

The definitive version of this article is published and available online as:

Lake A A, Hyland R M, Rugg-Gunn A J, Wood C E, Mathers J C, Adamson A J. Healthy eating: Perceptions and practice (the ASH30 study). *Appetite*, 2007, 48(2), 176-182.

[doi:10.1016/j.appet.2006.08.065](https://doi.org/10.1016/j.appet.2006.08.065)

Healthy eating: perceptions and practice (The ASH30 Study)

Amelia A. Lake, Robert M. Hyland, Andrew J. Rugg-Gunn, Charlotte E. Wood, John C. Mathers, and Ashley J. Adamson.

Human Nutrition Research Centre, Institute of Health and Society & School of Clinical Medical Sciences, Newcastle University, Medical School, Framlington Place, Newcastle, NE2 4HH

Amelia.lake@ncl.ac.uk (corresponding author)

r.m.hyland@ncl.ac.uk

andrew.rugg-gunn@virgin.net

c.e.wood@ncl.ac.uk

john.mathers@ncl.ac.uk

a.j.adamson@ncl.ac.uk

Corresponding author. (Amelia Lake) amelia.lake@ncl.ac.uk

Not for publication: Tel.: +44191-222-3828

Fax: +44191-222-5581

Abstract

Perceptions of healthy eating may influence food intake. Anthropometric and dietary data were collected from 197 respondents (average age 32.5 years: 2000/01) in Northumberland (78%) and elsewhere in the U.K. (22%). A questionnaire and two 3-day food diaries were completed. Foods consumed were assigned to one of five food categories from The Balance of Good Health. This paper explores respondents' concepts of 'healthy eating' and responses to the statement, *'My eating patterns are healthy'* and compares responses with measured intakes for each of the five food categories. Fifty-three respondents disagreed, 62 neither agreed nor disagreed and 82 agreed with the statement. Intakes of foods containing fat and/ or sugar, fruit and vegetables and meat, fish and alternatives were significantly different between the three response groups. The 'agree' group had the highest intake of fruit and vegetables and the lowest intake of foods containing fat and/or sugar and meat, fish and alternatives. A significantly higher proportion of individuals from the highest socio-economic group agreed with the statement. Significantly more individuals with BMIs in the two lower quartiles agreed with the statement. This paper shows a relationship between perceptions of eating patterns and socio-economic status, adiposity and measured food intake.

Keywords: healthy eating, perceptions, BMI, adiposity, food intake, socio-economic

Introduction

The connection between diet and health is well established and improving nutrition is one of the overarching priorities of global health policy (World Health Organisation 2003). Tackling social inequalities in health and the promotion of healthy eating have been related features of successive UK health policies (Department of Health 1992, Department of Health 1996, Department of Health 1999, Department of Health 2004).

Health promotion messages are not just communicated by health professionals but come from a variety and range of contemporary sources, including books and the news media (Margetts et al 1997, Wilson 1989). While it might be assumed that the information to provide 'basic knowledge' of a healthy diet is available to all individuals (Wilson 1989), confusion and misconceptions do exist. Some media messages on healthy eating are 'confusing, often conflicting, frequently not based on good quality evidence and ... based on frank misinterpretation or misunderstanding of nutritional science' (Buttriss 2003). Individual concepts and definitions of a healthy food choice are open to a vast deal of interpretation (Povey et al 1998).

Various studies have examined people's concepts of 'healthy eating' (Charles & Kerr 1988, Keane & Willetts 1996, Margetts et al 1997, Povey et al 1998, Santich 1994). Respondents often define a healthy diet using particular foods and food groups, for example, fruit and vegetables (Keane & Willetts 1996), or by using other terms such as a 'balanced' diet or eating 'proper meals' (Charles & Kerr 1988). In an Australian study, participants' definitions focused on 'fresh foods' and emphasised a lack of processed foods (Santich 1994). 'Freshness' and 'fat content' were the most important characteristics

used by a U.S. sample when evaluating the healthfulness of food (Oakes & Slotterback 2002). Other characteristics of high importance included 'natural/unprocessed' and 'sodium content' while 'protein' and 'vitamin/mineral content' were seen as unimportant.

