

A survey carried out on behalf of the Food Standards Agency



Low income diet and nutrition survey

Volume I

Background

Methods

Sample characteristics

Michael Nelson, Bob Erens, Beverly Bates,
Susan Church and Tracy Boshier



University of London



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Foreword

This survey, of a national sample of the most materially deprived households, provides nationally representative baseline data on the dietary habits and nutritional status of the part of the UK population that has a low income. It is the most comprehensive survey of its kind in the UK and provides, for the first time, a wealth of information on the dietary habits and nutritional status in this population subgroup and the factors affecting these.

It is a valuable supplement to the National Diet and Nutrition Survey (NDNS) programme that collects information on the dietary habits and nutritional status of the general UK population.

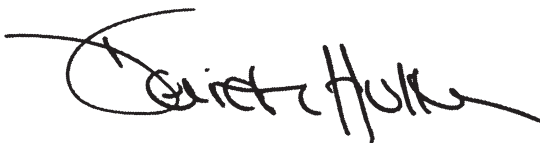
As well as including chapters on foods consumed, nutrient intake and status, physical measurements, physical activity, smoking, drinking and oral health, this report also examines the relationship between dietary intake and factors associated with food choice. It also includes comparisons to the general population.

This report highlights areas of concern for the low income population, which are, in many respects, similar to those already identified in the general population, although often to a greater degree. Also identified were higher levels of smoking, increased alcohol intake (amongst consumers) and reduced physical activity, all of which are known risk factors for chronic disease.

Results of this survey will be used to develop nutrition policy by understanding and addressing barriers to the uptake of a healthy balanced diet by those in the population on a low income.

This report, and the work described within, results from a successful collaboration between the Food Standards Agency, which commissioned the survey and a consortium of three organisations led by the Health Research Group at the National Centre for Social Research (NatCen) and including the Nutritional Sciences Research Division at King's College London, and the Department of Epidemiology and Public Health at the Royal Free and University College London Medical School.

We warmly welcome the report and express our thanks to all those who took part.



Dame Deirdre Hutton
Chair
Food Standards Agency

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Background and purpose of LIDNS

Michael Nelson, Beverly Bates, Bob Erens and Jennifer Mindell

1.1 General introduction

This chapter provides a brief overview of the background, rationale, aims, and limitations of the Low Income Diet and Nutrition Survey (LIDNS). Details of the survey design and methods are given in Chapter 2.

LIDNS was designed to provide a comprehensive picture of the food consumption and nutritional status of a nationally representative sample of respondents living in low income households in the United Kingdom.¹ It also assessed numerous socio-economic, environmental, behavioural and attitudinal factors, and lifestyle and health characteristics which relate to food consumption, nutritional status and nutrition-related health. The purpose of the survey was to provide an evidence base that would contribute to the development of food policy, which in turn would help to reduce health inequalities. The need for such a survey is outlined in Section 1.2.

LIDNS was commissioned by the Food Standards Agency ('the Agency') and was carried out by a consortium of three organisations, led by the Health Research Group at the National Centre for Social Research, and including the Nutritional Sciences Research Division at King's College London, and the Department of Epidemiology and Public Health at University College London Medical School. Haematological and biochemical analyses of blood samples were carried out in the Department of Haematology, Royal Victoria Infirmary, Newcastle-upon-Tyne, and the Biotechnology and Biological Sciences Research Council (BBSRC) Institute of Food Research, Norwich. Fieldwork in Northern Ireland was carried out by the Northern Ireland Statistics and Research Agency.

1.1.1 Sample selection and survey design

Briefly, a nationally representative sample of low income (materially deprived) households^{2,3} was identified using a doorstep screening questionnaire.⁴ The aim (wherever possible) was to include two respondents per household. Single person households were eligible, as were two-person households (in which both respondents were asked to take part). In households with more than two persons, two respondents were randomly selected. If children were present, one adult and one child were selected. Each respondent was asked to provide four 24 hour (24h) recalls of diet on random days within a 10 day period. In addition, information regarding socio-economic status, environment, health behaviours, attitudes, lifestyle and health characteristics, and some objective measures of health and nutritional status were obtained. Further information on the survey methods is given in Chapter 2.

1.1.2 Methods development for LIDNS

In order to inform the design of any future survey of this population subgroup, the then Ministry of Agriculture, Fisheries and Food (MAFF) commissioned two research projects. The first project,⁵ conducted in 1998, was a scoping study that had three aims: 1) to review methods for

identifying and sampling low income households; 2) to review the strengths and weaknesses of dietary assessment methods in relation to the characteristics of low income households in the UK; and 3) to make recommendations regarding the best methods to be used in a national survey of diet and nutrition in low income households. The study concluded that a doorstep screening approach was likely to produce the highest response rate of a representative cross-section of low income households. It also suggested that findings from three dietary assessment methods – repeat 24h recalls, a food checklist, and the semi-weighed method – should be compared with those from a reference measure (the weighed inventory).

The second project,⁶ conducted between 2000 and 2002, was a methodological study of low income households in London (the Low Income Diet Methods Study – LIDMS) which field tested the methods for sampling, for screening for low income households, and for dietary assessment. In addition to the policy objectives that underpinned the design and objectives of LIDNS, the findings from the scoping study and LIDMS were strong influences on the methods chosen by the Agency.

Before LIDNS was conducted nationally, a feasibility study was carried out in a nationally representative sample (see Appendix A, LIDNS CD). This was the first full scale test of all aspects of the methodology, including the sampling, doorstep screening, other logistics of the mainstage survey and the validity of the repeat 24h recall in low income households. The findings have been reported elsewhere.⁷

1.2 Diet, low income and health inequalities in the UK

1.2.1 Evidence

Successive Government reports over the last 15 years have highlighted a persistent nutrition-related health disadvantage amongst the poor.^{8 9 10 11 12} Data on household food acquisition in the general population have been collected systematically since 1950 in the National Food Survey (NFS),^{13 14} but these data do not provide information about food consumption at the individual level. Data on food consumption and nutritional status at the individual level have been provided since 1990 by the National Diet and Nutrition Surveys (NDNS).^{15 16 17 18 19}

The NDNS were analysed by indicators of low income (receipt of state benefits) and have found differences in food consumption and nutritional status in low income households. The NDNS, however, are also general population surveys and as such were not designed to include the numbers of low income respondents that would allow detailed analyses of this population subgroup, or include insights into such issues as cooking facilities and skills, access to food and attitudes to healthy eating in low income households.

A number of reports^{20 21 22 23 24} have investigated the relationships between income and material circumstances and diet and wider aspects of food such as shopping and cooking. Whilst these have provided useful quantitative and qualitative information, none was based on sufficiently large or representative samples to be able to generalise about policy priorities. They did, however, highlight the complexity and diversity of the circumstances in which poor people live and make decisions about food, and the ways in which wider policy decisions regarding transport or planning may impact on diets.

1.2.2 Policy

In the 1980's two reports on the causes of health inequalities in Britain were published^{25 26} (and later republished in a single volume).²⁷ These highlighted the mainly social, economic and structural reasons for the increasing 'health gap' between the rich and poor and contained wide-reaching policy recommendations. Governments of the time noted that the improvement of the nutritional health of those on a low income was 'a matter for personal change and local initiatives and projects rather than national action by Government'.²⁸

In 1998, the Acheson Report²⁹ returned to the issue of inequalities in health and suggested that central Government could play a role in reducing nutrition-related health inequalities. The report emphasised that the alleviation of food poverty required not only changes in behaviour at the individual and family levels, but also coordinated and multi-sectoral action at the national and local levels, and that monitoring of changes in diet and nutrition-related health outcomes was a key element of the policy process.

The Department of Health's 'Our healthier nation'³⁰ explicitly recognised the role of poverty in explaining poor health. It included policy objectives to 'improve the health of the worst off in society and to narrow the health gap' and national and local targets to reduce inequalities in life expectancy, infant mortality and cancer and cardiovascular disease mortality through central, local and individual action. This has been followed by 'Choosing health: making healthy choices easier'³¹ which summarizes programmes already in place or planned, including many targeted at low income households and deprived areas.^{32 33 34 35} Similar initiatives to address nutrition-related health inequalities have also been introduced in Scotland³⁶ and Wales.³⁷

1.3 Main aims of LIDNS

1.3.1 Main aims

Over the many years of policy discussion, two key features of the policy recommendations relating to nutrition and health inequalities have persisted: the need for an adequate evidence base from which to monitor the effects of policy; and the need for an effective monitoring programme that would help to explain how changes in diet are related to changes in health in different subgroups within the population. LIDNS is a significant step in relation to these recommendations. The survey design has been driven by both scientific and policy-related objectives. The objectives of the survey were to provide for the first time in a nationally representative sample of low income households:

- A clearly defined and representative sample of low income and materially-deprived households in the UK, in which the socio-economic, demographic and health measures provide the basis for comparison with other national surveys (e.g. Expenditure and Food Survey (EFS),³⁸ General Household Survey (GHS),³⁹ Health Survey for England (HSE),⁴⁰ Scottish Health Survey (SHS),⁴¹ Family Resources Survey⁴² (FRS) and the NDNS¹⁵⁻¹⁹)
- Evidence on food consumption and nutrient intake in the context of the economic, social, behavioural and attitudinal factors that in part determine food choice
- The first national survey that provides a basis for linking policy aims and objectives with nutrition-related behaviours in low income households.

These objectives fit into the broader framework currently being developed for monitoring public health nutrition in the context of a European Health Monitoring System.⁴³

The specific aims of LIDNS were to:

- Provide quantitative data on the food and nutrient intakes, sources of nutrients and nutritional status of the low income population (Chapters 4-9, 12, 14)
- Describe the characteristics of individuals with intakes of specific nutrients above or below the national average (Chapters 4-9, 10)
- Assess the diets of the low income population to determine the extent to which they are sufficiently nutritious (Chapters 4-9)
- Evaluate the extent to which the diets of the low income population vary from expert recommendations (Chapters 4-9)
- Provide physical measurements of health-related factors closely associated with diet, namely height, weight and other anthropometric measurements and blood pressure for a representative sample of low income individuals (Chapters 12 and 13)

- Measure blood indices that provide evidence of nutritional status or dietary biomarkers (Chapter 14)
- Assess physical activity levels of the low income population (Chapter 15)
- Provide basic information on smoking and oral health status in relation to diet (Chapters 16 and 17)
- Examine the relationship between dietary intake and factors associated with food choice in the low income population (Chapters 18-20)
- Examine possible relationships between diet and risk factors in later life (Chapter 17).

1.3.2 Defining 'low income'

The Scoping Study⁵ recognised that sample selection based on income alone would not capture all of the aspects of material deprivation likely to influence nutrition. Defining a single cut-off point for 'low income' is not appropriate, and establishing equivalised income⁴⁴ is too complex to be carried out on the doorstep for purposes of screening.

There is an extensive literature on low income in the UK,^{5,24,45} much of which assesses the relationships between numerous markers of material deprivation and receipt of benefit with levels of income. Classic measures such as households receiving less than 50% of average income (Households Below Average Income (HBAI) after housing costs) are essentially census based and difficult to interpret on the doorstep. Also, HBAI captures varying proportions of households in different population subgroups (e.g. lone-parents versus couples with children versus pensioners) and does not address issues of income relating to disability. For the purposes of LIDNS, a more meaningful measure was needed that reflected deprivation in relation to food access and affordability. It was also important to be able to align information from LIDNS with other data relating to deprivation in the UK (e.g. comparison with data in the HSE, GHS or FRS). The critical issue, therefore, was how to interpret an acceptable conceptual definition of 'being on a low income' into a workable operational definition suitable for use as a doorstep screening questionnaire.

The aim of LIDNS was to identify (approximately) the bottom 15% of the population in terms of 'low income' using a valid index of material deprivation that could be readily assessed on the doorstep (to allow interviewers to identify and recruit households eligible for inclusion in the survey) and that was roughly equivalent between households. The doorstep screening questionnaire was also seen to be a better approach than trying to follow up samples in existing registers (e.g. via the Department for Work and Pensions) or surveys (e.g. FRS)⁴² in which the characteristics of income or deprivation might be known but in which incomplete population coverage and low co-operation rates might lead to poor representativeness of the final sample.

1.4 Limitations of the survey

The LIDNS findings provide a valuable evidence base for use in the development of policies to reduce income-related nutritional health inequalities. In a survey of this scope and complexity, however, it is inevitable that there will be some limitations in the data.

The principal aim of the survey was to characterise the food consumption and nutritional status of the low income (materially deprived) population in the UK and to identify factors associated with poorer or better nutrition within this group. The extent to which this was achieved depends on the representativeness of the sample and the extent to which the measurements achieve validity in relation to the constructs being assessed. Details of the potential errors, steps taken to minimise them, and limitations of the present findings are discussed in detail in the relevant chapters. The following discussion provides a brief overview.

1.4.1 Definition of ‘low income’ and ‘material deprivation’, and the representativeness of the LIDNS sample

Section 1.3.2 highlighted the main challenges in developing a suitable tool for identifying those households in the UK whose eating habits and nutritional health are likely to be adversely affected by lack of money or by a limiting physical or social environment. The screening questionnaire aimed to strike a balance between: a) questions that were not too intrusive and that could be answered by any adult living in the household; b) the time taken to answer the questions; and c) questions that provided a useful and discriminating measure of low income and material deprivation. Ultimately, the screening questionnaire provided only a snapshot of living circumstances at any given point in time, as many households move in and out of employment and benefit, and circumstances are continually changing.⁴⁵

The three sets of factors that govern the representativeness of the achieved LIDNS sample - sampling procedures, sample sizes, and response rates - are discussed in detail in Chapter 2. Together with the results provided in Chapter 3, which compares the LIDNS sample with data from other surveys, it appears that the achieved sample provides a good representation of the low income population in the UK (see especially Chapter 2, Sections 2.12 and 2.13). The principal limitation therefore relates to sub-analyses within countries or ethnic groups (e.g. by sex and age) where the cell sizes may be less than 30. Fewer than 30 observations is associated with substantially increased variations in standard errors and lower power, reducing the ability to distinguish genuine differences between subgroups.

Comparisons made throughout the report between LIDNS and other nationally representative sample surveys (e.g. NDNS, EFS, FRS, HSE) strongly support the conclusion that the LIDNS sample is indeed deprived in relation to the remainder of the population. While no population sample can claim to be representative of the entire low income population (and some of the sampling limitations have been set out above and in endnote 3), the data are sufficient to provide insights into the nutritional situation of participants who represent low income groups in the UK and thus to provide baseline data, as per the aims of the survey.

1.4.2 Variables measured (and not measured) and respondents’ ability to provide relevant information

The key measurements in LIDNS relate to food consumption (based in this case on 24h recalls), estimates of nutrient intake based on food composition tables, anthropometric measurements, estimates of physical activity level, and blood biochemistry, as well as economic, social, behavioural and attitudinal measurements. The potential sources of error are discussed in the relevant chapters.

The Scoping Study,⁵ LIDMS,⁶ and the Feasibility Study⁷ together addressed the question of the appropriate (and epidemiologically *relevant*)⁴⁶ measurements to include in LIDNS. The relevance of the 24h recall for collecting dietary data, questionnaire-based estimates of physical activity, the use of the food composition tables created by the Agency, and careful protocols for the anthropometric measurements have all been established. Similarly, the relevance of biochemical measurements of nutritional analytes in blood to assess nutritional status have been reviewed elsewhere⁴⁷ and are discussed in Chapter 14. Previous surveys on the role of social and economic factors in relation to nutrition in low income families informed the choice of questions included in LIDNS.

1.4.3 Number of observations and quality assurance

The collection of four 24h recalls struck the balance between the need to reflect the true variation in every individual’s pattern of food consumption and nutrient intake, on the one hand, and respondent burden on the other. Four days of data provides measures of within-subject variability that help to establish how well respondents have reported their usual diet. This knowledge helps the interpretation of measures of association between consumption and factors influencing consumption and is referred to accordingly throughout the report. The validity of the dietary measurements is discussed in Chapter 11. The collection of a single blood sample again struck the balance between respondent burden and the need for information to

interpret the dietary data appropriately and describe nutritional status. Issues of analytical quality control were addressed through carefully drafted Standard Operation Procedures and ISO2000 accreditation. Fieldworkers' adherence to agreed procedures was monitored closely, as was the quality of coding of the dietary data. The whole of the final dataset was subject to rigorous range and continuity checks.

1.4.4 Addressing limitations of methodology

A decision was taken at the start of the project to report findings as measured and, apart from re-weighting for non-response, not to make any adjustments to the data.⁴⁸ This has the benefit of making the findings in LIDNS directly comparable with findings from national surveys published on a similar basis. The broad effects of the limitations discussed in this section on the interpretation of the findings are addressed within individual chapters.

