50	46.8	54.8	50.9	45	53.7
Calorific Value	20.5	23.9	20.6	18.8	21.1	26*	23.2	22.4	19.9	21	22.5	23.4	21.6
Weight of food	14.6	11.3	16.3	11.9	10.8	18.2**	15.5	14	10.6	13.7	13.9	15.5	13.3
Additives	37.5	50.5**	30	47.9**	39.8	35.6	47.9**	39.8	35.6	40.8	40.7	28	43.5
Serving Size	17.7	12.8	16.5	11.6	13.2	18.4*	17.6	15.2	13.9	15.5	14.7	19.7	14.2
Instructions for competitions	2.8*	7.5	8.2	6.7	7.8	11.4*	10.3	7.8	7.9	7.8	10.2	6.3	9.6

*p<0.05, **p<0.01: significant difference between sociodemographic categories

Appendix 15: Females food labelling habits

	Age group (years)			Education			Social Class			Location		Number in Household	
	18-34	35-54	55+	None/prim ary/some secondary	Completed secondary	Completed tertiary	1-2	3-4	5-6	Urban	Rural	1	>1
	n=956 %	n=1618 %	n=951 %	n=1112 %	n=928 %	n=1132 %	n=1481 %	n=1031 %	n=366 %	n=1578 %	n=1762 %	n=540 %	n=2986 %
Read food labels	71.5	79.2**	73.2	67.3	74.1	82.7**	82.7**	71.3	66.2	76	75.3	76.5	75.3
Ingredients	60.3	69.2**	61.4	57	63	71.6**	71.1**	62.7	59.1	65.6	64.7	61.3	65.5
Nutrients	65.9	68.3**	56.8	55	64.6	70.2**	69.2*	66.2	60.8	67.8**	62.2	57.9	66
Calorific Value	50.7**	42	26.3	23.6	41.4	50.2**	47.4**	40.6	27.8	43.6**	37.2	35.1	41.2
Weight of food	14.8	13.2	16	13.8	12	16.1	15.6	12.2	12.7	50.7	49.3	15.6	14.1
Additives	40	59.3**	42	36.8	51.6	58**	57.7**	48	40.9	48.1	51.7	40.3	51.6
Serving Size	14.9	14.8	14.3	14.5	13.6	15.7	14.7	15.4	11.8	15.7	14.2	17.2	14.3
Instructions for competition	9.7	9	10.5	9.4	10.1	9.7	9.1	9.9	6.3	9.5	9.7	10	9.5

*p<0.05, **p<0.01: significant difference between sociodemographic categories