People assign varying levels of importance to foods within their definition of what constitutes a healthy diet. In a U.K. study, Povey *et al.* (1998) found vegetable and fruit consumption was perceived as being most important, with meat being least important. This may provide some evidence that health promotion messages to eat more fruit and vegetables are having an effect. Similarly, in a European sample fruit and vegetables featured as an important aspect of healthy eating with over 40% of the respondents mentioning increasing intakes (Margetts *et al* 1997). Within the UK sample of this study, 63% mentioned more fruit and vegetables and 44% mentioned balance and variety. Low fat foods were also important in people's definitions of healthy eating. These studies indicate that within their definitions of healthy eating individuals try to 'balance' an increase in 'good' foods with a reduction in less healthy foods.

An individual's self identification has been reported to influence healthful dietary changes; having a self-identity that is concerned about the health outcomes of diet has a predictive effect on making dietary changes (Sparks *et al* 1995). Health appears to be an integral factor of food choice.

Though the exact inter-relationship between socio-economic status (SES), health and nutrition is subject to debate, that there is some interlinking within a 'complex constellation' is clear (De Henauw *et al* 2003). Historically the poorer health of the labouring classes was, in part, attributed to

deficiencies in nutrition (Davey-Smith & Brunner 1997). There is evidence that social class differences in attitude to food and health exist (Calnan 1990) and that these may contribute to socio-economic differences in health (Maynard et al 2006). Health outcomes are strongly related to adiposity, Body Mass Index (BMI), is used as an index of adiposity (Pi-Sunyer 2002).

The population described in this study are a sample of adults in their 30s located mainly within the northeast of England. The dynamic nature of diet and its strong relationship with demographic, economic, social and health factors mean that to promote a healthier diet, we need to understand perceptions of a 'healthy diet' in context. The study described here is pertinent to the current drive to improve diets because it combines perceptions of eating patterns with measured food intake, socio-economic status and adiposity. The study explores respondents' concepts and definitions of a 'healthy diet' comparing respondents' beliefs about their healthy eating patterns with measured food intake. Additionally respondents' beliefs were compared with socio-economic status and adiposity. This study provides insight into the relationship between perceptions of healthy eating, measured food intake, socio-economic status and BMI. In addition, it presents an opportunity to explore how the public health message of 'healthy eating' is actually getting through to a sample of adults in their early 30s.

Methods

Dietary data

Respondents were taking part in a follow-up within a longitudinal dietary study – the ASH30 study (Lake et al 2004). These participants were born 1967-68, were at school in Northumberland, North East England in the 1980s and at

the time of the current study were 32-33 years old and living throughout the U.K. Four-hundred and five took part in the original 1980 survey, 298 were re-traced 20 years later and 208 consented to take part in this follow-up study (in 2000). Of those that consented to take part in 2000 there were more females and respondents were of a higher socio-economic status. In terms of diet, there were no significant differences in the 1980 food intakes of those who took part in 2000 and those who did not (Lake et al 2006b).

The respondents completed two detailed three-day food diaries followed by face-to-face interviews on the fourth day to clarify portion size and verify completeness. The photographic food atlas (Nelson et al 1997) was used to quantify portion size and respondents were also asked to keep food packaging. Food diaries were kept six months apart between 2000 and 2001.

Foods consumed were allocated to one or a combination of the five The Balance of Good Health food groups (BGH) from the food selection guide (Food Standards Agency 2001, Health Education Authority 1994) according to specifications laid out by Gatenby *et al.* (1995). The BGH model recommended that a balanced diet should consist of approximately 33% fruit and vegetables, 33% bread, other cereals and potatoes, 15% milk and dairy products, 12% meat, fish and alternatives and 8% foods containing fat and/ or sugar (Gatenby et al 1995). Consumption of foods within groups was quantified by expressing the weight of food consumed from each of the five BGH food groups as a percentage of total weight of food consumed.