Notes and references

- 1 The term 'low income' is used in this report to reflect not simply low levels of income but also wider aspects of material deprivation. These wider aspects were used both in relation to sampling (e.g. by focusing on neighbourhoods which ranked amongst the most materially deprived based on 2001 census data, using indices of multiple deprivation) and by including questions on receipt of benefit, car ownership, household composition and employment status in the screening process. See also Chapter 2.
- 2 The term 'household' has been used throughout the report to indicate what are in fact 'catering units'. The Catering Unit (CU) is the primary grouping for this study and is defined as a 'group of people who eat food that is bought and prepared for them (largely) as a group'. CUs are either entire households, as defined in censuses and surveys, or (more rarely) form parts of households. Hence, although people may share accommodation and even be related, they may not be in the same CU. For example, adult children sharing a house with their parents may shop, cook and eat by themselves, in which case the parents would be in one CU and the children in another. Almost all households in LIDNS contained only one catering unit.
- 3 The sample does not include people living in hostels, B&B accommodation, the homeless or travellers. These groups represent a small subset of low income households whose living circumstances and access to food are likely to present special difficulties in terms of both sampling and assessment. Moreover, because of the multiplicity of factors affecting their nutritional health, the policy issues affecting these groups are likely to be different from, and more complex than, those affecting the majority of low income households.
- 4 The use of the words 'low income' on fieldwork documents (paper and computer) potentially could have influenced respondents' reporting. All references to 'low income' were therefore removed from paperwork and computer screens likely to be seen by the respondent. Instead of using 'Low Income Diet and Nutrition Survey' to identify the project, all fieldwork documents were labelled 'Social and Resource Influences on Eating Habits (SARIEH)'.
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2

Methodology and response

Beverley Bates, Svetlana Speight and Sarah Tipping

SUMMARY

- The target population of the Low Income Diet and Nutrition Survey (LIDNS) was the 15% most deprived households in the UK.
- In order to sample this population, a multi-stage clustered probability sample design was used. The stages of selection were: wards, addresses, households and respondents.
- Households in Scotland, Wales and Northern Ireland were over-sampled, as were households living in deprived areas (relative to non-deprived areas). For analysis, the data were weighted to reflect the true population of low income households in the UK.
- A 10 item 'screening' questionnaire was administered to establish whether households were low income and thus eligible for the survey.
- At eligible (i.e. low income) households, (up to) two respondents were randomly selected: either one adult (aged 19 and over) and one child (aged 2-18) or two adults.
- There were two main parts to the survey: an interviewer stage, followed by a nurse visit (interviewers attended a three day training course and nurses a two day course).
- The interviewer stage included: an extensive face-to-face computer assisted personal interview (CAPI) with both selected respondents in the household, and with the Main Food Provider if he or she was not one of the selected respondents; repeat 24 hour dietary recalls with the selected respondents on four random days (including at least one weekend day) over a 10 day period; placement of confidential self-completion questionnaires; and height and weight measurements.
- On successful completion of the interview stage (i.e. completing three or four dietary recalls), respondents were invited to take part in the nurse stage. Nurses collected information on prescribed medicines and dietary supplements, took additional physical measurements of body size (e.g. waist and hip circumferences), measured blood pressure, and took a blood sample from respondents aged 8 and over.
- Productive interviews were held with 55% of eligible individuals.
- In all, 3728 individuals from 2477 households were included in the final dataset.

2.1 Introduction

This chapter provides a summary of the sample design (Section 2.2) and an overview of the fieldwork procedures, survey components and quality assurance (Sections 2.3-2.5). The chapter goes on to describe response to the main stages of the survey (e.g. interview, nurse visit, blood sample, Sections 2.7-2.10). There then follows a discussion of non-response and weighting issues (Section 2.11). Lastly, there is an analysis of the questionnaire used for screening for low income households (Section 2.12) and the short questionnaire asked on the doorstep to assess possible non-response bias (Section 2.13).

2.2 Summary of sample design and selection

2.2.1 Overview

The Low Income Diet and Nutrition Survey (LIDNS) sample used a multi-stage clustered design. The sample was selected in stages, with the cluster hierarchy being: wards, addresses, households, and individual respondents.

The target population to 'screen-in' was the 15% most deprived households in the UK. However, in order to reduce the amount of screening required, deprived wards¹ were over-sampled relative to other wards to increase the screening-in rate to about 20%. This approach still ensured that participants living both in deprived and non-deprived areas were included in the study.

The final sample was not an equal probability sample, since households in deprived areas were over-sampled relative to households in non-deprived areas, and Scotland, Wales and Northern Ireland were over-sampled relative to England (to achieve large enough samples in these countries to enable some cross-country comparisons to be made). The final dataset was weighted to compensate for this over-sampling. Each of the sampling stages is described in more detail in the sections that follow.

2.2.2 The selection of wards

At the first stage, 528 wards were selected: 357 in England and 57 in each of Scotland, Wales and Northern Ireland. First, within each country, the population of wards was stratified by region and then by population density. Individual wards were selected with probability proportional to the number of addresses multiplied by the deprivation index for the ward. (The deprivation index used was the income domain from the Government's latest deprivation indicators).² Since the deprivation index increases with increasing deprivation, the net result was to over-sample deprived wards.

2.2.3 Selecting addresses within wards

For each selected ward a fixed sample of addresses was selected from the (small users) Postcode Address File (PAF).³ As shown in Table 2A, the number of addresses selected per ward differed depending on the relative deprivation of the ward. They also differed by country, because the deprivation indices were created separately for each of the four countries in the UK.

Selecting different numbers of addresses in different wards served two purposes:

- Interviewers working in the most deprived wards did not have to complete many more interviews than interviewers working in less deprived areas.⁴
- The variation in the final probabilities of selection was reduced, so that the final sample was skewed towards those living in deprived areas, but not excessively so.

This gave an issued sample of 31,120 PAF addresses within 528 wards.

In order to control for seasonal variations in eating behaviour, fieldwork covered all 12 calendar months. Hence, the sample of wards was randomly allocated to the 12 months of the year so that 44 wards were covered each month. For a number of practical reasons, such as allocating

Table 2A

Number of addresses issued per ward, by country*All issued addresses*

Deprivation quintile	England		Scotland		Wales		Northern Ireland	
	Number of wards	Addresses issued per ward	Number of wards	Addresses issued per ward	Number of wards	Addresses issued per ward	Number of wards	Addresses issued per ward
1st – least deprived	13	74	2	74	4	74	9	50
2nd	26	57	5	57	8	57	7	51
3rd	62	76	7	76	11	76	13	69
4th	78	68	20	68	12	68	10	60
5th – most deprived	178	48	23	44	22	45	18	60
Base	357	21004	57	3338	57	3394	57	3384

assignments to fieldworkers and recruiting sufficient local processing laboratories, the wards allocated to the first quarter of fieldwork were split, with half the wards being issued in November 2003 - January 2004 and the other half being issued in November 2004 - January 2005.

2.2.4 Selecting households

At each PAF address, the interviewer established the number of households and, in cases where there were two or more, selected one household at random.

2.2.5 Screening for low income/materially deprived households

At each household selected for the study, an adult representative was asked a series of questions (on the doorstep) to establish whether or not the household was eligible for inclusion in the survey – i.e. were they ‘low income’ or ‘materially deprived’. Since no existing screening instruments were available to determine this, a series of questions and a scoring system were developed specifically for LIDNS (see Appendix C, LIDNS CD).

The screening questionnaire consisted of 10 questions, although some were filtered and only asked of individuals over retirement age or of lone parents. One point could be scored at each question, up to a maximum score of eight points. Households with a deprivation score – or ‘D score’ – of four or more were considered ‘materially deprived’ and screened-in to LIDNS; households scoring no points or just one point were screened out. For households with a D score of two or three, a further question was asked to estimate net income for the household. To be screened-in, the estimate of net income had to be below a low income threshold that took account of household structure in terms of the number of adults and children in the household (see screening show card in Appendix C, LIDNS CD).

A small number of households (39) were screened-in who were not in fact sufficiently materially deprived to be included in LIDNS (an assessment based primarily on a review of the income data collected as part of the computer assisted personal interview (CAPI)). These households were discarded from the sample before analysis (see Section 2.7).

2.2.6 Selecting respondents

The final sampling stage was to select individual respondents. While there was interest in investigating within-household variation in diets and nutritional status, it was felt that including *all* members of households in the dietary study would impose a heavy burden on larger households. Therefore, a maximum of two respondents per household were selected. All household members aged two and over, except for pregnant women, were eligible for inclusion.

In households containing just one or two individuals aged two and over, all were selected as respondents. In households with three or more persons, interviewers selected two persons: in households with at least one child (aged 2-18), one adult and one child were selected; in households with no children, two adults (aged 19 and over) were selected. All selections were made using a random selection procedure.

2.3 Fieldwork

2.3.1 Fieldwork waves

Fieldwork was carried out in five waves as follows:

Quarter 1a November 2003 - January 2004

Quarter 2 February - April 2004

Quarter 3 May - July 2004

Quarter 4 August - October 2004

Quarter 1b November 2004 - January 2005

2.3.2 Sample reduction measures

Since no previous survey had covered the same population as LIDNS, there was no clear evidence upon which to base predicted screening-in and response rates, or household size and composition of the target population. However, such predictions were required in order to calculate the number of addresses that needed to be issued to interviewers in order to achieve the target sample size of 3665 respondents.

As a result, many of the predictions made when designing the sample were conservative, with the result that more addresses were issued than necessary so that, at the end of the first quarter (November 2003 - January 2004), the achieved sample size was 25% higher than predicted. Should this have continued throughout the fieldwork period, it would have created problems in terms of survey costs, management and timetable.

In order to achieve a number of interviews closer to the target sample size, it was decided to withhold a portion of the selected addresses which had been allocated to the latter half of the fieldwork period. Since the screening-in and response rates were highest in Scotland and England, 40% and 30% of the addresses respectively were randomly removed from the selected sample from June 2004 onwards.⁵ In all, 5302 addresses were removed, so that the final issued sample was 25,818 addresses.

2.4 Overview of survey components and fieldwork procedures

2.4.1 Overview

There were two main parts to the survey: an interviewer-administered first stage, and a visit by a nurse to carry out measurements and take a blood sample (stage 2).

The one or two individuals selected in a household (as described in Section 2.2.6) were the ones from whom interviewers attempted to collect dietary information for four 24 hour (24h) periods and to whom the anthropometric, physiological measurement and blood sampling protocols were applied. If neither of the selected individuals was the Main Food Provider (MFP),⁶ then the MFP was also invited to participate in a short interview.

The key stages of the survey were as follows:

- A face-to-face interview and distribution and collection of self-completion questionnaires.
- Dietary data collection on four different days.
- Taking physical measurements (e.g. height, weight and blood pressure).
- Blood sample collection to measure nutritional status indices.⁷

2.4.2 The interviewer visits

A letter describing the purpose of the survey was sent to all sampled addresses a few days in advance of fieldwork. In the field, the survey was referred to as 'Social and Resource Influences on Eating Habits'.

Interviewers then visited all sampled addresses to determine whether the address was private, residential and occupied. They then attempted to carry out the screening interview at all private households. Households which were screened-in as eligible for LIDNS were given a leaflet describing the purpose of the survey in more detail. (Appendix B, LIDNS CD, includes copies of all information documents provided to respondents.) Interviewers made up to four further visits to households who agreed to participate. The interviewer visits covered:

- Questionnaire administration, including an interviewer-administered computer assisted personal interview (CAPI) questionnaire carried out face-to-face. This stage also included some self-completion elements, namely: a dietary ‘restraint’ questionnaire (called ‘How do you eat?’) which assesses non-physiological eating cues that may influence intake and eating behaviour; and booklets in which to record the smoking and drinking habits of children and young people.
- Collection of dietary data for four non-consecutive days, including where possible, a weekend day, using the triple pass 24h recall method (Appendices H and I, LIDNS CD, provide more information about the 24h recall methodology).
- The taking of physical measurements of standing height and weight, following detailed protocols (see Appendix F, LIDNS CD).

At the end of the interviewer-administered first stage, the interviewer gave each respondent completing at least three dietary recalls a token of appreciation (£40 postal order) and introduced the second stage of the survey, asking for permission for the nurse to visit.

Table 2B summarises the information collected during the interviewer stage. Some of the information collected by interviewers was limited to a particular age group, as described.

Table 2B	
CAPI questionnaire	Respondent
Household information	MFP/aged 18 and over
Information on the circumstances and attitudes that could affect dietary intake	All ages (with smoking and drinking questions administered via self-completion for younger respondents)
Employment status, educational background	Aged 16 and over
Physical measurements	
Height	All ages
Weight	All ages
Collection of dietary data	
24h recalls	All ages
Self completion	
‘How do you eat?’ booklet	Aged 12 and over
Smoking and drinking	Aged 8-15 ⁸

CAPI questionnaire

The CAPI questionnaire had three elements: household composition/structure interview, MFP interview and individual interview, organised into modules.

The MFP questionnaire was divided into the following sections:

- Cooking facilities (e.g. access to a working freezer, oven, microwave).
- Shopping for food (e.g. main type of shop used, distance from home).
- Food preparation for different types of food (e.g. boil, steam, roast, fry, grill).

- Cooking skills (e.g. use of convenience foods, preparing meals from basic ingredients).
- Free foods (e.g. foods which are grown by the household or are given to them free of charge).

The individual questionnaire had two parts: Part I, which was asked before the first 24h recall; and Part II, which was asked after the final 24h recall.

Each part was divided into a number of sections. These sections are shown in order in Table 2C for Parts I and II, and the intended respondents are indicated.

PART I sections	Respondent
Cooking skills (Adult)	Aged 16 and over (excluding those aged 16/17 and in full-time education)
Access to food at school	Aged under 16 (or aged 16/17 and in full-time education)
Cooking skills (Child)	Aged under 16 (or aged 16/17 and in full-time education)
Eating habits	All
General health	All
Dental health	Aged 16 and over
Weight change	Aged 19 and over
Drinking	Aged 8 and over (those aged 8-15 given a self-completion booklet)
Smoking	Aged 8 and over (those aged 8-15 given a self completion booklet) ⁸
Physical activity	All (different versions for those aged 2-15 and aged 16 and over)
Education	Aged 16 and over
Income	Respondent I only (always asked of an adult)
PART II sections	Respondent
Attitudes and barriers	Aged 16 and over
Food security	Respondent I or MFP
Coping strategies	Respondent I or MFP

Collection of dietary data: 24h recall method

Interviewers aimed to ask respondents about food and drink consumption for four 24h periods. The 24h recall method used was the 'triple pass' method, which gives respondents three opportunities to think through what they ate and drank over the previous 24h period. Initially, respondents were asked to provide a 'quick list' (first pass) of all the items that they ate or drank on the previous day (midnight to midnight). This was done without interruption from the interviewer. Next the interviewer went through the 'quick list' gathering details to identify fully each item and to quantify the amount. A 'third pass' consisted of the interviewer probing for additional foods consumed at each occasion mentioned, as well as between occasions. The fieldwork documents can be found in Appendix C (see LIDNS CD), while further detail about the 24h recall and coding methodology (and the database used to code foods and drinks consumed by respondents) are provided in Appendices H, I and N (see LIDNS CD).

At the end of the interview, respondents were asked for their consent to pass their name, address and date of birth to both the NHS Central Register and the Cancer Registry, so that, in future, cause of death or type of cancer can be linked with their answers in LIDNS for research purposes only. Written consent was obtained from those who agreed to this (or from a parent for those aged 2-15).

2.4.3 The nurse visit

The second stage of the survey was carried out by a qualified nurse. All individuals completing three or four dietary recalls were eligible for a nurse visit.

Before the nurse carried out any measurements, the respondent was given and asked to read a leaflet that described the measurements the nurse would take and their purpose (a copy can be found in Appendix B, LIDNS CD). The nurse collected details of any prescribed medications and non-prescribed dietary supplements before taking, with agreement, a number of physical measurements. The nurse fieldwork documents can be found in Appendix D (see LIDNS CD).

As at the interviewer stage, some of the information collected by nurses was limited to a particular age group. Table 2D summarises the information collected and procedures undertaken.

Table 2D	
Measurement or procedure	Respondent
Details of prescribed drugs and dietary supplements	All ages
Blood pressure	Aged 4 and over
Waist and hip circumferences	Aged 11 and over
Demi-span ⁹	Where height could not be measured
Mid Upper Arm Circumference (MUAC)	Aged 2-15
Blood sampling	Aged 8 and over

After taking the measurements, the nurse asked all eligible respondents (aged 8 and over) if they were willing to give a small blood sample (1.6ml) by venepuncture. Before a blood sample was taken, written consent was obtained from the respondent. For children aged 8-17, the additional written consent of a parent or guardian (with legal parental responsibility) was required. Nurses also asked respondents for consent to store part of the blood sample for additional analyses at a future date; if the respondent agreed, written consent was obtained. (See Appendix E for copies of the consent documents and Appendix J for more detail about blood sample processing, both on the LIDNS CD.) The blood analytes are listed in Appendix K; the methods of blood analysis (and quality control) are described in Appendix L (see LIDNS CD for both appendices).

2.4.4 Interviewing and measuring children

Permission to interview children aged 15 or younger was obtained from the child's parent or legal guardian.

Children aged 11-15 were interviewed directly, and interviewers were instructed to ensure that the child's parent or guardian was present in the home throughout the interview (and for those aged 11-12, the parent had to be in the room whilst the child was being interviewed).

Information about younger children (aged 2-10) was collected from a parent. Children were present, where possible, while their parent answered questions about them. This was partly because the interviewer had to measure their height and weight (usually on the second visit)

and also, in the case of those aged 8 and over, because the child was asked to complete a short self-completion booklet during the interview. It also ensured that the child could contribute information.

Permission for a nurse to carry out any measurements on a child aged under 16 had to be obtained from the child's parent or someone else with legal parental responsibility for that child. This person had to be present during the nurse visit.

2.4.5 Proxy interviews

Apart from interviews with young children, individual interviews by proxy were not allowed. The MFP interview could be carried out with an adult respondent if the MFP was not available at any of the interviewer visits.

2.4.6 Feedback to respondents and GPs

Each respondent was given a Measurement Record Card on which the interviewer and nurse recorded the person's height, weight and other anthropometric measurements. Respondents were also given the opportunity to receive selected results of the blood sample analyses and were asked if they wanted details of these analyses, their Body Mass Index and their blood pressure to be sent to their GP (see Appendices G and M, LIDNS CD, for further details of feedback to respondents). If they did, written consent was obtained from the individual (or from the parent in the case of a child).

2.5 Fieldwork quality control

2.5.1 Project specific training for interviewers and nurses

Fieldwork in England, Scotland and Wales was carried out by National Centre for Social Research's (NatCen) panel of interviewers and nurses. In Northern Ireland, fieldwork was carried out by interviewers and nurses working for the Central Survey Unit of the NI Statistics and Research Agency (NISRA).

All interviewers and nurses working on LIDNS were briefed and trained before undertaking an assignment. Fieldworkers were also issued with comprehensive written instructions covering survey procedures and measurement protocols.

2.5.2 Briefing sessions for interviewers

Interviewers attended a three-day training course at which they were fully briefed on the administration of the survey. The briefing sessions covered background and content, screening and doorstep approach, questionnaire administration (including practice sessions), and the administration, checking, probing and coding of the 24h dietary recalls. Interviewers were also trained in taking height and weight measurements.

2.5.3 Briefing sessions for nurses

Each nurse attended a training session (one-day for nurses with Health Survey for England experience, two days for all others) at which they received equipment training, and training in the specific requirements of LIDNS with respect to taking blood pressure, anthropometric measurements and blood samples.

2.6 Ethical approval

Ethical approval for the study was obtained from the London Multi-Centre Research Ethics Committee (MREC). The letter of approval was sent to all Local Research Ethics Committees (LRECs) covering areas where fieldwork was being conducted. Research governance¹⁰ was obtained for all participating hospital laboratories.