Anthropometric data

Weight was recorded using Tanita Digital scales to nearest 0.1kg. Height was recorded to the nearest cm using a portable Soehnle electronic vertical

stadiometer. Respondents were asked to remove shoes. Their head was positioned so that the Frankfurt Plane was horizontal, feet were together, knees straight and arms loosely by their side. BMI was calculated as weight in kilograms divided by the square of height in meters:

$$\text{BMI} = \text{weight (kg)} / \text{height}^2 \text{ (m)}.$$

Questionnaire data

A 21 item questionnaire designed for self-completion after the collection of the first food diary was developed and piloted. It combined closed, Likert scales and open-ended questions. This paper examines a sub-section of the questionnaire regarding responses to two questions about healthy eating. An open ended question sought to understand what respondents perceived as 'healthy eating':

What do you understand by the term 'healthy eating'?

A Likert scale question enquired if they believed their eating patterns to be healthy:

How strongly do you agree with this statement?

'My eating patterns are healthy'

The five point scale of answers ranged from strongly disagree, disagree, neither agree nor disagree, agree and strongly agree. For the purpose of analysis these were condensed to three groups: 'disagree', 'neither agree nor disagree' and 'agree'. Responses to the open question were coded using QSR N5 NUD*IST. Two independent analyses of the questionnaire data were undertaken to derive dominant themes. Responses to this closed question were compared with measured dietary intake using ANOVA and Dunnett's T-3

post-hoc tests. Responses to the closed question were compared with BMI quartile position using Chi-squared statistics.

Socio-economic data

Socio-economic information was collected from the questionnaire. Due to the longitudinal design of this study (Lake et al 2004), the 1970 Registrar General's (1970) definitions of social class were used. Following the pattern described in Lake *et al.* (2004) and Fletcher *et al.* (2004) social class was divided into four groups, high, middle, low and unclassified. The unclassified group includes individuals in full time education as well as unemployed individuals.

Results

There were 197 responses (116 female and 81 males) to these questions. The majority of respondents (78%) were still living in Northumberland and Tyne and Wear areas while 22% had moved to elsewhere in the UK. At the time of the study 43% of respondents were in the highest social class, 37% in the middle, 16% in the lowest and 4% in the unclassified group. The unclassified group was a small but diverse group of individuals. The living arrangements of the sample were representative of the variation reported within the U.K (Lake et al 2006a).

Definitions of healthy eating

Respondents used certain recurring words and terminology to describe healthy eating and these included nutritional terms and words which might have originated from health promotional messages, such as a 'balanced diet' (54% of respondents):

048.FEMALE - Eating a balanced diet with the recommended daily allowance of protein, fibre, carbohydrate and vitamins and minerals.

Key themes, for example, fat (55% responses), fruit and vegetables (51% responses) were used repeatedly in the responses. A balanced, varied diet which included all food groups in moderation, but with plenty of fruit and vegetables was the general definition of healthy eating offered by respondents:

050.FEMALE - Eating a well balanced diet including fruit and vegetables, eating fatty foods and dairy products in moderation.

Twelve respondents (6%) referred to specific quantities of food, such as the 5-a-day message regarding fruit and vegetables. Types of fat were discussed, e.g. 8 respondents mentioned saturated fat and three respondents referred to cholesterol in their response. A third of respondents used terminology such as 'protein', 'carbohydrate', 'starch' or 'roughage' in their response, illustrating people's heightened awareness of nutrition in relation to health and nutrient requirements. There was an emphasis on foods being fresh or homemade and free from preservatives:

243.MALE -Fresh food rather than chemicals/ processed food.

Respondents related eating healthily to their overall health and in some cases emotional health. A diagrammatic summary is given in Figure 1 which also shows the percentage of individuals who cited these key themes in their responses. The concepts of both *variety* and *moderation* in diet were associated with consuming a balanced diet. Respondents believed 'healthy' foods were low in fat, were fresh and home produced and included fruit and vegetables. Meat was perceived less consistently, being conceived to be necessary for a healthy diet by five individuals while six respondents

perceived a reduced intake of red meat to be within their definition of 'healthy eating'. In summary, respondents' definitions of healthy eating were broadly in line with current recommendations. They included foods or nutrients which they reported needed to be increased, such as fruit and vegetables, and food which should be reduced, such as salt, processed foods, fast foods and foods high in fat.

Perceptions of the healthfulness of eating patterns

The largest group of respondents were those who agreed (42%) with the statement that their eating patterns were healthy. Sixty-two participants (31%) neither agreed nor disagreed with the statement (Table 1). Although a higher percentage of women than men believed their eating to be healthy (44% compared with 38%), there were no significant gender differences in response to this question. Relationships between perceptions of healthfulness of eating patterns and socio-economic status were analysed using chi-squared statistics. Overall there was a small but significantly different pattern of distribution ($\chi^2 = 12.58$ $p=0.05$) (Table 2). A larger proportion of individuals in the high (51%) and middle (36%) social class tended to agree with the statement compared with the low (23%) social class.

Table 3 illustrates intakes of the five BGH food groups for the three response groups in 2000. An ANOVA test established that the food intakes of three BGH food groups were significantly different between the three response groups; i.e. foods containing fat and/ or sugar, fruit and vegetables and meat, fish and alternatives ($p=0.014$, $p<0.001$, $p<0.001$ respectively).

There was no evidence that intakes of bread, other cereals and potatoes or of milk and dairy foods differed between the three response groups.

Dunnetts T-3 Post-Hoc testing indicated that the group who believed their eating patterns were healthy (agreed with the statement) had a significantly lower intake of foods containing fat and/or sugar than those who did not think their eating patterns were healthy ($p=0.018$). They also had a significantly higher intake of fruit and vegetables than both the group who disagreed and the 'neither' group ($p<0.001$ and $p=0.001$ respectively). The group who agreed with the statement also had a significantly lower intake of meat, fish and alternatives than the group who identified their eating patterns as 'not healthy' ($p=0.002$).

Perceptions of the healthfulness of eating patterns and BMI quartile position

Relationships between perceptions of healthfulness of eating patterns and BMI quartile position were analysed using chi-squared statistics. Overall the pattern of distribution was significantly different ($\chi^2 =14.78$ $p=0.022$). There were significantly more individuals with BMIs in the highest quartile (BMI>29.09) who disagreed with the statement that 'my eating patterns are healthy' (39%) compared with individuals from the lowest BMI quartile (15%) (BMI<23.25). There were significantly more individuals with BMIs in the lowest two quartiles (1 and 2) who agreed with the statement (46% and 50%) compared with those in the highest BMI quartile (22%) (Table 4). There was no significant relationship between BMI quartile position and BGH food intake.

Discussion

The purpose of this study was to investigate food intake in relation to perceptions of healthiness, socio-economic status and BMI. The use of mixed

methods has helped to illustrate the complex relationship between perceptions and measured food intake. This study is important because it indicates that perceptions of eating patterns can be related to measured food intake, socio-economic position and adiposity. Respondents in this study had a concept and understanding of healthy eating broadly in line with prevailing nutritional guidelines in the UK (Department of Health 2004). These findings indicate that perceptions of healthy intake and measured food intake are significantly associated; individuals who responded that their eating patterns were healthy had a significantly higher intake of fruit and vegetables, lower intakes of foods containing fat and/ or sugar and lower intakes of meat, fish and alternatives.

This study analysed food intake according to the Balance of Good Health model. This is an established and accepted public health model within the UK. While the food groups within the model are large and so may obscure smaller food groups, they do present an overall picture of food intake. The ASH30 cohort were recruited in 1980 as part of a longitudinal study. The sample were largely a homogenous group of white individuals with little ethnic variation, representative of the population when they were originally recruited in 1980. The individuals who took part in the follow-up ASH30 study, (data presented in this paper) were of a higher social class and more were female than in the original 1980 study following a pattern found in earlier work (Rosenthal & Rosnow 1975, Rosnow & Rosenthal 1976). The bias towards participation of individuals from higher socio-economic status and a higher female contribution is as expected.

Some messages on healthy eating transmitted by the media are described as 'confusing' (Buttriss 2003), yet the ASH30 sample showed an awareness of key elements of current healthy eating messages and their responses did not really suggest confusion. Other work has reported that the wider British public appear to be increasingly aware of, and interested in, the relationship between the foods they consume and their health (Kelly & Stanner 2003).