2.7 Introduction to response analysis

Sections 2.8-2.10 give details of response to each of the main components of the survey. They look first at the response of sampled households (Table 2.1), then at that of eligible individuals within these households (Tables 2.2a, 2.2b, 2.4, 2.5a, 2.5b). Table 2.3 provides a summary of household and individual level response rates, by country and overall, achieved at the main survey stages.

A small proportion (4%) of households originally coded as productive during fieldwork were subsequently recoded as 'ineligible' and removed from the analysis dataset during post-interview editing. The reasons for recoding were:

- Detailed scrutiny of income information collected during the interview revealed that the household income was not sufficiently low for inclusion in the LIDNS sample (39 households).
- A corrected deprivation score showed that the household should have been screened out (50 households).
- 24h recall booklets were never received in the office (presumed lost in the post) for coding and editing (27 households).

Reporting in subsequent chapters is based on the 3728 individuals in 2477 households available for analysis.

2.8 Household level response

Overall, 89% of the 25,818 issued addresses (i.e. the number of issued addresses after sample reduction, as described in Section 2.3.2) were eligible for screening. Of these, 82% completed the screening questionnaire administered on the doorstep by interviewers (further analysis of the screening questionnaire is provided in Section 2.13). The target was to screen in about 20% of selected addresses. In the event, 19% of households completing the questionnaire were screened in. However, this proportion fell to 18% once households considered insufficiently low income were removed from the dataset (see Section 2.7). Interviews were started at 72% of screened-in households.¹¹

A higher proportion of households completed the screening questionnaire in Northern Ireland (88%) than in the other countries (82% in both Scotland and Wales, 80% in England). The lowest screening rate was in the South of England (78%).

The original (i.e. before discarding the insufficiently low income) screened-in rate was on target in Scotland (20%) and England (19%) but was lower than expected in Wales and Northern Ireland (16% in each country). Within England, a higher proportion of households in the North were screened in (22%) than the other regions (20% in the Central/Midlands area and 17% in the South).

The proportion of all households starting the household interview was highest in Scotland (76%) and lowest in the Central/Midlands area (69%). (Table 2.1)

2.9 Individual level response

2.9.1 Overall

Within productive households the vast majority of the selected respondents were interviewed (97%), that is, they started the individual questionnaire or a dietary recall. Once individuals started, they were very likely to become fully productive (that is, completing three or four dietary recalls). Ninety-two percent of selected individuals were coded as fully productive.¹² This gives a final response rate of eligible individuals classified as fully productive of 55%: i.e. response to the screening questionnaire *times* response at the household level *times* response at the individual level. After excluding individuals in the 27 households originally coded as fully productive who were not available for analysis purposes (see Section 2.7), there were 3728 individuals categorised as eligible and fully productive. Response rates for subsequent stages/components are based on these 3728 individuals.

Interviewers obtained valid height and weight measurements for the vast majority of fully productive respondents (95% for both measurements). Nine in ten respondents (90%) agreed to progress to the second stage of the study, that is to be visited by a qualified nurse. Some individuals were lost before the nurse visit due to subsequent refusal or non-contact, so that 81% of individuals who agreed were successfully visited (73% of all fully productive individuals). Boys were less likely than others to be visited by the nurse: 66% of boys aged 2-18 were visited by a nurse, compared with 72% of girls, 73% of men and 75% of women.

The nurse attempted to take a number of age-dependent measurements from those she visited. Nurses obtained a blood pressure measurement from just under three-quarters of fully productive adults (72% of men and 73% of women). Sixty-six percent of girls and 61% of boys (aged 4-18) had their blood pressure measured.

Similar differences were seen in terms of the waist and hip circumference measurements: measurements were successfully obtained from 70% of men, 72% of women, 65% of girls and 61% of boys (aged 11-18).

Nurses successfully measured the mid-upper arm circumference of 66% of children aged 2-15. Girls were more likely to be measured than boys (69% and 63%, respectively).

Respondents aged 8 and over were asked whether they would be willing to provide a small sample of blood. Half (49%) of such respondents agreed to provide a sample and blood was obtained from 93% of these (46% of fully productive respondents). Adults were more willing than children to provide a sample (55% of women and 53% of men agreed to do so compared with 25% of girls and 21% of boys). Samples were obtained from half of adult respondents (51% of men and women). Co-operation rates amongst children were low: blood samples were obtained from just 18% of boys and 22% of girls. Response was particularly low amongst younger children (aged 8-10). (Tables 2.2a, 2.2b, 2.3, 2.4)

2.9.2 Response by ethnic group

A higher proportion of White than non-White respondents agreed to see the nurse (91% and 82% respectively) and were subsequently visited (74% of White respondents compared with 62% of non-White respondents). These differences were particularly pronounced for men (75% of White men and 46% of non-White men were visited by the nurse). (Tables 2.5a, 2.5b)

2.10 Response by survey stage by country

Table 2.3 summarises the key response rates by country. Response rates are shown by the individual key components (stages) and cumulatively (overall), taking into account the various stages of attrition, at both the household and the individual levels.

At the household level, 60% of eligible (screened-in) households started the household interview. This proportion varied slightly between countries from 58% in England to 63% in Northern Ireland.

At the individual level, there were small differences between countries in the proportion of selected individuals completing three or four dietary recalls (94% in Scotland and in Wales, 93% in Northern Ireland and 91% in England). Overall, fully productive interviews were achieved with 55% of individuals in screened-in households (59% in both Scotland and Northern Ireland, 55% in Wales and 52% in England). Forty percent of individuals in eligible households were visited by the nurse. Nurse visit rates in England, Scotland and Wales were similar (37%-38%) but a higher rate (49%) was obtained in Northern Ireland.

Blood sample response rates are based on respondents aged 8 and over. An overall blood sample response rate of 25% of eligible individuals was achieved. Blood sample response rates ranged from 21% in Wales to 34% in Northern Ireland. **(Table 2.3)**

2.11 Weighting the data

As described in Section 2.2, the LIDNS sample used a multi-stage clustered design. The sample was not an equal probability sample, as a fixed number of wards were selected in each country, meaning Scotland, Wales and Northern Ireland were sampled at a higher rate than England. In addition, deprived wards were over-sampled. This means that any findings based on unweighted data analysis will be biased toward deprived areas and toward Scotland, Wales and Northern Ireland.

Furthermore, the multi-stage design means there were a number of stages in the survey where it was possible for respondents to drop out. If the people who refused to participate at a particular stage are systematically different from those who took part then the sample will be biased.

Weights were therefore needed for two reasons: to remove any bias in the observed results resulting from unequal selection probabilities; and to attempt to reduce non-response bias.

There were two stages to the weighting scheme: the first was to generate a set of design weights to correct the unequal selection probabilities; and the second was to create a set of weights to adjust for non-response. The final weights were a product of the selection weights and the non-response weights. More detailed information about the weighting scheme and any impact of weighting on key survey estimates is provided in Appendix O, LIDNS CD.

2.12 Analysis of the screening instrument

2.12.1 Introduction

As described in Section 2.2.5, a member of each contacted household was asked a series of questions to determine whether or not the household appeared to be materially deprived and hence eligible for inclusion in LIDNS (see Appendix C, LIDNS CD). Households could score a maximum of eight points.

Table 2.6 shows the total number of screening questions on deprivation for which a point was awarded ('number of deprivation items scored at'), by outcome of screened-in households. Overall, there was no clear pattern between material deprivation (as measured by the D score) and the likelihood of screened-in households taking part in LIDNS. The mean deprivation scores for unproductive households and productive households were very similar (4.0 and 4.1, respectively). Moreover, although a chi-squared analysis showed a statistically significant difference in the distribution of D scores between unproductive and productive households (Figure 2A), the pattern was not consistent: a higher percentage of households with D scores of 4 were unproductive, but there was a higher proportion of households with D scores of 6 who were productive. **(Table 2.6, Figure 2A)**

Figure 2A



chi-squared test: $p < 0.001$

Table 2.7 shows the D score for all screened households and how they accumulated their D score. Six in ten (59%) of screened-out households did not score at any questions, and a further 28% had a score of only 1. The mean D score was 0.6 for screened-out households, much lower than the mean score of 4.1 for screened-in households.

Where screened-out households did score, they did so most frequently for having no car or a car at least 10 years old (23%), or living in rented accommodation (18%). Very few screened-out households contained a lone parent working less than 10 hours a week (1%) or were in receipt of state benefits.

Screened-in households also scored highly for having no car or a car at least 10 years old (82%), and for living in rented accommodation (83%), but also for having no household member in paid work for at least 10 hours a week (54%), or for being in receipt of income support or jobseekers' allowance (45%) or housing or council tax benefit (82%). (Table 2.7)

2.12.2 Borderline deprivation scores

Households with a deprivation score of four or more were automatically screened-in; households scoring zero or one were screened-out. Borderline cases scoring two or three were asked a further question about household income to determine eligibility.

Seventy-five percent of households with a deprivation score of two were screened-out on the basis of their response to the income question (or for refusing/being unable to provide an estimate of household income), compared with 36% of those scoring three. This suggests that, on the whole, the screening questionnaire was picking up the target sample of low income households.

2.12.3 Representativeness of households responding to the screening questionnaire

The sample of households which responded to the screening questionnaire, when weighted by the selection weights, should be representative of households in the general population. Hence the weighted sample of screened households can be compared with national population estimates to check for non-response bias.

Table 2.8 compares the age distribution of all people living in households which responded to the screening questionnaire with figures taken from the 2003 mid-year (general) population estimates produced by the Office for National Statistics. The age distribution of the screened sample is very close to that of the general population within each country. (Table 2.8)

A similar comparison was also made between the deprivation indices on the sampling frame and those of the screened sample. This showed small variations in response by deprivation, but

it seems likely that these differences were mainly due to sampling error, rather than non-response. (Table not available.) In terms of age and deprivation, therefore, the screened sample seems a reasonable representation of the general population.

2.13 Analysis of the non-response questionnaire

2.13.1 Introduction

A series of questions was added to the screening instrument, to assess possible non-response bias.

This section looks at all households that answered the screening questions and were screened-in, i.e. were deemed eligible to participate in the main stage of the study according to their D score. Comparisons are made between 'productive' households, i.e. households where at least the household interview was started, and 'unproductive' households, i.e. where the household interview was not started. The objective of the analysis is to establish whether there were significant differences in the characteristics of responding and non-responding eligible households.

It should be remembered that the respondents to the screening questionnaire were not necessarily those selected as dietary respondents in the main survey. They were simply the adult representative of the household who happened to answer the door and who agreed to answer the screening questions.

2.13.2 Socio-demographic characteristics and smoking behaviour

The results shown in Table 2.9 suggest that there are no statistically significant differences between responding and non-responding households with regard to the sex of the person answering the screening questions on the doorstep.

Households where respondents to the screening questionnaire were aged under 65 were more likely to become productive than households where doorstep respondents were older.

There are modest but statistically significant differences between productive and unproductive households with regard to ethnicity, with White households being marginally more likely to become productive than non-White households. **(Table 2.9)**

While Table 2.9 focuses on characteristics of individuals completing the screening questionnaire, Table 2.10 compares characteristics of the households to which these individuals belong. The comparisons are made with regard to household type and whether anyone in the household smoked (at least one cigarette per day).

Productive households were more likely to include one adult and one or more children than were unproductive households (22% compared with 15%). Adult-only households were less likely to take part.

Productive households were more likely than unproductive households to contain a smoker (51% compared with 41%).¹³ **(Table 2.10)**

2.13.3 Dietary questions

On the doorstep, respondents to the screening questionnaire were asked whether they had consumed each of eleven specified types of food within the last two days. Table 2.11 shows the percentage of respondents within productive and unproductive households who reported having consumed the food within the previous two days. Although the respondent's habits were not necessarily those of the household as a whole, and results were obtained for only two days, the patterns of consumption in productive and unproductive households were intended to give a rough indication of the differences (if any) in eating habits between the two groups.

The foods have been divided into two categories: 'more healthy' and 'less healthy'. 'More healthy' foods are those for which the Food Standards Agency (the Agency) has guidelines promoting greater consumption (e.g. whole grain products, fruit and vegetables, and oily fish); conversely, 'less healthy' foods are those for which the Agency and the Department of Health encourage lower levels of consumption (e.g. full-fat milk, sugar, and foods high in fat and saturated fat).¹⁴ Unproductive households reported eating whole grain or high fibre breakfast cereals more often than productive households (52% compared with 47%). Unproductive households also reported eating more leafy green vegetables (66% compared with 60%) and more fruit (73% compared with 69%). There were no other statistically significant differences with regard to 'more healthy' foods. There were no significant differences with regard to any of the items from the 'less healthy' list. (Table 2.11)

2.13.4 Food security questions

Respondents to the screening questionnaire were asked three questions related to food security and the results are presented in Table 2.12. (These questions are not part of the food security questionnaire described in Chapter 20.) Some categories were combined to ensure that there are enough respondents in each cell of the table. The results suggest that doorstep respondents in productive households were more likely than those in unproductive households to say they were worried that their food might run out because they did not have money to buy more. (Table 2.12)

2.13.5 Assessment of non-response bias

The results of the analysis presented in this section suggest that the productive sample may be slightly biased towards more materially deprived, younger, White, smoking respondents living in households with children. There was some evidence that the food habits of productive households may differ from those of unproductive households (with productive respondents more likely to have a less healthy diet), but the differences were small.

2.14 Availability of unpublished data

A copy of the LIDNS data will be deposited with the Data Archive at the University of Essex. Copies of anonymised data files can be made available for specific research projects through the Archive (www.data-archive.ac.uk).

Notes and references

- 1 'Wards' are one of the key building blocks of UK administrative geography. They are spatial units used to elect councillors in metropolitan and non-metropolitan districts, unitary authorities and the London boroughs in England; unitary authorities in Wales; council areas in Scotland; and district council areas in Northern Ireland.
- 2 The deprivation indicators were compiled separately for all four countries in the UK by the same team at the University of Oxford. Although not directly comparable across countries, the domains were created using the same method, utilise similar information and behave in the same way. They were the most up-to-date sources of information on local deprivation available.
- 3 The 'small users' sub-file of the Postcode Address File (PAF) is a computer list, prepared by the Post Office, of all the addresses (delivery points) which receive fewer than 25 articles of mail a day.
- 4 Using results from other National Centre for Social Research (NatCen) surveys, it was possible to estimate the number of eligible addresses in each deprivation quintile, so that the achieved sample would include some interviews from each quintile in each country, but it would be skewed towards the most deprived areas to be more cost effective. Thus the sample was designed so that, in each country, the estimated number of eligible households per sampling point increased from the least deprived to the most deprived quintiles. There was also the practical constraint of allocating addresses to interviewers, so it was decided that the number of addresses issued per ward should be the same in England, Scotland and Wales (except for wards in the most deprived quintile). Only Northern Ireland differed in this respect, due to the higher proportion of its wards in the top two (i.e. least deprived) quintiles.

- 5 No addresses were removed from the samples in Wales or Northern Ireland, as the response and screening rates in these countries were close to the estimates used for the sample design.
- 6 The Main Food Provider (MFP) is the person in the household with the main responsibility for shopping and preparing food. If these tasks are equally shared between two people, for example if one person does all the shopping and another person does all the cooking, then either resident could be classified as the MFP.
- 7 Blood sampling was restricted to those aged 8 and over. Details regarding blood sampling are given in Chapter 14 (and Appendices J, K, L and M, LIDNS CD).
- 8 Respondents aged 16-25 were given the option of using a self-completion booklet for the questions on smoking and drinking in order to provide more privacy and to avoid disclosing their answers to other household members.
- 9 Demi-span was measured in respondents for whom, for postural reasons, a measure of height would give a poor measure of stature (e.g. in some elderly people, or for people with certain disabilities). Demi-span is strongly related to a person's height and is the distance between the sternal notch and the finger roots with the arm outstretched laterally.
- 10 The Research Governance Framework is intended to define the broad principles of good research practice, and to ensure that health and social care research is conducted to high scientific and ethical standards.
- 11 Interviews were in fact started at 73% of screened-in households, but 27 were subsequently discarded due to non-receipt of 24h recall booklets for post-fieldwork coding and editing.
- 12 Of the fully productive individuals, 3656 completed all 4 diary days and 72 completed 3 days. References in the report to 'fully productive' individuals or to those completing '4 diary days' also include the small number of individuals who completed 3 diary days.
- 13 This difference in the smoking behaviour between productive and unproductive households may be accounted for by the difference in their age profile. Among screened-in households where the doorstep respondent was aged under 65, 60% contained a smoker, while among households where the doorstep respondent was aged 65 and over only 22% did.
- 14 Foods highlighted as being particularly relevant to policy, as defined by the Agency, include: fruit; vegetables; oily fish; pasta; rice; pizza; other cereals; wholegrain and high fibre breakfast cereals; meat and meat products; crisps and savoury snacks; soft drinks; wholemeal bread; buns, cakes and pastries; puddings; milk; poly and not polyunsaturated margarines.

Tables

- 2.1 Response of issued addresses, by country/region
- 2.2a Response of fully productive adults to key survey stages, by sex and country/region
- 2.2b Response of fully productive children to key survey stages, by sex and country/region
- 2.3 Summary of response rates, by country
- 2.4 Response of fully productive respondents to key survey stages, by sex and age
- 2.5a Response of fully productive adults to key survey stages, by sex and ethnic group
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- 2.6 Number of deprivation items scored at on the screening questionnaire, by outcome of screened-in households
- 2.7 Deprivation items that screened-in households scored at, by outcome of screening questionnaire
- 2.8 Comparison of the age distribution of the population and all members of responding households in the screened sample, by country
- 2.9 Socio-demographic characteristics of individuals completing the screening questionnaire in screened-in households, by outcome of screened-in households
- 2.10 Household type and smoking behaviour of screened-in households, by outcome of screened-in households
- 2.11 Reported consumption of specific items of food in the previous two days in the screening questionnaire, by outcome of screened-in households
- 2.12 Responses to the screening questions on food security , by outcome of screened-in households

Table 2.1

Response of issued addresses, by country/region																
<i>Issued addresses</i>																
Response	Country/region									Total						
	England				Scotland		Wales		Northern Ireland							
	North		Central/Midlands		South		All England									
	N	%	N	%	N	%	N	%	N	%						
Ineligible for screening ^a	602	11	261	9	746	10	1609	10	316	13	377	11	440	13	2742	11
Eligible for screening ^b	5083	89	2765	91	7063	90	14911	90	2204	87	3017	89	2944	87	23076	89
Of households eligible for screening																
Screened	4153	82	2322	84	5492	78	11967	80	1808	82	2459	82	2576	88	18810	82
Of screened households																
Screened-in ^c	918	22	465	20	896	16	2279	19	362	20	396	16	424	16	3461	18
Of screened-in households																
Productive households ^d	671	73	319	69	626	70	1616	71	275	76	285	72	301	71	2477	72
<i>Base (unweighted)</i>	5685		3026		7809		16520		2520		3394		3384		25818	

^a Addresses that are not eligible for inclusion in the study e.g. vacant or derelict properties, second homes or non-residential properties/institutions.

^b Sampled addresses which are traceable, residential and occupied as a main residence.

^c Screened-in excludes 89 households discarded during analysis because they were not sufficiently low income/materially deprived.

^d This excludes 27 households discarded due to non-receipt of the 24h recall booklets for post-fieldwork coding and editing.

Table 2.2a

Response of fully productive adults to key survey stages, by sex and country/region																
<i>Fully productive adults^a</i>																
Response to key survey stages	Country/region									Total						
	England				Scotland		Wales		Northern Ireland							
	North		Central/Midlands		South		All England									
	N	%	N	%	N	%	N	%	N	%						
Men																
Height measured	246	96	118	90	211	95	575	94	113	94	105	96	96	89	889	94
Weight measured	245	95	118	90	209	95	572	94	111	93	105	96	95	88	883	93
Visited by nurse	195	76	94	72	154	70	443	73	81	68	76	70	90	83	690	73
Blood pressure measured	192	75	94	72	151	68	437	72	79	66	76	70	90	83	682	72
Waist-hip ratio measured	189	74	90	69	146	66	425	70	79	66	73	67	88	81	665	70
Consented to give blood sample	134	52	72	55	109	49	315	52	65	54	53	49	72	67	505	53
Blood sample obtained	128	50	71	54	101	46	300	49	62	52	50	46	72	67	484	51
Women																
Height measured	481	95	223	94	456	95	1160	95	183	94	195	92	212	95	1750	95
Weight measured	480	95	227	96	456	95	1163	95	181	93	198	93	212	95	1754	95
Visited by nurse	387	77	166	70	358	74	911	75	134	69	147	69	192	86	1384	75
Blood pressure measured	379	75	165	70	348	72	892	73	132	68	144	68	190	86	1358	73
Waist-hip ratio measured	376	75	164	69	349	73	889	73	119	61	139	66	185	83	1332	72
Consented to give blood sample	291	58	117	49	262	54	670	55	103	53	102	48	149	67	1024	55
Blood sample obtained	276	55	107	45	239	50	622	51	96	49	94	44	139	63	951	51
<i>Base (unweighted)</i>																
<i>Fully productive men</i>	257		131		221		609		120		109		108		946	
<i>Fully productive women</i>	504		237		481		1222		194		212		222		1850	

^a Respondents completing three or four 24h dietary recalls, excluding individuals rejected during analysis.

Table 2.2b

Response of fully productive children to key survey stages, by sex and country/region

Fully productive children^a

Response to key survey stages	Country/region								Total							
	England				Scotland	Wales	Northern Ireland									
	North		Central/Midlands		South	All England										
	N	%	N	%	N	%	N	%	N	%						
Boys																
Height measured	109	96	58	94	109	96	276	96	38	97	47	96	57	92	418	95
Weight measured	110	97	58	94	111	97	279	97	37	95	48	98	57	92	421	96
Visited by nurse	77	68	43	69	79	69	199	69	11	28	31	63	50	81	291	66
Blood pressure measured ¹	57	63	33	62	56	60	146	61	10	29	29	62	42	81	227	61
Waist-hip ratio measured ²	31	71	16	59	29	58	76	63	4	25	13	48	29	81	122	61
Mid-upper arm circumference measured ³	61	65	37	69	62	66	160	66	10	29	28	61	33	79	231	63
Consented to give blood sample ⁴	14	22	12	30	12	17	38	22	2	8	5	13	15	38	60	21
Blood sample obtained ⁴	10	15	12	30	10	14	32	18	1	4	3	8	15	38	51	18
Girls																
Height measured	121	96	60	97	121	97	302	96	37	95	64	96	71	96	474	96
Weight measured	121	96	60	97	121	97	302	96	39	100	63	94	70	95	474	96
Visited by nurse	90	71	40	65	96	77	226	72	23	59	47	70	60	81	356	72
Blood pressure measured ⁵	68	64	30	58	72	68	170	64	18	55	34	64	50	78	272	66
Waist-hip ratio measured ⁶	33	58	14	54	32	67	79	60	9	50	19	70	33	82	140	65
Mid-upper arm circumference measured ⁷	75	68	35	64	80	71	190	69	18	51	39	66	50	81	297	69
Consented to give blood sample ⁸	17	21	10	29	22	31	49	26	6	26	5	13	17	31	77	25
Blood sample obtained ⁸	15	19	9	26	18	25	42	22	6	26	3	8	15	28	66	22
<i>Base (unweighted)</i>																
Fully productive boys aged 2-18	113		62		114		289		39		49		62		439	
¹ Fully productive boys aged 4-18	91		53		94		238		34		47		52		371	
² Fully productive boys aged 11-18	44		27		50		121		16		27		36		200	
³ Fully productive boys aged 2-15	94		54		94		242		34		46		42		364	
⁴ Fully productive boys aged 8-18	65		40		71		176		26		39		39		280	
Fully productive girls aged 2-18	126		62		125		313		39		67		74		493	
⁵ Fully productive girls aged 4-18	106		52		106		264		33		53		64		414	
⁶ Fully productive girls aged 11-18	57		26		48		131		18		27		39		215	
⁷ Fully productive girls aged 2-15	110		55		112		277		35		59		62		433	
⁸ Fully productive girls aged 8-18	80		35		72		187		23		40		54		304	

^a Respondents completing three or four 24h dietary recalls, excluding individuals rejected during analysis.

Table 2.3

Summary of response rates, by country

Response to key survey stages	Country								Total	
	England		Scotland		Wales		Northern Ireland		By stage	Overall
	By stage	Overall	By stage	Overall	By stage	Overall	By stage	Overall		
%	%	%	%	%	%	%	%	%	%	
Households										
Eligible for screening ^a	90	100	87	100	89	100	87	100	89	100
Screened-in ^b	19		20		16		16		18	
Productive households ^c	71	58	76	62	72	59	71	63	72	60
Individuals in productive households										
Interviewed ^d	97	56	97	60	97	57	96	61	97	58
Fully productive ^e	91	52	94	59	94	55	93	59	92	55
Visited by nurse	73	38	64	37	69	38	84	49	73	40
Blood sample obtained (aged 8+)	45	24	45	26	38	21	57	34	46	25

^a Sampled addresses which are traceable, residential and occupied as a main residence.

^b Screened-in excludes 89 households discarded during analysis because they were not sufficiently low-income/materially deprived.

^c This excludes 27 households discarded due to non-receipt of the 24h recall booklets for post-fieldwork coding and editing.

^d Interviewed respondents are those who completed the household questionnaire and started an individual interview.

^e Respondents completing three or four 24h dietary recalls, excluding individuals rejected during analysis.

Table 2.4

Response of fully productive respondents to key survey stages, by sex and age

Fully productive respondents^a

Response to key survey stages	Age group															
	2-10		11-18		Total children	19-34		35-49		50-64		65+		Total adults		
	N	%	N	%		N	%	N	%	N	%	N	%			
Males																
Height measured	224	94	194	97	418	95	185	95	215	95	237	92	252	94	889	94
Weight measured	226	95	195	98	421	96	185	95	211	93	233	90	254	95	883	93
Visited by nurse	162	68	129	65	291	66	118	61	157	69	206	80	209	78	690	73
Blood pressure measured ¹	101	59	126	63	227	61	117	60	155	69	205	79	205	76	682	72
Waist-hip ratio measured ²	-	-	122	61	122	61	115	59	151	67	197	76	202	75	665	70
Mid-upper arm circumference measured ³	152	64	79	63	231	63	-	-	-	-	-	-	-	-	-	-
Consented to give blood sample ⁴	12	15	48	24	60	21	68	35	113	50	151	59	173	65	505	53
Blood sample obtained ⁴	10	13	41	21	51	18	68	35	110	49	146	57	160	60	484	51
Females																
Height measured	264	95	210	98	474	96	471	98	482	98	314	93	483	90	1750	95
Weight measured	268	96	206	96	474	96	468	97	476	96	317	94	493	92	1754	95
Visited by nurse	202	73	154	72	356	72	339	70	377	76	273	81	395	74	1384	75
Blood pressure measured ⁵	123	62	149	69	272	66	328	68	373	75	269	80	388	72	1358	73
Waist-hip ratio measured ⁶	-	-	139	65	139	65	326	67	368	74	259	77	379	71	1332	72
Mid-upper arm circumference measured ⁷	189	68	108	70	297	69	-	-	-	-	-	-	-	-	-	-
Consented to give blood sample ⁸	18	20	59	27	77	25	222	46	279	56	219	65	304	57	1024	55
Blood sample obtained ⁸	15	17	51	24	66	22	210	43	258	52	198	59	285	53	951	51
Base (unweighted)																
Fully productive males	239		200		439		194		226		258		268		946	
¹ Fully productive males aged 4 and over	171		200		371		194		226		258		268		946	
² Fully productive males aged 11 and over			200		200		194		226		258		268		946	
³ Fully productive males aged 2-15	239		125		364											
⁴ Fully productive males aged 8 and over	80		200		280		194		226		258		268		946	
Fully productive females	278		215		493		483		494		336		537		1850	
⁵ Fully productive females aged 4 and over	199		215		414		483		494		336		537		1850	
⁶ Fully productive females aged 11 and over			215		414		483		494		336		537		1850	
⁷ Fully productive females aged 2-15	278		155		433											
⁸ Fully productive females aged 8 and over	89		215		304		483		494		336		537		1850	

^a Respondents completing three or four 24h dietary recalls, excluding individuals rejected during analysis.

Table 2.5a

Response of fully productive adults to key survey stages, by sex and ethnic group

Fully productive adults^a

Response to key survey stages	Ethnic group				Total	
	White		Non-White		N %	
	N	%	N	%		
Men						
Height measured	823	94	66	94	889	94
Weight measured	818	93	65	93	883	93
Visited by nurse	658	75	32	46	690	73
Blood pressure measured	650	74	32	46	682	72
Waist-hip ratio measured	633	72	32	46	665	70
Consented to give blood sample	481	55	24	34	505	53
Blood sample obtained	461	53	23	33	484	51
Women						
Height measured	1618	94	132	96	1750	95
Weight measured	1622	95	132	96	1754	95
Visited by nurse	1292	75	92	67	1384	75
Blood pressure measured	1270	74	88	64	1358	73
Waist-hip ratio measured	1242	73	90	66	1332	72
Consented to give blood sample	957	56	67	49	1024	55
Blood sample obtained	889	52	62	45	951	51
<i>Base (unweighted)</i>						
Fully productive men	876		70		946	
Fully productive women	1713		137		1850	

^a Respondents completing three or four 24h dietary recalls, excluding individuals rejected during analysis.

Table 2.6

Number of deprivation items scored at on the screening questionnaire, by outcome of screened-in households

Screened-in households^a

Number of deprivation items scored at	Outcome of screened-in households				Total	
	Unproductive		Productive ^b		N %	
	N	%	N	%		
D score						
2	130	13	381	15	511	15
3	226	23	541	22	767	22
4	302	31	515	21	817	24
5	189	19	533	22	722	21
6	125	13	488	20	613	18
7	10	1	19	1	29	1
8	-	-	-	-	-	-
Mean D score	4.0		4.1		4.1	
<i>Base (unweighted)</i>						
	982		2477		3459	

- No observations

^a Excludes 2 unproductive households for whom deprivation score information is missing.

^b Excludes those households discarded during analysis because they were not sufficiently low income/materially deprived or because of non-receipt of the 24h recall booklets for post-fieldwork coding and editing.

Table 2.5b

Response of fully productive children to key survey stages, by sex and ethnic group

Fully productive children^a

Response to key survey stages	Ethnic group				Total	
	White		Non-White		N %	
	N	%	N	%		
Boys						
Height measured	368	96	50	91	418	95
Weight measured	370	96	51	93	421	96
Visited by nurse	256	67	35	64	291	66
Blood pressure measured ¹	202	62	25	57	227	61
Waist-hip ratio measured ²	110	62	12	57	122	61
Mid-upper arm circumference measured ³	204	65	27	56	231	63
Consented to give blood sample ⁴	52	21	8	23	60	21
Blood sample obtained ⁴	45	18	6	17	51	18
Girls						
Height measured	397	97	77	94	474	96
Weight measured	396	96	78	95	474	96
Visited by nurse	302	73	54	66	356	72
Blood pressure measured ⁵	232	67	40	60	272	66
Waist-hip ratio measured ⁶	121	66	19	58	140	65
Mid-upper arm circumference measured ⁷	251	70	46	64	297	69
Consented to give blood sample ⁸	67	26	10	22	77	25
Blood sample obtained ⁸	58	22	8	18	66	22
<i>Base (unweighted)</i>						
Fully productive boys aged 2-18	384		55		439	
¹ Fully productive boys aged 4-18	327		44		371	
² Fully productive boys aged 11-18	179		21		200	
³ Fully productive boys aged 2-15	316		48		364	
⁴ Fully productive boys aged 8-18	245		35		280	
Fully productive girls aged 2-18	411		82		493	
⁵ Fully productive girls aged 4-18	347		67		414	
⁶ Fully productive girls aged 11-18	182		33		215	
⁷ Fully productive girls aged 2-15	361		72		433	
⁸ Fully productive girls aged 8-18	259		45		304	

^a Respondents completing three or four 24h dietary recalls, excluding individuals rejected during analysis.

Table 2.7

Deprivation items that screened-in households scored at, by outcome of screening questionnaire

Screened-in households^a

Number and which deprivation items scored at	Outcome of screening questionnaire				Total	
	Screened-out ^b		Screened-in		N	%
	N	%	N	%		
D score	9068	59	-	-	9068	48
1	4291	28	-	-	4291	23
2	1545	10	511	15	2056	11
3	422	3	767	22	1189	6
4	7	0	817	24	824	4
5	5	0	722	21	727	4
6	4	0	613	18	617	3
7	-	-	29	1	29	0
8	-	-	-	-	-	-
Mean D score	0.6		4.1		1.2	
Deprivation item						
Living in rented accommodation	2766	18	2860	83	5626	30
No car or car at least 10 years old	3482	23	2843	82	6325	34
No household member in paid work for at least 10 hours a week	600	4	1852	54	2452	13
Lone parent household not working/working less than 10 hours a week	100	1	701	20	801	4
Receives incapacity benefit	515	3	755	22	1270	7
Receives income support or jobseekers' allowance	235	2	1555	45	1790	10
Pensioner household, reliant on means-tested benefits	433	3	673	19	1106	6
Receives housing benefit/council tax benefit	593	4	2843	82	3436	18
<i>Base (unweighted)</i>	<i>15342</i>		<i>3459</i>		<i>18801</i>	

^a Excludes 2 unproductive and 7 screened-out households for whom screening information is not available.

^b 89 households were originally screened-in, but were subsequently re-coded to ineligible because they were not sufficiently low income/materially deprived – see Section 2.7.

Table 2.8

Comparison of the age distribution of the population and all members of responding households in the screened sample, by country

Members of responding households

Age distribution	Members of screened households		
	All members of screened households (unweighted)	All members of screened households (weighted)	Population ^a
	%	%	%
England			
Under 2	2.3	2.3	2.3
2-17	22.3	21.3	20.0
18-59	55.6	56.1	56.9
60+	19.7	20.3	20.8
Scotland			
Under 2	2.0	1.9	2.0
2-17	20.1	19.4	19.2
18-59	58.1	58.6	57.3
60+	19.7	20.0	21.4
Wales			
Under 2	1.6	1.7	2.1
2-17	21.8	21.3	20.2
18-59	54.3	54.1	54.7
60+	22.3	22.9	23.0
Northern Ireland			
Under 2	2.0	2.1	2.5
2-17	24.0	22.6	23.5
18-59	55.2	56.3	55.9
60+	18.8	18.9	18.1
<i>Base (unweighted)</i>			
England	28,577	36,336	49,855,900
Scotland	4,066	3,675	5,057,400
Wales	5,687	2,105	2,938,000
Northern Ireland	6,503	1,510	1,702,600

^a Population figures taken from the 2003 mid-year population estimates produced by the Office for National Statistics.

Table 2.9

Socio-demographic characteristics of individuals completing the screening questionnaire, by outcome of screened-in households

Screened-in households^a

Characteristics of those completing the screening questionnaire	Outcome of screened-in households		Total	p ^b
	Unproductive	Productive		
	%	%	%	
Sex				
Male	31	29	29	n.s.
Female	69	71	71	
Age				
Under 65	60	73	69	<0.001
65 and over	40	27	31	
Ethnic group				
White	89	92	92	<0.01
Non-White	11	8	8	
<i>Base (unweighted)</i>	982	2477	3459	

^a Excludes 2 unproductive households for whom deprivation score information is missing.

^b The significance levels are based on chi-squared tests.

n.s. = not significant, p>0.05.

Table 2.10

Household type and smoking behaviour of screened-in households, by outcome of screened-in households

Screened-in households^a

Household type and smoking behaviour	Outcome of screened-in households		Total	p ^b
	Unproductive	Productive		
	%	%	%	
Household type				
Single adult	47	43	44	<0.001
1 adult plus child(ren)	15	22	20	
2+ adults, no children	23	18	19	
2+ adults with child(ren)	15	17	17	
Smoking in the household				
Household contains a smoker	41	51	49	<0.001
Household does not contain a smoker	59	49	51	
<i>Base (unweighted)</i>	982	2477	3459	

^a Excludes 2 unproductive households for whom deprivation score information is missing.

^b The significance levels are based on chi-squared tests.