The message to consume more 'fruit and vegetables', probably one of the most consistent dietary messages over recent years (Kelly & Stanner 2003), was reflected in half of the responses, although only a small number referred to the quantity (5-a-day message). Although none of the three response groups met the recommended 33% of total food weight from fruit and vegetables, the group who perceived that their eating patterns were healthy had the highest average intake (30%) (Table 2). This indicates a level of awareness which was translated to eating behaviour.

Fat reduction messages, associated with the reduction of cardiovascular disease, have had an impact nationally where daily intake of fat has decreased by >30g over the last 20 years and saturated fatty acids have fallen by >20g (Department for Environment 2001). Over half of the respondents referred to fat, both describing types of fat and the importance of fat reduction. All three response groups had a higher than recommended intake from foods containing fat and/ or sugar (8% of total food weight), but the group who perceived their eating patterns to be healthy had the lowest intake (11%).

Whilst intakes of fat have fallen nationally, intakes of sodium have shown very little movement (Department for Environment 2001). This was reflected in the small number of respondents describing salt reduction in their definition of healthy eating (16 (8%) mentioned salt reduction, compared with 108 (55%) who mentioned fat).

The use of terms such as 'balanced' and 'fresh' and the association of fruit and vegetables with health has been found in previous studies (Keane & Willetts 1996). Consistent with findings from previous U.K and European surveys (Margetts et al 1997), the ASH30 respondents definitions included reductions in certain food groups balanced by increases in other food groups. Although the questionnaire did not measure nutritional knowledge, it gives some indication of the respondents' understanding of nutritional messages. Earlier work found that nutritional knowledge was related to fruit, vegetable and fat intake (Wardle et al 2000). In the ASH30 study perception of healthiness of eating patterns was related to intakes of fruit and vegetables, intakes of foods containing fat and/ or sugar and meat, fish and alternatives. In the ASH30 questionnaire responses, certain foods, such as fruit and vegetables, were consistently cited as healthy; the perception of meat was less consistent.

It is acknowledged that an association exists between socio-economic status and eating patterns. Socio-economic status was associated with perceptions of healthy eating. A higher proportion of individuals from the highest and middle socio-economic groups agreed with the statement that 'my eating patterns are healthy' compared with the low socio-economic group. Measures of BMI were related to perceptions of healthy eating. A higher

proportion of respondents with lower BMIs agreed with the statement that 'my eating patterns are healthy' compared with the higher BMI quartile group, despite no evidence of differences in intake being detected. Issues of under reporting of dietary intake, particularly in individuals with higher BMI's may contribute to this finding. Further qualitative work would be required to offer explanations for this difference in perceptions of eating patterns according to body weight, but this does indicate that individuals have a perception of the healthfulness of their eating patterns.

Individuals have an accurate perception of the healthiness of their eating patterns. Every individual appears to operate some form of food classification based upon cultural and social norms and their personal understanding and values (Furst et al 2000). A concern for health is increasingly projected as a reason for making particular food choices (Connors et al 2001). A healthy diet is usually promoted as being high in fruit and vegetables and low in foods containing fat and sugars (Food Standards Agency 2001). The classification of foods as 'healthy' or 'unhealthy' may in part reflect health promotional messages but also the wider influences of media debate and the exchange of information. Beliefs about healthy eating showed a statistically significant association with food intake, socio-economic status and adiposity. While it is acknowledged that a larger proportion of respondents were in the highest and middle socio-economic group, that the definitions of healthy eating used by the ASH30 respondents largely echo health promotion messages may be of some reassurance to policy developers, but the continuous and increasing public interest in nutrition and health

requires continual clarification and reinforcement of sound nutritional messages.

Acknowledgements

The authors thank the Wellcome Trust for funding this study (grant number 057995/Z/99/Z), Dr Allan Hackett, Liverpool John Moores University, for the 1980 data collection, Dr Angela Craigie and Megan Gibbons for assistance with the 2000 ASH30 Study data collection, Professor John Matthews and Simon Webster for their statistical advice and the participants for their contributions. The Occupational Information Unit of the Office of National Statistics assisted with the socio-economic coding.