Table 2.11

Reported consumption of specific items of food in the previous two days in the screening questionnaire, by outcome of screened-in households
Screened-in households^a

Consumption of specific items of food in the previous two days	Outcome of screened-in households		Total	p ^b
	Unproductive	Productive		
	%	%	%	
More healthy foods				
Whole grain or high fibre cereal	52	47	48	<0.01
Fruit (fresh, tinned, dried or frozen)	73	69	70	<0.05
Fruit juice	40	41	41	n.s.
Oily fish	29	29	29	n.s.
Leafy green vegetables (such as cooked cabbage, greens, broccoli or spinach)	66	60	62	<0.01
Other green vegetables (such as peas or green beans)	65	63	63	n.s.
Raw vegetables	49	50	50	n.s.
Less healthy foods				
Whole milk (on its own or in tea or coffee or on cereal)	46	43	44	n.s.
Sugar (used in tea or coffee or on cereal or other foods at the table)	55	54	55	n.s.
Burgers or kebabs	14	14	14	n.s.
Meat pies and pastries	26	25	25	n.s.
Base (unweighted)	982	2477	3459	

^a Excludes 2 unproductive households for whom deprivation score information is missing.

^b The significance levels are based on chi-squared tests (2x2 tables: consuming versus not consuming, productive versus unproductive). n.s. = not significant, p>0.05

Table 2.12

Responses to the screening questions on food security, by outcome of screened-in households
Screened-in households^a

Responses to the screening questions on food security	Outcome of screened-in households		Total	p ^b
	Unproductive	Productive		
	%	%	%	
Are there days when you do not have a main meal?				
No	60	56	57	n.s.
Once every two weeks or less	7	7	7	
1-3 days a week	23	26	25	
4-6 days a week or everyday	10	11	11	
Are there times when you do not have enough food to eat because you can't get to the shops?				
No	94	93	93	n.s.
Yes (from less than once a month to every day)	6	7	7	
Do you ever worry that food will run out because you do not have enough money to buy more?				
No	83	77	79	<0.001
Yes (from less than once a month to every day)	17	23	21	
Base (unweighted)	982	2477	3459	

^a Excludes 2 unproductive households for whom deprivation score information is missing.

^b The significance levels are based on Kendall's tau-b for the first question (Are there days when you do not have a main meal?) and on chi-squared tests for the second and third questions (Are there times when you do not have enough food to eat because you can't get to the shops? and Do you ever worry that food will run out because you do not have enough money to buy more?). Kendall's tau-b is a measure of association for contingency tables with ordered categories.

n.s. = not significant, p>0.05

3

Socio-demographic characteristics of the low income population

Bob Erens and Amy Hills

SUMMARY

- The Low Income Diet and Nutrition Survey sampled a representative cross-section of low income households in the UK population.
- Three-fifths (60%) of the low income population were female and two-fifths (40%) were male.
- One-third (32%) of the low income population were children (aged 2-18), and one-fifth (21%) were aged 65 and over.
- Over half (55%) of adults in the low income population had a (self-reported) long-term illness, and 41% had a limiting long-term illness.
- The vast majority of the low income population lived in England (84%), followed by 9% in Scotland, 5% in Wales and 3% in Northern Ireland; this is a close reflection of the population distribution of the UK.
- In England, over half (55%) lived in households in the 20% most deprived wards in the country.
- Nearly three in four adults were single (29%), separated/divorced (25%) or widowed (19%).
- Eleven percent of adults and 19% of children were from non-White ethnic minority groups.
- Nearly all adults (95%) and children (98%) lived in households that received at least one state benefit (although these percentages include non-means tested benefits such as child benefit and state retirement pension).
- Over two-thirds (68%) lived in social housing.
- Fifteen percent of adults and 28% of children were living in households where the Household Reference Person was currently in work.
- Of those aged 16 and over, 77% had left school by age 16, and over half (55%) had no qualifications.

3.1 Introduction

The aims of this chapter are to: examine the extent to which the Low Income Diet and Nutrition Survey (LIDNS) was successful in sampling low income/materially deprived households in the UK; describe this population in some detail, since there is no comparable information on this group available elsewhere; and give details of this group within each of the main analysis variables used throughout the report to aid interpretation of the results. Comparisons are made with the general population where data are available. All results use the weighting scheme (which corrected for both differential probabilities of selection and non-response) described in Chapter 2 and Appendix O (see LIDNS CD).

3.2 Region, sex, age, marital status, household type and ethnicity

3.2.1 Country/region

Although the survey design over-sampled respondents from Scotland, Wales and Northern Ireland, the weighting scheme introduced during analysis corrected the distribution of the sample, so that the weighted sample of the low income population would be in the correct proportions throughout the UK. The vast majority of the population (84%) lived in England; within England most of the target population lived in the South (38%), followed by the North (28%), and then by Central/Midlands (18%). Nine percent of the low income population lived in Scotland, 5% in Wales and 3% in Northern Ireland. This is a very close reflection of the distribution of the general population within the UK.¹

3.2.2 Sex

There were more females than males in the low income population: 60% and 40% respectively. Thus, females are over-represented in the low income population, as they comprise 51% of the UK general population (of all ages).¹ This reflects the large number of lone-parent households (predominantly female-led) within the low income population and the greater number of women than men who were separated, divorced or widowed. There were only small differences by region/country: there was a slightly smaller proportion of females in the Central/Midlands region (55%) and a slightly larger proportion in Wales (65%) and Northern Ireland (63%).

Children were equally divided between boys and girls. Among adults, there were few differences in the sex ratio by age. (Table not available.)

On average, females were older than males: the mean age for females was 40 years, while for males it was 34 years, reflecting the relatively large proportion of boys in the male sample compared with girls in the female sample. Looking at adults only (aged 19 and over), however, the mean age was the same for both men and women (51 years). Among children (aged 2-18), the mean age was also the same for both boys and girls (9 years).

Amongst adults, men were more likely than women to be single (men 35%, women 26%) or married (men 36%, women 23%), while women were more likely to be separated/divorced (men 19%, women 28%) or widowed (men 11%, women 22%). This is reflected in the large differences in the living arrangements between the sexes (see Section 3.2.5). (Tables 3.1, 3.5)

3.2.3 Age

About one-third (32%) of the low income population were children, with 19% aged 2-10 and 14% aged 11-18. Adults were fairly equally divided between the age categories defined for analysis purposes: 17% aged 19-34; 17% aged 35-49; 12% aged 50-64; and 21% aged 65 and over. The proportion of children living in low income households is much higher than the proportion of children in the general population: about 21% of the UK population is aged 2-18.² People aged 65 and over are also over-represented in the low income population, since they comprise 16% of the general population.

There were some differences in the age distribution by country/region: a much lower proportion of children aged 2-18 (25%) comprised the low income population in Scotland, while in Northern Ireland there was a higher than average proportion of children (39%). By contrast, the low income population in Northern Ireland was about half as likely as average to be aged 65 and over (11% compared with 21% over all countries). (Table 3.1)

Among adults, there were predictable differences in marital status. Those in the youngest age group (19-34) were the most likely to be single and never married (69%), and only 19% were married/cohabiting. Adults in the oldest age group (65 and over) were the most likely to be widowed (51%), while most of the others were married/cohabiting (26%). Even in the middle two age groups, being married/cohabiting was very much a minority status: only 32% for adults aged 35-49 and 38% for those aged 50-64. In both age categories, they were more likely to be separated, divorced or widowed (41% and 49% respectively). (Table 3.5)

The sex differences in marital status by age are reflected in living arrangements as indicated by household type. Household type for the 19-34 and 35-49 age groups were similar, and a majority of their households included children (66% and 70% respectively); the rest were fairly evenly divided between adults living on their own or with other adults but no children. Living as a single adult with 1 or more children was much more common among women than men in the 19-34 and 35-49 age groups (44% and 4% respectively), while men in these two age groups were more likely than women to live in households with two or more adults and one or more children (45% and 34% respectively).

In the 50-64 age group, there was a fairly even split between childless multi-adult and single adult households (45% and 40% respectively). Looking at the oldest age group of 65 and over, two-thirds (66%) lived in single adult households; this was more likely among women than men (74% and 51% respectively). (Table 3.6)

3.2.4 Marital status

Looking only at the *adult* low income population, 29% were single, 28% were married/cohabiting and living with their partner, 6% were married but separated from their spouse, 19% were divorced and 18% were widowed. The proportion of single adults was highest in Northern Ireland (33%) and lowest in Wales (23%). Northern Ireland also had the highest proportion of adults who were separated (15%). Wales had the highest proportion of married/cohabiting adults (36%). The highest proportion of widowed adults was found in Scotland (21%) and the lowest was in Northern Ireland and Wales (14% and 15% respectively), with England in the middle at 18%. (Table 3.2)

It is difficult to compare marital status of the low income population with that of the general population of the UK because of the lack of directly comparable publicly available information. However, Population Trends includes a table on marital status by age for England and Wales only. This shows that the low income population was much less likely to be married (combining living with, and separated from, spouse) than the adult population in England and Wales (low income population 34%, general population 55%), and was more likely to be divorced (low income population 19%, general population 9%) or widowed (low income population 18%, general population 9%).³

3.2.5 Household type

Overall, the percentage of the low income population living in each of the six household types defined for analysis were:⁴

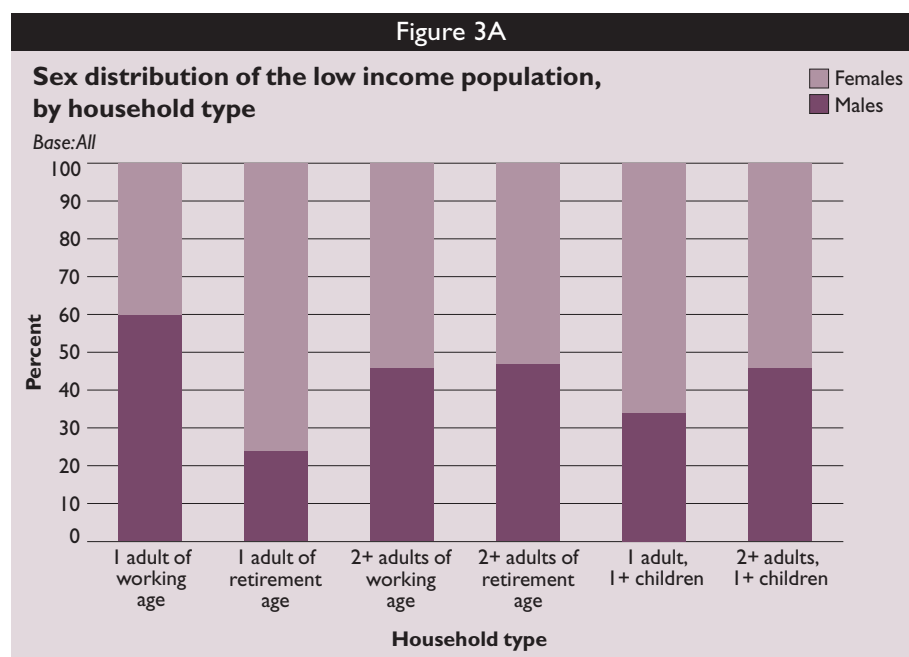
- 1 adult, working age (9%)
- 1 adult, retirement age (15%)
- 2 or more adults, at least 1 of working age (12%)
- 2 or more adults, all retirement age (6%)
- 1 adult, 1 or more children (30%)
- 2 or more adults, 1 or more children (28%).

Nearly three-fifths of the low income population (58%) lived in households with children, and just over half of this group (30%) lived in households of 1 adult and 1 or more children. Twenty-one percent of the low income population lived in pensioner households, mainly consisting of a single pensioner (15%).⁵ A similar proportion were people of working age living on their own or with other adults of working age (21%). (Table 3.3)

There are no published data for the general population using the exact same household categories as in LIDNS. However, there are survey findings available that suggest that the low income population contains a higher proportion of households consisting of 1 adult with 1 or more children, and a higher proportion of single adult households, than is found in the general population. For example, ONS data show that in 2004, 12% of the population in Britain lived in a lone parent household; this compares with 30% of the low income population (in the UK) living in households with 1 adult and 1 or more children (not all of whom are necessarily lone parent households).⁶ Also, only 13% of individuals in the British population live in a 1 person household,⁷ compared with nearly one in four of the low income population (9% of working age and 15% of retirement age).

There were quite large differences in the male to female ratio in terms of household type: households which consisted of a single adult of working age were more likely to be men than women (60% vs. 40%); but single person households containing an adult of retirement age were overwhelmingly women (76% vs. 24% men). The male to female ratio was much more equal in households with two adults, whether or not there were children. But households containing 1 adult with 1 or more children were much more skewed towards females (66%).⁸

(Table 3.8, Figure 3A)



3.2.6 Ethnicity

Respondents were shown a card and asked to classify themselves into an ethnic group. The card included the categories from the 2001 census of the population.⁹ Among the low income population 87% were White, 2% Mixed, 3% Black, 7% Asian and 1% classified as 'Other'. Non-Whites were over-represented in the low income population, as data from the 2001 census show that 92% of the UK population was White.¹⁰ The proportion of the low income population which was White was highest in Northern Ireland (nearly 100%) and lowest in England (85%); within the latter, the proportion ranged from 94% White in the North to 76% White in the South. (Table 3.4)

Analysis of ethnic group by age showed that children and young adults were more likely to be non-White than older adults: whereas 19% of children and adults aged 19-34 were non-White, only 8% of adults aged 35 and over were non-White. (Table 3.7)

The age profile of the different ethnic groups in LIDNS showed that three-quarters (77%) of those in the Mixed category were children, more than twice as high a proportion found in the White (30%) and Asian (37%) low income groups. By contrast, 23% of the White low income group was aged 65 and over, compared with 11% of the Black and 8% of the Asian low income groups. (Table 3.9)

The differences in age of the ethnic groups were reflected in differences in marital status (see Section 3.2.4) and household type. Asians were by far the most likely to live in households containing 2 or more adults and 1 or more children (70%, compared with 31% of Blacks and 25% of Whites). Mixed ethnicity and Black residents were the most likely to live in households consisting of 1 adult and 1 or more children: 63% and 46% respectively, compared with 30% of Whites and 6% of Asians. While 23% of Whites lived in households where all adults were over retirement age, this was true of only 8% of Blacks and 3% of Asians. (Table 3.9)

3.3 Working status and Socio-Economic Classification

A series of questions in the household questionnaire (see Chapter 2 and Appendix C, LIDNS CD) were asked about the 'Household Reference Person' (HRP), who may or may not have been a respondent in LIDNS. The HRP was defined as the householder (a person in whose name the property is owned or rented) with the highest income. If there was more than one householder and they had equal income, then the eldest was chosen as the HRP.

Respondents were asked whether the HRP was in paid work at the time of the interview and, if they were not, whether they had ever had a paid job. Those who had ever worked were asked a number of details about their current or most recent job in order to classify respondents into the National Statistics Socio-Economic Classification (NS-SEC) system. NS-SEC is a social classification system that attempts to classify groups on the basis of employment relations, based on characteristics such as career prospects, autonomy, mode of payment and period of notice. There are fourteen operational categories representing different groups of occupations (for example higher and lower managerial, higher and lower professional) and a further three 'residual' categories for full-time students, occupations that cannot be classified due to lack of information or other reasons.

The operational categories may be collapsed to a number of levels and the tables in this chapter use the following categories: managerial and professional; lower managerial and professional; intermediate; small employers and own account workers; lower supervisory and technical; semi-routine; and routine occupations. It is the NS-SEC of the HRP which is used throughout this report.

Fifteen percent of adults and 28% of children were living in households where the HRP was in work at the time of the interview; most of the others (adults 75%, children 55%) were in households where the HRP had previously worked, and 10% of adults and 17% of children lived in households where the HRP had never had a paid job.

In relation to the HRP's current or most recent job, nearly two-thirds (last) worked in semi-routine or routine occupations, while about one in ten were in managerial and professional occupations.

There were no differences between males and females in the low income population in terms of their HRP's working status or NS-SEC.

As would be expected, however, there were some differences by age. The likelihood of living in a household where the HRP was currently working ranged from 28% for children to only 1% for adults aged 65 and over. The likelihood of the HRP never having worked ranged from 19% for adults aged 19-34 to only 3% for those aged 50-64 and 6% for those aged 65 and over.

(Tables 3.10a, 3.10b, 3.10c)

3.4 Household income and benefits received

3.4.1 Deriving equivalised household income

The household questionnaire included detailed questions on sources and amounts of income received by the household. Respondents were asked whether any members of their household received income from the following sources: earnings from paid work, pension income, state benefits, money from government training schemes or education grants, interest from savings, rent, and other income sources (including someone outside the household paying bills). For each income source received, respondents were asked the exact amount, and how often it was received. The full module of questions on household income can be found in the computer assisted personal interview (CAPI) questionnaire documentation included in Appendix C (see LIDNS CD).

Variables were derived for total gross and net weekly income from all sources; another variable excluded income received from state benefits which are paid to those with a disability to cover the higher living costs arising from the disability (including disability living allowance, incapacity benefit and attendance allowance). The total net weekly income variable was then 'equivalised' to take account of the number of persons living in the household, using the McClements scoring system.¹¹ The tables in this chapter show equivalised net weekly household income excluding income from disability living allowance, incapacity benefit and attendance allowance.

3.4.2 Sources of income and benefits received

State benefits

By far the most common sources of income for the low income population were state benefits: 98% of children and 95% of adults were living in households in receipt of one or more state benefits. Women were slightly more likely than men to live in households in receipt of at least one type of benefit (96% compared with 91%).

Among children, the vast majority (95%) lived in households in receipt of (non-means tested) child benefit, although it seems a minority of 5% of children were in households where this benefit was not received. Just under two-thirds (63%) of children were in households in receipt of income support/pension credit, and roughly one-third (35%) were in households which benefited from the child tax credit.

Over half of adults lived in households where (one or more) residents received income support/pension credit (54%). Thirty-six percent of adults lived in households which were in receipt of state retirement pension, 36% in households which received child benefit, and about 24% lived in households in receipt of disability living allowance. Nineteen percent of low income adults lived in households receiving incapacity benefit, 12% in receipt of child tax credit, 11% of attendance allowance, 8% of jobseekers' allowance and 7% of working tax credit. (State retirement pension, disability living allowance, incapacity benefit and attendance allowance are all non-means tested.)