References

- Buttriss J. 2003. Scene setting: who is the voice of nutrition in Britain? *Proceedings of the Nutrition Society* 62: 573-5
- Calnan M. 1990. Food and health: a comparison of beliefs and practices in middle-class and working-class households. In *Readings in Medical Sociology*, ed. S Cunningham-Burley, NP McKeganey, pp. pp. 9-36. London: Tavistock/Routledge
- Charles N, Kerr M. 1988. *Women, Food and Families*. Manchester: Manchester University Press
- Connors M, Bisogni CA, Sobal J, Devine CM. 2001. Managing values in personal food systems. *Appetite* 36: 189-200
- Davey-Smith G, Brunner E. 1997. Socio-economic differentials in health: the role of nutrition. *Proceedings of the Nutrition Society* 56: 75-90
- De Henauw S, Matthys C, De Backer G. 2003. Socio-economic status, nutrition and health. *Archives of Public Health* 61: 15-31
- Department for Environment FaRAaNS. 2001. *National Food Survey 2000. Annual report on food expenditure, consumption and nutrient intakes*. London: The Stationery Office
- Department of Health. 1992. *The Health of the Nation: A Strategy for Health in England*. London: HMSO
- Department of Health. 1996. *Eat well II: A progress report from the Nutrition Task Force on the action plan to achieve the health of the nation targets on diet and nutrition*. London: Department of Health
- Department of Health. 1999. *Saving Lives: Our Healthier Nation. White Paper Cm 4386*. London: The Stationery Office

- Department of Health. 2004. *Choosing Health? Choosing a Better Diet: a consultation on priorities for a food and health action plan*, Department of Health, London
- Fletcher ES, Rugg-Gunn AJ, Matthews JN, Hackett A, Moynihan PJ, et al. 2004. Changes over 20 years in macronutrient intake and body mass index in 11- to 12-year-old adolescents living in Northumberland. *British Journal of Nutrition* 92: 321-33
- Food Standards Agency. 2001. *The Balance of Good Health*, Food Standards Agency, London
- Furst T, Connors M, Sobal J, Bisogni C, Falk LW. 2000. Food classifications: levels and categories. *Ecology of food and nutrition* 39: 331-55
- Gatenby SJ, Hunt P, Rayner M. 1995. The National Food Guide: Development of dietetic criteria and nutritional characteristics. *Journal of Human Nutrition and Dietetics* 8: 323-34
- Health Education Authority. 1994. *The Balance of Good Health*, HMSO, London
- Keane A, Willetts A. 1996. *Concepts of Healthy Eating: An Anthropological Investigation in South-East London*. London: Goldsmith College
- Kelly CNM, Stanner SA. 2003. Diet and cardiovascular disease in the UK: are the messages getting across? *Proceedings of the Nutrition Society* 62: 583-9
- Lake AA, Hyland RM, Rugg-Gunn AJ, Wood CE, Mathers JC, Adamson AJ. 2006a. Food shopping and preparation among the thirty-somethings: whose job is it? (The ASH30 study). *British Food Journal* 108: 475-86
- Lake AA, Mathers JC, Rugg-Gunn AJ, Adamson AJ. 2006b. Longitudinal change in food habits between adolescence (11-12 years) and adulthood (32-33 years): the ASH30 Study
10.1093/pubmed/fdi082. *Journal of Public Health* 28: 10-6
- Lake AA, Rugg-Gunn AJ, Hyland RM, Wood CE, Mathers JC, Adamson AJ. 2004. Longitudinal dietary change from adolescence to adulthood: perceptions, attributions and evidence. *Appetite* 42: 255-63
- Margetts BM, Martinez JA, Saba A, Holm L, Kearney M. 1997. Definitions of 'healthy' eating: A pan-EU survey of consumer attitudes to food, nutrition and health. *European Journal of Clinical Nutrition* 51: S23-S9
- Maynard M, Gunnell D, Ness AR, Abraham L, Bates CJ, Blane D. 2006. What influences diet in early old age? Prospective and cross-sectional analyses of the Boyd Orr cohort
10.1093/eurpub/cki167. *Eur J Public Health* 16: 315-23
- Nelson M, Atkinson M, Meyer J. 1997. *A photographic atlas of food portion sizes*. London: MAFF Publications
- Oakes ME, Slotterback CS. 2002. The good, the bad, and the ugly: Characteristics used by young, middle-aged, and older men and women, dieters and non-dieters to judge healthfulness of foods. *Appetite* 38: 91-7
- Pi-Sunyer FX. 2002. The Obesity Epidemic: Pathophysiology and Consequences of Obesity. *Obes Res* 10: 97S-104
- Povey R, Conner M, Sparks P, James R, Shepherd R. 1998. Interpretations of healthy and unhealthy eating, and implications for dietary change. *Health Education Research* 13: 171-83