Among adults, the variations in benefit receipt by age were as expected. The proportion of people living in households in receipt of child benefit, child tax credit, working tax credit and jobseekers' allowance was highest in the two youngest age categories (19-34 and 35-49); for disability living allowance and incapacity benefit, the proportion was highest in the 50-64 age group; and for state pension and attendance allowance the proportion was highest in the oldest age group of 65 and over. One benefit which did not vary much by age was income support/pension credit, which was received by households covering one-half to nearly two-thirds of adults in all age categories.

Women were more likely than men to live in households in receipt of income support/pension credit (58% and 46% respectively) and child benefit (42% and 26% respectively). Men were more likely than women to live in households with income from incapacity benefit (28% compared with 14%) and disability living allowance (29% compared with 21%).

Other income sources

Children were more likely than adults to live in households receiving income from (either regular or occasional) paid work (36% compared with 23%). The percentage of adults living in households with income from paid work decreased with age, from 39% for those aged 19-34 to 1% for those aged 65 and over. The other income sources in Tables 3.11a, 3.11b and 3.11c were received only very rarely, and none by more than 2% of the low income population.

(Tables 3.11a, 3.11b, 3.11c)

3.4.3 Household income

Weekly household income

The mean net weekly household income for the low income population was £225 (averaged at the individual level). Children lived in households with the highest household incomes (£271 net per week). Among adults, mean net weekly household income was highest for the two youngest age groups (ages 19-34 £220; ages 35-49 £239), and then declined with age (ages 50-64 £185, age 65 and over £165).

Although there are no directly comparable population data available, the published evidence suggests that LIDNS was successful in sampling genuinely low income households. One example comes from the 2005 Social Trends report, which shows that (in 2002-03) households in the lowest income quintile had a mean net income of about £177 per week while the fourth quintile had a mean of about £274 per week.¹² This compares with a mean for all households in LIDNS of £201 per week *at the household level*.

A second comparison with the general population can be made using gross, rather than net, weekly income. Data from the Family Resources Survey for 2003-04 show that 20% of all households in the UK had a gross weekly income of under £200;¹³ by comparison, in LIDNS as many as 70% of households had a gross weekly income of less than £200. Ninety percent of households in LIDNS had a gross weekly income of under £300, which is nearly two and a half times as high as the proportion of households in the general population in the UK (38%).

Equivalised net weekly household income

As mentioned, net weekly household income was equivalised using the McClements scoring system.¹¹ Women were more likely than men to be in the top two quintiles (43% compared with 33%), while men were more likely to be in the bottom two quintiles (48% compared with 37% of women). In terms of age, only 8% of adults aged 65 and over were in the lowest quintile compared with 40% of those aged 50-64. Children were less likely than adults to be in the lowest quintile (14% compared with 23%).

(Tables 3.11a, 3.11b, 3.11c)

3.5 Deprivation and area type

3.5.1 The deprivation indices

The Index of Multiple Deprivation (IMD) was used to look at level of deprivation in the areas in which respondents lived. IMD provides a measure of area deprivation based on deprivation in six domains: income; employment; health and disability; education, skills and training; housing; and access to services. Within each domain, data is collected from a variety of sources; for example, health deprivation is assessed on the basis of mortality ratios for different wards¹⁴ and the prevalence of limiting longstanding illness available from the census and benefits data.

The deprivation indices were compiled for all four countries in the UK by the same team of researchers at the University of Oxford. Although not directly comparable across countries, the domains were created using the same method and behave in the same way. However, since each country has its own index, it is only possible to look at deprivation within each country and not as a total for the UK sample. In this report, the four deprivation indices have been independently categorised into quintiles within each country in order to reflect broad categories of deprivation. Because of the differences in the way the four indices are derived, it

cannot be assumed that the quintiles are equivalent when looking across countries, and it is not valid to make cross-country comparisons.

Area type was derived by using population density from the 2001 census. Rural areas were defined as having less than 5 residents per square kilometre, suburban areas as having 5 to 499 residents, and urban areas as having 500 or more.

3.5.2 By country/region

One aim of the LIDNS sampling strategy was to include low income households living in areas that were not necessarily deprived. The data, however, were weighted so that any over-sampling of more affluent areas would be corrected during analysis. Within England, over half (55%) of the low income population lived in the 20% most deprived wards in the country (i.e. the bottom, or 5th, quintile) and a further 21% lived in the 4th quintile. Only 2% of the low income population in England lived in the least deprived (1st) quintile, with a further 6% living in the 2nd quintile, and 16% in the 3rd quintile. The low income population in the other countries was less likely to be concentrated in the most deprived (5th quintile) wards (bearing in mind that the quintiles themselves are not equivalent): 44% in Wales, 41% in Scotland and 35% in Northern Ireland, compared with the 55% in England. At the other extreme, in Wales, 14% of the low income population lived in the 1st and 2nd (least deprived) quintiles, although it was in Northern Ireland where this was most common, with one-third of this population living in the two least deprived quintiles (32%).

Within England, low income residents in the North were more likely to live in the bottom two quintiles (83%) than those in the Central/Midlands (77%) or in the South (70%). In the South, 15% lived in the 1st or 2nd quintiles, compared with only 2% in the North and 4% in the Central/Midlands regions.

In terms of area type, 19% of the low income population lived in urban areas, 3% lived in rural areas, and the vast majority (78%) lived in suburban areas (using the definition based on population density described above). Low income residents in England (21%) and Northern Ireland (18%) were more likely to live in urban areas than were those in Scotland (7%) or Wales (7%). Only 1% of the low income population in England lived in rural areas, compared with 7% in Wales, 10% in Scotland and 17% in Northern Ireland. Within England, low income residents in the South were twice as likely as those in the North to live in urban areas (28% and 13% respectively). (Table 3.12)

3.5.3 By sex and age

Area type did not vary at all by sex. Among adults, there was some variation in area type with age: the proportion of the low income population living in urban areas decreased as age increased, from 25% for those aged 19-34 to 15% for those aged 50-64 and 16% for those aged 65 and over. (Table 3.13)

3.6 Tenure and household amenities

3.6.1 By country/region

The household interview collected information on housing tenure, number of rooms in the home and whether or not the household had access to various amenities including a refrigerator, freezer, microwave, hob, oven, adequate food storage and whether the household had to share their food storage. Rather than report the total number of rooms, occupation density (persons per room) is reported.¹⁵

Housing tenure

Over two-thirds of the low income population lived in social housing, either properties rented from a local authority (44%) or from a housing association (24%). Ten percent lived in properties that were owned outright and 9% with a mortgage, and the remaining 14% rented privately. As

would be expected, the low income population is much more likely than the general population to live in social housing and much less likely to own their own homes. At the household level, the General Household Survey (GHS) figures for 2003 (which apply to GB rather than the UK) showed that 69% of households were owner-occupied, 20% were social housing and 11% were rented privately.¹⁶ The comparable figures in LIDNS (for GB only) were 20% owner-occupied, 64% social housing and 16% private rented.

As Table 3.14 shows, there was variation in tenure by country.

(Table 3.14)

Persons per room

Over one-fifth of the low income population lived in accommodation at a density of 1 or more persons per room (ppr), 12% with 1 ppr and 10% with over 1 ppr. In order to make comparisons with available data for the general population, ppr was also calculated at the household level for GB. This showed that 8% of LIDNS households were living with 1 ppr and 5% with more than 1 ppr. This compares with general population figures for GB of 3% of households living with 1 ppr, and 1% with more than 1 ppr.¹⁷ As would be expected, therefore, the low income population appears to live in more crowded accommodation than the general population.

The low income population in England was the most likely to live in accommodation with 1 or more ppr (23%) compared with 21% in Scotland, 14% in Wales and 13% in Northern Ireland. Within England, it was low income residents in the South who lived in the most crowded housing, with 27% living in accommodation with 1 or more ppr.

(Table 3.14)

Household amenities

Virtually all of the low income population had access to a refrigerator (99%), hob (97%) and oven (96%), and a high proportion had a microwave (89%) and freezer (87%). Nearly all (98%) said they did not share food storage facilities with any other households, and 83% said they had adequate food storage. There was little variation by country/region in access to these household amenities.

These figures are slightly less than those for the general population, where data are available at the household level. For example, the GHS shows that 89% of households in GB in 2003 had a microwave, and 96% had a freezer.¹⁸ The comparable figures for LIDNS in GB at household level were 86% and 84% respectively.

(Table 3.14)

3.6.2 By sex and age

There was little variation by sex in terms of housing tenure, occupation density (ppr) or access to household amenities.

By age, however, there were some notable differences in tenure and in ppr (but few differences in access to amenities).

(Table 3.15)

3.7 Education and qualifications

Respondents aged 16 and over were asked the age at which they had left full-time education. If they said they had finished, they were asked the *highest* qualification (if any) they had achieved.

Over three-quarters (77%) of the low income population aged 16 and over had left school by age 16, and over half (55%) had no qualifications. The proportion of the low income population aged 16 and over without any qualifications is much higher than in the general population, where only 13% of males and 15% of females have no qualifications.¹⁹

There were few differences in educational qualifications between males and females.

The proportion of low income adults who had no qualifications increased with age, from 32% of adults aged 19-34 to 86% of those aged 65 and over.

(Tables 3.16a, 3.16b, 3.16c)

There was some variation by country, with the low income populations aged 16 and over in Northern Ireland and England being more likely to have educational qualifications than those in Scotland or Wales. For example, the proportion of the low income population aged 16 and over without any qualifications was lower in Northern Ireland (53%) and England (54%) than in Scotland (62%) or Wales (64%). Also, the proportion of school leavers by age 16 was lowest in Northern Ireland (66%) followed by England (77%), Scotland (81%) and Wales (82%). (Table not available.)

3.8 Health

Respondents aged 16 and over were asked whether they suffered from long-term illness, and if so, whether this illness limited them or not. Questions on recent illness were asked of all respondents aged 2 and over. These questions included whether the respondent had needed to cut down on activities in the last two weeks due to illness, whether they had had an accident requiring a visit to a doctor or hospital in the last 12 months, and whether they had needed an overnight hospital stay in the last 12 months.

Fifty-five percent of adults in the low income population had a long-term illness, and this was limiting for 41%. Men were slightly more likely than women to report both a long-term illness (59% compared with 53%) and a limiting long-term illness (45% compared with 39%).

As would be expected, long-term illness increased with age for both sexes: for males from 18% in the 16-18 age group to 79% in the 50-64 age group, and for females from 25% to 74% respectively. Long-term illness was slightly lower in the oldest age group of 65 and over for both sexes (70% for men and 72% for women). Limiting long-term illness was highest in the 50-64 age group (66% men, 61% women), and then decreased for those aged 65 and over (49% men, 51% women).

This contrasts with data for the general population, which shows a steady increase in limiting long-term illness with age. For example, the 2003 Health Survey for England (HSE) shows limiting illness steadily increasing from 8% for males aged 16-24 to 12% for ages 25-34, 18% for 35-44, 25% for 45-54, 35% for 55-64, 36% for 65-74 and 52% for men aged 75 and over.²⁰ The comparable figures in LIDNS, using the same age categories as the HSE and for England only, are: 15%, 30%, 35%, 62%, 61%, 41% and 55%. In other words, the highest rates of long-term illness in men in the low income population were found among those of working age (45-54 and 55-64). This is perhaps not entirely unexpected, as it is likely that a high proportion of adults with a limiting long-term illness would be unable to work and thus dependant on state benefits for their income. As described earlier in this chapter, this does in fact seem to be the case: among men aged 50-64, only 9% were in paid work (Table 3.10a), and this age group was also the most likely to report incapacity benefit (55%) or disability living allowance (42%) as sources of income. The same pattern can also be seen among women.

In terms of recent illness, adults were about two to three times as likely as children to have needed to cut down on activities in the past two weeks due to illness (18% of men compared with 10% of boys, 21% of women compared with 7% of girls). Similarly, adults were about two to three times as likely as children to have needed an overnight hospital stay in the past year (15% of men compared with 7% of boys, 16% of women compared with 6% of girls). This difference was not found for those who had an accident requiring medical treatment (men 18%, boys 21%; women 14%, girls 16%).

(Tables 3.17a, 3.17b, 3.17c, Figures 3B, 3C)

Rates of long-term illness varied by country for males, less so for females. In particular, males (aged 16 and over) in Wales were the most likely to report a long-term illness (72%) and a limiting long-term illness (57%), while males in England were the least likely to report a long-term illness (54%) and males in Northern Ireland were the least likely to report a limiting illness (33%). (Table not available.)

Figure 3B

Limiting long-term illness in the low income and general population in England, males, by age

Base: Males aged 16 and over in England

■ Low income population
■ General population (2003 HSE)

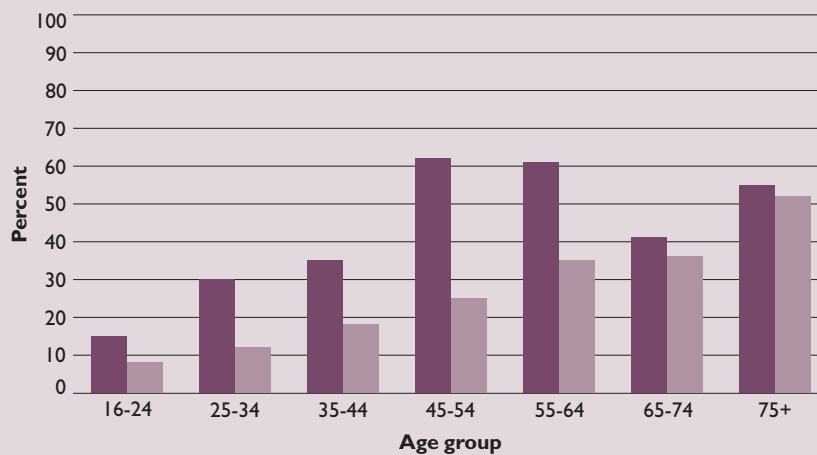
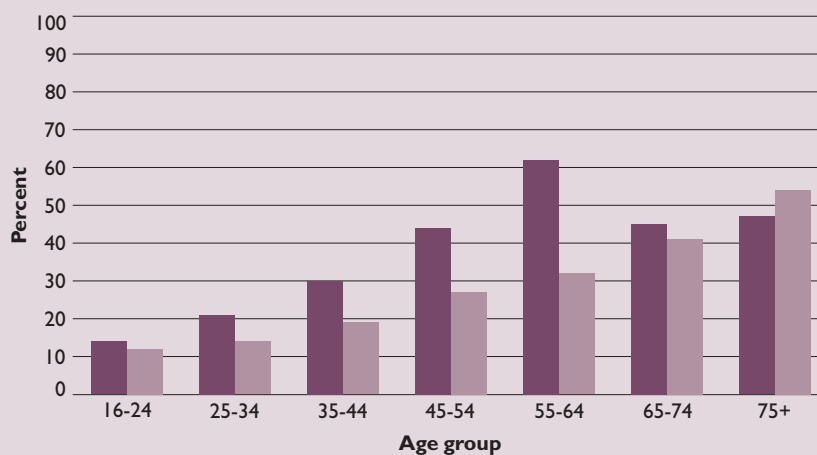


Figure 3C

Limiting long-term illness in the low income and general population in England, females, by age

Base: Females aged 16 and over in England

■ Low income population
■ General population (2003 HSE)



Notes and references

- 1 Population Trends Number 120. Summer 2005; Table 1.4.
- 2 Population Trends Number 120. Summer 2005; Table 1.4. Since the age categories in Table 1.4 do not exactly match the age categories used in this report, the 21% of the UK population aged 2-18 has been estimated from the data included in Table 1.4.
- 3 Population Trends Number 120. Summer 2005; Table 1.5. The comparison is not exact, as the general population data includes all individuals aged 20 and over, while the LIDNS results are for all those aged 19 and over.
- 4 In defining these categories, residents were counted as children up to age 18, and adults as age 19 and over (in order to maintain consistency with the NDNS series). A very small number of respondents in LIDNS (12) lived in households where the oldest resident was 17 or 18; they have been excluded from these categories and are therefore also excluded from any analysis by household type.
- 5 Retirement age was defined as 65 for men and 60 women. No account is taken in this classification as to whether or not the respondent defined her/himself as a 'pensioner' or whether or not s/he was in work.
- 6 While the vast majority of households in LIDNS which consist of 1 adult and 1 or more children will be lone parent households, the household type categorisation is based only on age of residents and does not take account of their relationships. Thus a household of two siblings aged 20 and 17 would fit in the category of 1 adult and 1 child; by contrast a parent living with a child aged over 18 would not be classified as a household with children.
- 7 Social Trends Number 35. 2005; Table 2.3.

- 8 The percentages relating to household type refer to the full sample of individual adults and children, not to households.
- 9 Following the format used on the 2001 census, respondents were asked two questions using show cards. The first question asked which nationality they were: English, Scottish, Welsh, Irish, British or Other. The second question asked which ethnic group they identified with, using a card showing 15 options: White – British; Other white; Mixed – White and Black Caribbean; Mixed – White and Black African; Mixed – White and Asian; Other mixed; Asian – Indian; Asian – Pakistani; Asian – Bangladeshi; Other Asian; Black – Caribbean; Black – African; Other Black; Chinese; Other. As the questionnaire was only available in English, a small number (28) of eligible individuals who did not speak English could not be included in the survey. It is also possible that some addresses could not be screened due to language problems, but an exact figure is not available.
- 10 Regional Trends Number 38. 2004; Table 3.7.
- 11 Equivalised household income was calculated using the McClements scoring system, described below:
- A score was allocated to each household member, and these were added together to produce an overall household McClements score:

First adult (HRP)	0.61
Spouse/partner of HRP	0.39
Other second adult	0.46
Third adult	0.42
Subsequent adults	0.36
Dependant aged 0-1	0.09
Dependant aged 2-4	0.18
Dependant aged 5-7	0.21
Dependant aged 8-10	0.23
Dependant aged 11-12	0.25
Dependant aged 13-15	0.27
Dependant aged 16+	0.36
 - The equivalised income was derived as the net weekly household income divided by the McClements score.
 - The equivalised net weekly household income was attributed to all members of the household, including children.
 - Households were ranked by equivalised income, and quintiles q1-q5 were identified.
 - The quintiles were as follows: Lowest: less than £120.36; 4th: £120.37 to £160.47; 3rd: £160.48 to £188.56; 2nd: £188.57 to £226.89; Highest: More than £226.90.
 - All individuals in each household were allocated to the equivalised household income quintiles to which their household had been allocated.
(Reference: McClements D. Equivalence scales for children. *Journal of Public Economics* 1977;8:191-210.)
- An equivalised net weekly household income variable was created based on all weekly income; a second equivalised variable was created after excluding income from disability living allowance, incapacity benefit and attendance allowance (see Section 3.4.1).
- 12 Social Trends Number 35, 2005; Table 5.18. The estimate of £177 per week was arrived at by using data from Table 5.18 which shows gross income in the lowest quintile to be £9670 per year. £470 is deducted from this for income tax and national insurance contributions, giving £9200 per year. The estimate of £177 per week is obtained by dividing £9200 by 52.
- 13 Department for Work and Pensions. Family Resources Survey UK 2003-04. London: TSO, 2005.
- 14 'Wards' are one of the key building blocks of UK administrative geography. They are spatial units used to elect councillors in metropolitan and non-metropolitan districts, unitary authorities and the London boroughs in England; unitary authorities in Wales; council areas in Scotland; and district council areas in Northern Ireland.
- 15 Occupation density is calculated by dividing the number of habitable rooms by the number of adults and children in the household. Habitable rooms include kitchens, whether eaten in or not, but exclude rooms used solely for business purposes, those not usable throughout the year (e.g. conservatories), and those not normally used for living purposes such as toilets, cloakrooms, store rooms, pantries, cellars and garages.
- 16 General Household Survey. Results for 2003. 2004; Table 4.6.
- 17 General Household Survey. Results for 2003. 2004; Table 4.15.
- 18 General Household Survey. Results for 2003. 2004; Table 4.20.
- 19 Social Trends Number 35. 2005; Table 3.16. The comparison is not exact, as figures shown are for males aged 16-64, and females aged 16-59 in GB, while LIDNS figures include all aged 16 and over in the UK.
- 20 Prescott A, Moody A. Self-reported health and psychological well-being. In: Sproston K, Primatesta P, eds. Health Survey for England 2003. Volume 2 Risk factors for cardiovascular disease. London: TSO, 2004; Table 10.7.