- Registrar General. 1970. *Classification of Occupations 1970*. Office of Population Censuses and Surveys. London: HMSO
- Rosenthal R, Rosnow RL. 1975. *The Volunteer Subject*. New York: Wiley
- Rosnow R, Rosenthal RL. 1976. The volunteer subject revisited. *Australian Journal of Psychology* 28: 97-108
- Santich B. 1994. Good for you: Beliefs about food and their relation to eating habits. *Australian Journal of Nutrition and Dietetics* 51: 68-73
- Sparks P, Shepherd R, Wieringa N, Zimmermanns N. 1995. Perceived behavioural control, unrealistic optimism and dietary change: An exploratory study. *Appetite* 24: 243-55
- Wardle J, Parmenter K, Waller J. 2000. Nutrition knowledge and food intake. *Appetite* 34: 269-75
- Wilson G. 1989. Family food systems, preventative health and dietary change: A policy to increase the health divide. *Journal of Social Policy* 18: 167-85
- World Health Organisation. 2003. *Diet, Nutrition and the Prevention of Chronic Disease. Rep. Technical Report Series 916*, WHO/ FAO Expert Consultation, Geneva

Table 1 Healthiness of eating patterns – condensed likert scale groups (n=197)

Response to statement	Total		Gender			
	n	%	Male		Female	
			n	%	n	%
'My eating patterns are healthy'						
Disagree (not healthy)	53	27	24	30	29	25
Neither agree nor disagree	62	31	26	32	36	31
Agree (healthy)	82	42	31	38	51	44

Table 2 Healthiness of eating patterns compared with socio-economic status (n=197)

		Social class							
		1 High		2 Middle		3 Low		4 Unclassified	
		n	% in social class	n	%	n	%	n	%
'my eating patterns are healthy'	Disagree	21	24	19	26	12	39	1	14
	Neither	21	24	28	38	12	39	1	14
	Agree	44	51	26	36	7	23	5	71

($\chi^2 = 12.58$ $p=0.05$)

Table 3 Percentage contribution to total food weight from the five BGH food groups in 2000 according to their agreement with the statement that “my eating patterns are healthy”

% contribution 2000	Response to: “my eating patterns are healthy”	n	Mean	Std error mean	p
Bread, other cereals & potatoes	Disagree	29	30.4	1.0	0.405
	Neither	36	30.0	0.8	
	Agree	51	28.9	0.7	
Foods containing fat &/sugar	Disagree	29	14.1	1.0	0.014
	Neither	36	12.8	0.8	
	Agree	51	11.0	0.6	
Fruit & vegetables	Disagree	29	20.8	1.3	<0.001
	Neither	36	23.4	1.3	
	Agree	51	29.7	1.1	
Meat, fish & alternatives	Disagree	29	19.4	1.0	0.001
	Neither	36	17.3	0.8	
	Agree	51	15.2	0.6	
Milk & dairy foods	Disagree	29	15.4	1.0	0.573
	Neither	36	16.5	1.1	
	Agree	51	15.2	0.9	

Table 4 Healthiness of eating patterns compared with BMI quartile position (n=197)

		Quartiles of BMI in 2000							
		1 (16.22-23.25) Low		2 (23.30-25.63)		3 (25.66-29.07)		4 (29.09-46.99) High	
		n	% in quartile	n	%	n	%	n	%
'my eating patterns are healthy'	Disagree	7	15	13	26	14	28	19	39
	Neither	19	40	12	24	12	24	19	39
	Agree	22	46	25	50	24	48	11	22

($\chi^2 = 14.78$ $p=0.022$)

Figure 1 Themes used in the definition of healthy eating