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Table 3.1

Age of the low income population, by sex and country/region

Aged 2 and over

Age group	Country/region							Total
	England				Scotland	Wales	Northern Ireland	
	North	Central/ Midlands	South	All England				
%	%	%	%	%	%	%	%	
Males								
2-10	27	26	23	25	17	18	20	24
11-18	16	15	19	17	14	20	31	17
19-34	14	15	16	15	8	8	10	14
35-49	12	13	13	13	25	19	14	14
50-64	16	13	10	13	18	16	16	13
65 and over	15	18	19	17	18	20	8	17
Females								
2-10	13	16	17	15	10	18	15	15
11-18	12	13	9	11	12	14	15	11
19-34	19	21	19	20	16	17	18	19
35-49	21	18	19	20	23	17	22	20
50-64	12	9	12	11	12	13	17	12
65 and over	23	23	23	23	27	21	13	23
All								
2-10	18	20	19	19	13	18	17	19
11-18	13	14	13	13	12	16	21	14
19-34	17	19	18	18	13	14	15	17
35-49	17	16	17	17	24	18	19	17
50-64	14	11	11	12	15	14	16	12
65 and over	20	21	21	21	23	20	11	21
<i>Base (unweighted)</i>								
<i>Males</i>	<i>370</i>	<i>193</i>	<i>335</i>	<i>898</i>	<i>159</i>	<i>158</i>	<i>170</i>	<i>1385</i>
<i>Females</i>	<i>630</i>	<i>299</i>	<i>606</i>	<i>1535</i>	<i>233</i>	<i>279</i>	<i>296</i>	<i>2343</i>
<i>All</i>	<i>1000</i>	<i>492</i>	<i>941</i>	<i>2433</i>	<i>392</i>	<i>437</i>	<i>466</i>	<i>3728</i>

Table 3.2

Marital status of the low income population, adults, by sex and country/region

Aged 19 and over

Marital status	Country/region							Total
	England				Scotland	Wales	Northern Ireland	
	North	Central/ Midlands	South	All England				
	%	%	%	%	%	%	%	
Men								
Married/cohabiting	34	36	36	35	32	50	38	36
Separated	7	5	4	5	7	2	6	5
Divorced	17	11	13	14	11	17	7	14
Widowed	11	10	12	11	11	6	6	11
Single, never married	32	38	35	35	38	25	43	35
Women								
Married/cohabiting	23	27	22	23	20	30	24	23
Separated	5	5	8	6	8	7	19	7
Divorced	24	19	21	22	18	23	10	21
Widowed	22	23	22	22	27	19	17	22
Single, never married	27	26	27	27	27	22	29	26
All adults								
Married/cohabiting	26	30	27	28	24	36	28	28
Separated	6	5	6	6	8	5	15	6
Divorced	22	16	18	19	16	21	9	19
Widowed	18	18	19	18	21	15	14	18
Single, never married	28	31	30	29	31	23	33	29
<i>Base (unweighted)</i>								
Men	257	131	221	609	120	109	108	946
Women	504	237	481	1222	194	212	222	1850
All adults	761	368	702	1831	314	321	330	2796

Table 3.3

Household type of the low income population, by sex and country/region

Aged 2 and over

Household type ^a	Country/region							Total
	England				Scotland	Wales	Northern Ireland	
	North	Central/ Midlands	South	All England				
%	%	%	%	%	%	%	%	
Males								
1 adult, working age	14	8	16	13	19	14	14	14
1 adult, retirement age	9	9	9	9	12	8	5	9
2 or more adults, at least 1 of working age	13	16	12	13	15	13	15	14
2 or more adults, all retirement age	6	7	6	6	8	10	2	6
1 adult, 1 or more children	28	22	25	25	19	24	30	25
2 or more adults, 1 or more children	30	38	32	33	28	30	34	32
Females								
1 adult, working age	6	7	6	6	6	6	8	6
1 adult, retirement age	20	17	20	19	22	16	12	19
2 or more adults, at least 1 of working age	10	12	10	11	17	8	8	11
2 or more adults, all retirement age	4	6	5	5	6	5	3	5
1 adult, 1 or more children	35	32	33	34	25	35	37	33
2 or more adults, 1 or more children	24	27	26	25	24	30	31	25
All								
1 adult, working age	9	7	10	9	11	9	10	9
1 adult, retirement age	15	13	15	15	18	13	10	15
2 or more adults, at least 1 of working age	11	14	11	12	16	10	11	12
2 or more adults, all retirement age	5	6	5	5	7	7	3	6
1 adult, 1 or more children	32	28	30	30	23	31	35	30
2 or more adults, 1 or more children	26	32	28	28	26	30	32	28
<i>Base (unweighted)</i>								
<i>Males</i>	<i>370</i>	<i>193</i>	<i>335</i>	<i>898</i>	<i>159</i>	<i>158</i>	<i>170</i>	<i>1385</i>
<i>Females</i>	<i>630</i>	<i>299</i>	<i>606</i>	<i>1535</i>	<i>233</i>	<i>279</i>	<i>296</i>	<i>2343</i>
<i>All</i>	<i>1000</i>	<i>492</i>	<i>941</i>	<i>2433</i>	<i>392</i>	<i>437</i>	<i>466</i>	<i>3728</i>

^a The results for household type do not show the small number (less than 0.5%) of cases where all individuals at an address were aged under 19.

Table 3.4

Ethnic group of the low income population, by sex and country/region

Aged 2 and over

Ethnic group	Country/region							Total
	England				Scotland	Wales	Northern Ireland	
	North	Central/ Midlands	South	All England				
%	%	%	%	%	%	%	%	
Males								
White	92	91	75	84	95	98	100	86
Black	1	2	6	3	2	-	-	3
Asian	4	5	13	9	1	-	-	7
Mixed	3	2	2	2	-	2	0	2
Other	0	1	3	2	2	-	-	2
Females								
White	95	85	77	85	94	96	99	87
Black	0	2	6	3	1	2	-	3
Asian	2	9	10	7	3	0	-	6
Mixed	2	2	4	3	2	1	1	2
Other	1	2	3	2	-	0	-	1
All								
White	94	87	76	85	94	97	100	87
Black	1	2	6	3	2	1	-	3
Asian	3	7	11	8	3	0	-	7
Mixed	2	2	3	3	1	2	0	2
Other	0	1	3	2	1	0	-	1
<i>Base (unweighted)</i>								
Males	370	193	335	898	159	158	170	1385
Females	630	299	606	1535	233	279	296	2343
All	1000	492	941	2433	392	437	466	3728

- No observations.

Table 3.5

Marital status of the low income population, adults, by sex and age
Aged 19 and over

Marital status	Age group				Total
	19-34	35-49	50-64	65+	
	%	%	%	%	%
Men					
Married/cohabiting	19	40	40	43	36
Separated	3	5	11	3	5
Divorced	3	19	22	11	14
Widowed	-	0	7	31	11
Single, never married	76	35	19	13	35
Women					
Married/cohabiting	18	28	36	17	23
Separated	7	12	8	2	7
Divorced	9	35	32	14	21
Widowed	0	1	16	61	22
Single, never married	65	24	8	6	26
All adults					
Married/cohabiting	19	32	38	26	28
Separated	5	10	9	2	6
Divorced	7	30	28	13	19
Widowed	0	1	12	51	18
Single, never married	69	27	13	8	29
<i>Base (unweighted)</i>					
Men	194	226	258	268	946
Women	483	494	336	537	1850
All adults	677	720	594	805	2796

- No observations.

Table 3.6

Household type of the low income population, by sex and age								
Aged 2 and over								
Household type ^a	Age group		Total children	19-34	35-49	50-64	65+	Total adults
	2-10	11-18						
	%	%	%	%	%	%	%	%
Males								
1 adult, working age	-	-	-	26	34	41	-	24
1 adult, retirement age	-	-	-	-	-	-	51	15
2 or more adults, at least 1 of working age	-	-	-	27	16	41	12	23
2 or more adults, all retirement age	-	-	-	-	-	3	34	11
1 adult, 1 or more children	53	62	56	3	5	2	1	3
2 or more adults, 1 or more children	47	37	43	45	45	13	2	25
Females								
1 adult, working age	-	-	-	9	10	21	-	8
1 adult, retirement age	-	-	-	-	-	19	74	26
2 or more adults, at least 1 of working age	-	-	-	15	10	39	6	15
2 or more adults, all retirement age	-	-	-	-	-	6	18	7
1 adult, 1 or more children	59	57	58	42	45	6	-	24
2 or more adults, 1 or more children	41	40	40	34	35	9	2	20
All								
1 adult, working age	-	-	-	15	18	30	-	14
1 adult, retirement age	-	-	-	-	-	10	66	22
2 or more adults, at least 1 of working age	-	-	-	19	12	40	8	18
2 or more adults, all retirement age	-	-	-	-	-	5	24	8
1 adult, 1 or more children	56	60	57	29	32	4	0	16
2 or more adults, 1 or more children	44	39	42	37	38	11	2	22
<i>Base (unweighted)</i>								
Males	239	200	439	194	226	258	268	946
Females	278	215	493	483	494	336	537	1850
All	517	415	932	677	720	594	805	2796

- No observations.

^a The results for household type do not show the small number (less than 0.5%) of cases where all individuals at an address were aged under 19.

Table 3.7

Ethnic group of the low income population, by sex and age

Aged 2 and over

Ethnic group	Age group		Total children	19-34	35-49	50-64	65+	Total adults
	2-10	11-18						
	%	%	%	%	%	%	%	%
Males								
White	81	86	83	76	87	94	94	88
Black	5	3	4	4	3	0	2	2
Asian	9	5	7	11	9	6	4	7
Mixed	4	4	4	2	-	0	-	1
Other	1	2	1	6	1	-	-	2
Females								
White	78	80	79	83	88	90	97	90
Black	4	5	5	3	3	2	2	3
Asian	9	6	8	8	7	6	2	6
Mixed	7	6	7	2	1	1	-	1
Other	1	3	2	3	1	1	0	1
All								
White	80	83	81	81	88	92	96	89
Black	5	4	4	4	3	1	2	2
Asian	9	5	8	9	8	6	3	6
Mixed	6	5	5	2	1	1	-	1
Other	1	2	2	4	1	0	0	1
<i>Base (unweighted)</i>								
Males	239	200	439	194	226	258	268	946
Females	278	215	493	483	494	336	537	1850
All	517	415	932	677	720	594	805	2796

- No observations.

Table 3.8

Sex and age of the low income population, by household type*Aged 2 and over*

Sex, age	Household type						Total
	1 adult of working age	1 adult of retirement age	2+ adults, at least 1 of working age	2+ adults, all of retirement age	1 adult, 1+ children	2+ adults, 1+ children	
	%	%	%	%	%	%	%
Males							
2-10	-	-	-	-	17	16	10
11-18	-	-	-	-	15	9	7
19-34	16	-	13	-	1	9	6
35-49	21	-	8	-	1	9	6
50-64	24	-	19	3	0	3	5
65 and over	-	24	7	44	0	1	7
Females							
2-10	-	-	-	-	18	13	9
11-18	-	-	-	-	13	9	7
19-34	12	-	14	-	16	14	11
35-49	12	-	10	-	18	15	12
50-64	16	9	23	8	1	2	7
65 and over	-	68	7	45	-	1	14
Base (unweighted)	449	585	538	236	1136	772	3728

- No observations.

Table 3.9

Socio-demographic characteristics of the low income population, by ethnic group

Aged 2 and over

Socio-demographic characteristics	Ethnic group					Total
	White	Black	Asian	Mixed	Other	
	%	%	%	%	%	%
Sex						
Males	40	40	45	36	42	40
Females	60	60	55	64	58	60
Age						
2-10	17	28	26	45	13	19
11-18	13	18	11	32	22	14
19-34	16	21	24	16	49	17
35-49	18	17	20	4	10	17
50-64	13	6	11	3	4	12
65 and over	23	11	8	-	2	21
Marital status^a						
Married	26	24	52	[14]	[29]	28
Separated	6	14	11	[-]	[7]	6
Divorced	19	17	9	[9]	[10]	19
Widowed	20	1	10	[10]	[2]	18
Single, never married	29	43	18	[67]	[52]	29
Household type^b						
1 adult, working age	10	7	7	4	9	9
1 adult, retirement age	17	6	2	-	3	15
2 or more adults, at least 1 of working age	12	7	14	1	22	12
2 or more adults, all retirement age	6	3	-	-	-	6
1 adult, 1 or more children	30	46	6	63	18	30
2 or more adults, 1 or more children	25	31	70	31	47	28
Base (unweighted)						
Total	3384	109	140	58	37	3728
Adults only	2589	70	93	19	25	2796

- No observations.

[] Fewer than 30 observations.

^a Marital status is based on adults only.

^b The results for household type do not show the small number (less than 0.5%) of cases where all individuals at an address were aged under 19.

Table 3.10a

Economic characteristics of the low income population, males, by age

Males aged 2 and over

Economic characteristics	Age group		Total boys	19-34	35-49	50-64	65+	Total men
	2-10	11-18						
	%	%	%	%	%	%	%	%
Males								
HRP working status^a								
Never worked	14	15	15	16	8	1	1	6
Working at the moment	25	36	30	24	25	9	0	14
Used to work	61	49	56	60	67	91	98	80
NS-SEC of HRP^a								
Higher managerial and professional occupations	4	1	2	2	6	2	3	3
Lower managerial and professional occupations	7	9	8	7	16	6	8	9
Intermediate occupations	5	7	6	5	3	2	3	3
Small employers and own account workers	4	4	4	4	5	12	12	8
Lower supervisory and technical occupations	13	7	10	13	17	16	23	18
Semi-routine occupations	34	35	34	36	23	20	19	24
Routine occupations	33	38	35	33	30	43	32	34
<i>Base (unweighted)</i>	239	200	439	194	226	258	268	946

^a HRP is the 'Household Reference Person' – see Section 3.3 for definition.

Table 3.10b

Economic characteristics of the low income population, females, by age

Females aged 2 and over

Economic characteristics	Age group		Total girls	19-34	35-49	50-64	65+	Total women
	2-10	11-18						
	%	%	%	%	%	%	%	%
Females								
HRP working status^a								
Never worked	20	17	18	20	14	4	8	12
Working at the moment	23	32	27	25	25	11	1	15
Used to work	57	51	54	55	60	85	91	73
NS-SEC of HRP^a								
Higher managerial and professional occupations	2	0	1	3	0	3	1	1
Lower managerial and professional occupations	11	6	9	8	13	8	7	9
Intermediate occupations	12	5	9	8	8	9	11	10
Small employers and own account workers	4	9	6	6	6	8	4	6
Lower supervisory and technical occupations	15	14	14	9	10	11	13	11
Semi-routine occupations	26	36	30	35	29	28	29	30
Routine occupations	31	30	30	32	33	33	35	33
<i>Base (unweighted)</i>	278	215	493	483	494	336	537	1850

^a HRP is the 'Household Reference Person' – see Section 3.3 for definition.

Table 3.10c

Economic characteristics of the low income population, by age

Aged 2 and over

Economic characteristics	Age group							
	2-10	11-18	Total children	19-34	35-49	50-64	65+	Total adults
	%	%	%	%	%	%	%	%
HRP working status^a								
Never worked	17	16	17	19	12	3	6	10
Working at the moment	24	34	28	24	25	10	1	15
Used to work	59	50	55	57	63	87	94	75
NS-SEC of HRP^a								
Higher managerial and professional occupations	3	0	2	2	2	3	2	2
Lower managerial and professional occupations	9	8	8	7	14	7	7	9
Intermediate occupations	8	6	7	7	7	6	9	7
Small employers and own account workers	4	6	5	5	6	10	7	7
Lower supervisory and technical occupations	14	11	12	10	13	13	17	14
Semi-routine occupations	30	35	32	35	27	24	25	28
Routine occupations	32	34	33	32	32	37	34	34
<i>Base (unweighted)</i>	<i>517</i>	<i>415</i>	<i>932</i>	<i>677</i>	<i>720</i>	<i>594</i>	<i>805</i>	<i>2796</i>

^a HRP is the 'Household Reference Person' – see Section 3.3 for definition.

Table 3.11a

Sources of income and equivalised net weekly household income, males, by age

Males aged 2 and over

Income sources, Weekly income	Age group		Total boys	19-34	35-49	50-64	65+	Total men
	2-10	11-18						
	%	%	%	%	%	%	%	%
Males								
Sources of income								
Regular job	29	44	35	38	28	15	1	20
Occasional job	4	3	4	5	8	1	-	3
Former spouse/partner	6	2	4	2	0	-	-	0
Government training scheme	0	0	0	0	0	-	-	0
Educational grant	1	-	1	7	1	1	-	2
Interest from savings/investments	0	-	0	-	-	2	3	1
Rent from property	-	-	-	0	-	2	-	0
Other regular source	1	2	1	6	2	1	2	3
<i>State benefits:</i>								
Income support/pension credit	61	63	61	36	38	61	50	46
Child benefit	97	95	96	43	47	14	3	26
State retirement pension	1	2	1	2	5	15	96	33
Disability living allowance	16	21	18	18	35	42	21	29
Child tax credit	38	35	37	12	20	1	1	8
Incapacity benefit	14	11	12	19	41	55	4	28
Working tax credit	20	28	23	10	16	1	0	6
Attendance (carer's) allowance	13	11	12	10	9	16	13	12
Jobseekers allowance	7	8	7	21	20	9	1	12
Other benefits	4	6	5	3	7	4	6	5
Received at least one benefit	98	99	99	74	96	96	99	91
No source of income	-	0	0	2	1	1	1	1
Equivalised net weekly household income quintiles^a								
Highest	14	16	15	20	10	7	28	17
2nd	28	20	25	12	18	12	23	16
3rd	25	20	23	19	17	18	22	19
4th	24	22	23	22	19	15	18	18
Lowest	10	22	15	27	37	48	9	29
<i>Base (unweighted)</i>								
Sources of income	239	199	438	194	225	255	264	938
Equivalised income	232	192	424	175	214	241	248	883

- No observations.

^a The equivalised net weekly household income quintiles are: Lowest: less than £120.36; 4th: £120.37 to £160.47; 3rd: £160.48 to £188.56; 2nd: £188.57 to £226.89; Highest: £226.90 and over.

Table 3.11b

Sources of income and equivalised net weekly household income, females, by age

Females aged 2 and over

Income sources, Weekly income	Age group		Total girls	19-34	35-49	50-64	65+	Total women
	2-10	11-18						
	%	%	%	%	%	%	%	%
Females								
Sources of income								
Regular job	25	34	29	32	30	19	1	20
Occasional job	3	5	4	5	4	1	0	2
Former spouse/partner	4	2	4	3	4	-	2	3
Government training scheme	-	0	0	0	1	0	-	0
Educational grant	2	3	3	3	2	-	-	1
Interest from savings/investments	-	-	-	2	-	1	7	3
Rent from property	-	-	-	-	0	0		0
Other regular source	1	-	0	4	1	1	1	2
<i>State benefits:</i>								
Income support/pension credit	65	65	65	54	67	63	53	58
Child benefit	96	92	94	71	75	15	1	42
State retirement pension	3	1	2	3	2	37	97	37
Disability living allowance	18	24	21	12	28	39	13	21
Child tax credit	35	30	33	25	25	3	1	14
Incapacity benefit	11	18	14	11	21	32	3	14
Working tax credit	14	21	17	11	16	3		8
Attendance (carer's) allowance	6	9	7	5	14	7	14	11
Jobseekers allowance	7	2	5	10	8	4	1	6
Other benefits	3	7	4	5	4	10	3	5
Received at least one benefit	98	98	98	89	97	99	100	96
No source of income	1	1	1	1	0	-	-	0
Equivalised net weekly household income quintiles^a								
Highest	21	19	20	23	17	19	33	24
2nd	28	19	24	22	21	13	18	19
3rd	16	22	18	18	18	19	26	20
4th	25	25	25	16	22	15	17	18
Lowest	12	15	13	22	23	34	7	19
<i>Base (unweighted)</i>								
Sources of income	276	212	488	483	493	334	533	1843
Equivalised income	270	204	474	466	475	322	495	1758

- No observations.

^a The equivalised net weekly household income quintiles are: Lowest: less than £120.36; 4th: £120.37 to £160.47; 3rd: £160.48 to £188.56; 2nd: £188.57 to £226.89; Highest: £226.90 and over.

Table 3.11c

Sources of income and equivalised net weekly household income, by age

Aged 2 and over

Income sources, Weekly income	Age group		Total children	19-34	35-49	50-64	65+	Total adults
	2-10	11-18						
	%	%						
Sources of income								
Regular job	27	39	32	34	29	17	1	20
Occasional job	4	4	4	5	5	1	0	3
Former spouse/partner	5	2	4	3	3	-	1	2
Government training scheme	0	0	0	0	1	0	-	0
Educational grant	2	2	2	4	2	1	-	2
Interest from savings/investments	0	-	0	1	-	1	6	2
Rent from property	-	-	-	0	0	1	-	0
Other regular source	1	1	1	4	1	1	1	2
<i>State benefits:</i>								
Income support/pension credit	63	64	63	48	57	62	52	54
Child benefit	97	93	95	62	66	14	2	36
State retirement pension	2	1	2	3	3	27	97	36
Disability living allowance	17	22	19	14	30	41	16	24
Child tax credit	36	33	35	21	24	2	1	12
Incapacity benefit	13	14	13	13	27	42	3	19
Working tax credit	17	25	20	11	16	2	0	7
Attendance (carer's) allowance	10	10	10	7	13	11	14	11
Jobseekers allowance	7	5	6	14	12	6	1	8
Other benefits	4	6	5	4	5	7	4	5
Received at least one benefit	98	99	98	84	97	97	100	95
No source of income	0	0	2	0	0	0	1	0
Equivalised net weekly household income quintiles^a								
Highest	17	17	17	22	15	14	31	21
2nd	28	20	24	18	20	12	19	18
3rd	20	21	20	18	17	18	25	20
4th	24	24	24	18	21	15	17	18
Lowest	11	19	14	24	27	40	8	23
<i>Base (unweighted)</i>								
Sources of income	515	411	926	677	718	589	797	2781
Equivalised income	502	396	898	641	694	563	743	2641

- No observations.

^a The equivalised net weekly household income quintiles are: Lowest: less than £120.36; 4th: £120.37 to £160.47; 3rd: £160.48 to £188.56; 2nd: £188.57 to £226.89; Highest: £226.90 and over.

Table 3.12

Area characteristics of the low income population, by country/region

Aged 2 and over

Area characteristics	Country/region							Total
	England				Scotland	Wales	Northern Ireland	
	North	Central/ Midlands	South	All England				
	%	%	%	%	%	%	%	
Index of multiple deprivation^a								
1st quintile (least deprived)	1	-	4	2	-	5	14	-
2nd	1	4	11	6	8	9	19	-
3rd	15	19	15	16	15	20	14	-
4th	18	15	26	21	35	22	18	-
5th (most deprived)	65	63	44	55	41	44	35	-
Area type								
Urban	13	18	28	21	7	7	18	19
Suburban	86	81	70	78	83	86	65	78
Rural	1	1	1	1	10	7	17	3
<i>Base (unweighted)</i>	<i>1000</i>	<i>492</i>	<i>941</i>	<i>2433</i>	<i>392</i>	<i>437</i>	<i>466</i>	<i>3728</i>

- No observations.

^a Since each country has its own deprivation index, they cannot be added together.

Table 3.13

Area type of the low income population, by sex and age

Aged 2 and over

Area type	Age group							Total adults
	2-10	11-18	Total children	19-34	35-49	50-64	65+	
	%	%	%	%	%	%	%	%
Males								
Urban	22	16	19	28	14	11	20	18
Suburban	77	81	79	71	83	86	76	79
Rural	1	3	2	1	3	4	5	3
Females								
Urban	28	12	21	24	20	18	14	19
Suburban	70	84	76	76	78	80	82	79
Rural	2	4	3	1	2	3	4	3
All								
Urban	25	14	20	25	18	15	16	18
Suburban	74	82	77	74	80	82	80	79
Rural	2	4	3	1	3	3	4	3
<i>Base (unweighted)</i>								
<i>Males</i>	<i>239</i>	<i>200</i>	<i>439</i>	<i>194</i>	<i>226</i>	<i>258</i>	<i>268</i>	<i>946</i>
<i>Females</i>	<i>278</i>	<i>215</i>	<i>493</i>	<i>483</i>	<i>494</i>	<i>336</i>	<i>537</i>	<i>1850</i>
<i>All</i>	<i>517</i>	<i>415</i>	<i>932</i>	<i>677</i>	<i>720</i>	<i>594</i>	<i>805</i>	<i>2796</i>

Table 3.14

Accommodation and amenities of the low income population, by country/region

Aged 2 and over

Tenure, PPR, Amenities	Country/region							Total
	England				Scotland	Wales	Northern Ireland	
	North	Central/ Midlands	South	All England				
%	%	%	%	%	%	%	%	
Tenure								
Own outright	10	13	8	10	6	12	11	10
Own with mortgage	8	9	9	9	8	7	12	9
Rent from local authority	40	43	45	42	56	46	39	44
Rent from housing association	25	22	26	25	19	16	15	24
Rent privately, furnished	1	2	4	3	5	1	7	3
Rent privately, unfurnished	15	11	9	11	6	18	16	11
Persons per room (ppr)								
Under 0.5 ppr	39	31	32	34	38	37	34	35
0.5 to 0.65 ppr	25	22	21	22	27	22	21	23
0.66 to 0.9 ppr	17	24	20	20	14	27	33	20
1 ppr	7	13	16	12	14	6	8	12
Over 1 ppr	12	10	11	11	7	9	5	10
Household amenities								
Has fridge	99	100	99	99	99	100	99	99
Has freezer	87	86	88	87	85	89	88	87
Has microwave	92	89	86	89	89	91	93	89
Has hob	98	97	95	97	97	98	100	97
Has oven	98	96	94	96	93	97	99	96
Has adequate food storage	83	80	85	83	82	87	87	83
Does not share food storage	98	98	97	97	100	100	98	98
Base (unweighted) ^a	998	490	938	2426	391	437	447	3701

^a The bases shown are for tenure and may vary slightly for the other variables.

Table 3.15

Accommodation and amenities of the low income population, by age

Aged 2 and over

Tenure, PPR, Amenities	Age group		Total children	19-34	35-49	50-64	65+	Total adults
	2-10	11-18						
	%	%						
Tenure								
Own outright	4	3	3	2	5	16	26	13
Own with mortgage	6	13	9	5	14	15	3	9
Rent from local authority	47	50	48	41	44	39	41	42
Rent from housing association	28	22	26	24	24	21	22	23
Rent privately, furnished	3	1	2	11	1	1	0	3
Rent privately, unfurnished	13	11	12	17	12	9	7	11
Persons per room (ppr)								
Under 0.5 ppr	5	13	8	21	30	61	76	48
0.5 to 0.65 ppr	24	26	25	27	24	24	13	21
0.66 to 0.9 ppr	30	34	32	24	23	8	4	15
1 ppr	20	15	18	17	12	4	3	9
Over 1 ppr	21	12	17	11	10	4	4	7
Household amenities								
Has fridge	100	100	100	99	98	99	99	99
Has freezer	89	92	90	88	90	86	80	86
Has microwave	93	93	93	91	89	90	81	87
Has hob	98	98	98	97	97	98	95	96
Has oven	97	96	97	95	97	95	94	95
Has adequate food storage	78	81	79	77	82	88	94	85
Does not share food storage	100	98	99	92	99	98	99	97
<i>Base (unweighted)^a</i>	<i>516</i>	<i>410</i>	<i>926</i>	<i>671</i>	<i>716</i>	<i>587</i>	<i>801</i>	<i>2775</i>

^a The bases shown are for tenure and may vary slightly for the other variables.

Table 3.16a

Education of the low income population, males, by age						
<i>Males aged 16 and over</i>						
Education	Age group					Total males aged 16 & over
	16-18	19-34	35-49	50-64	65+	
	%	%	%	%	%	%
Males						
Age finished full-time education						
15 and under	13	16	19	79	86	48
16	22	40	52	16	6	27
17	1	4	8	1	3	4
18 and over	-	22	18	4	5	11
Still in full-time education	64	17	3	0	-	10
Highest qualification achieved						
Degree or equivalent	-	4	9	3	3	4
Higher education below degree level	-	6	13	4	2	5
GCE, A level or equivalent	-	5	8	6	0	4
GCSE Grades A-C or equivalent	12	20	22	11	4	13
GCSE A-C or above	12	35	51	24	9	27
GCSE Grades D-G, Commercial qualifications, Apprenticeship	9	6	4	4	7	6
Foreign or other qualifications	-	5	4	9	6	5
No qualifications	15	38	38	62	78	51
Still in full-time education	64	17	3	0	-	10
<i>Base (unweighted)</i>	75	194	226	258	268	1021

- No observations.

Table 3.16b

Education of the low income population, females, by age						
<i>Females aged 16 and over</i>						
Education	Age group					Total females aged 16 & over
	16-18	19-34	35-49	50-64	65+	
	%	%	%	%	%	%
Females						
Age finished full-time education						
15 and under	14	14	22	71	87	47
16	29	45	55	18	9	32
17	2	9	6	4	3	5
18 and over	-	18	14	6	1	10
Still in full-time education	55	13	3	-	0	6
Highest qualification achieved						
Degree or equivalent	-	3	1	5	0	2
Higher education below degree level	-	6	7	5	1	4
GCE, A level or equivalent	-	5	6	2	0	3
GCSE Grades A-C or equivalent	21	29	24	6	2	16
GCSE A-C or above	21	44	39	20	4	26
GCSE Grades D-G, Commercial qualifications, Apprenticeship	7	9	7	2	3	6
Foreign or other qualifications	1	5	7	10	3	5
No qualifications	17	30	46	70	90	58
Still in full-time education	54	13	3	-	0	6
<i>Base (unweighted)</i>	60	483	494	336	537	1910

- No observations.

Table 3.16c

Education of the low income population, by age						
<i>Aged 16 and over</i>						
Education	Age group					Total aged 16 & over
	16-18	19-34	35-49	50-64	65+	
	%	%	%	%	%	%
Age finished full-time education						
15 and under	13	15	21	75	87	47
16	25	43	54	17	8	30
17	1	7	7	3	3	5
18 and over	-	19	15	5	3	10
Still in full-time education	60	15	3	0	0	8
Highest qualification achieved						
Degree or equivalent	-	3	3	4	1	3
Higher education below degree level	-	6	9	4	1	5
GCE, A level or equivalent	-	5	7	4	0	4
GCSE Grades A-C or equivalent	16	26	23	8	3	15
GCSE A-C or above	16	41	43	22	6	27
GCSE Grades D-G, Commercial qualifications, Apprenticeship	8	8	6	3	5	6
Foreign or other qualifications	1	5	6	10	4	5
No qualifications	16	32	43	67	86	55
Still in full-time education	60	15	3	0	0	8
<i>Base (unweighted)</i>	135	677	720	594	805	2931

- No observations.

Table 3.17a

Health of the low income population, males, by age									
<i>Males aged 2/16 and over</i>									
Long-term and recent illness	Age group			Total boys	19-34	35-49	50-64	65+	Total men
	2-10	11-18							
	%	%	%	%	%	%	%	%	
Males									
Long-term illness^a									
No long-term illness	-	82	82	64	49	21	30	41	
Has a non-limiting long-term illness	-	11	11	9	11	12	21	14	
Has a limiting long-term illness	-	7	7	27	39	66	49	45	
Recent illness^b									
Cut down activities in last 2 weeks due to illness	12	8	10	11	24	25	14	18	
Had an accident requiring doctor or hospital in last 12 months	17	25	21	23	25	15	9	18	
Required hospital stay in last 12 months	6	7	7	5	12	22	20	15	
<i>Base (unweighted)</i>									
<i>Aged 16 and over</i>	-	75	75	194	226	258	268	946	
<i>Aged 2 and over</i>	239	200	439	194	226	258	268	946	

- No observations.

^a For long-term illness questions, the base is age 16 and over.

^b For recent illness, the base is age 2 and over.

Table 3.17b

Health of the low income population, females, by age and sex

Females aged 2/16 and over

Long-term and recent illness	Age group		Total girls	19-34	35-49	50-64	65+	Total women
	2-10	11-18						
	%	%	%	%	%	%	%	%
Females								
Long-term illness^a								
No long-term illness	-	75	75	73	55	26	28	47
Has a non-limiting long-term illness	-	7	7	9	12	14	21	14
Has a limiting long-term illness	-	17	17	18	33	61	51	39
Recent illness^b								
Cut down activities in last 2 weeks due to illness	9	5	7	11	20	37	22	21
Had an accident requiring doctor or hospital in last 12 months	10	23	16	16	12	13	14	14
Required hospital stay in last 12 months	7	5	6	14	15	18	16	16
<i>Base (unweighted)</i>								
Aged 16 and over	-	60	60	483	494	336	537	1850
Aged 2 and over	278	215	493	483	494	336	537	1850

- No observations.

^a For long-term illness questions, the base is age 16 and over.^b For recent illness, the base is age 2 and over.

Table 3.17c

Health of the low income population, by age

Aged 2/16 and over

Long-term and recent illness	Age group		Total children	19-34	35-49	50-64	65+	Total adults
	2-10	11-18						
	%	%	%	%	%	%	%	%
Long-term illness^a								
No long-term illness	-	79	79	70	53	24	29	45
Has a non-limiting long-term illness	-	9	9	9	11	13	21	14
Has a limiting long-term illness	-	11	11	21	35	63	50	41
Recent illness^b								
Cut down activities in last 2 weeks due to illness	10	7	9	11	22	32	19	20
Had an accident requiring doctor or hospital in last 12 months	14	24	18	18	16	14	12	15
Required hospital stay in last 12 months	7	6	6	11	14	20	17	15
<i>Base (unweighted)</i>								
Aged 16 and over	-	135	135	677	720	594	805	2796
Aged 2 and over	517	415	932	677	720	594	805	2796

- No observations.

^a For long-term illness questions, the base is age 16 and over.^b For recent illness, the base is age 2 and over.

Low Income Diet and Nutrition Survey

LIDNS is a survey of the diets and nutritional status of the low income population in the UK.

Over 3700 adults and children were interviewed between November 2003 and January 2005. Information was collected from face-to-face interviews, four 24 hour dietary recalls, physical measurements and analyses of blood samples.

Volume 1: Background; methods; sample characteristics

Volume 2: Food consumption; nutrient intake

Volume 3: Nutritional status; physical activity; economic, social and other factors

An accompanying CD includes the Main Report Volumes 1-3, the Summary, along with Appendices and Supplementary Tables.

