

LIDNS

Low Income Diet and Nutrition Survey 2003-2005

User Guide

1. Background

The Low Income Diet and Nutrition Survey (LIDNS) was commissioned by the Food Standards Agency ('the Agency'). It was carried out by a collaboration of the following organisations: the National Centre for Social Research, the Nutritional Sciences Research Division at King's College London; the Department of Epidemiology and Public Health at the Royal Free; University College London Medical School; the Institute of Food Research and the Northern Ireland Statistics and Research Agency.

The aims of LIDNS:

- Provide quantitative data on the food and nutrient intakes, sources of nutrients and nutritional status of low-income groups.
- Describe the characteristics of individuals with intakes of specific nutrients above or below the national average.
- Assess the diets of low-income consumers to determine the extent to which they are sufficiently nutritious.
- Evaluate the extent to which the diets of low-income consumers vary from expert recommendations.
- 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.
- Measure blood indices that provide evidence of nutritional status or dietary biomarkers.
- Assess physical activity levels of low-income groups.
- Provide basic information on smoking and oral health status in relation to diet.
- Examine the relationship between dietary intake and factors affecting food choice in low-income groups.
- Examine possible relationships between diet and risk factors in later life.

2. Survey Design

LIDNS was a multi-stage clustered sample survey of food consumption, nutritional status and relevant social and economic factors in low income (materially deprived) households in the UK.

There were five stages of selection (ward, address, household, deprivation (based on screening questionnaire) and respondent). The selection procedure over-sampled households in Wales, Scotland and Northern Ireland. The final analyses, however, are weighted to reflect the true distribution of low income households across the UK.

Either one adult from one-person Catering Units and two people at random from multi-person Catering Units were selected. In Catering Units including at least one child, one adult and one child was selected. In Catering Units with no children, two adults were selected.

Permission for all children under 16 was obtained from the child's parent(s) before the interviewing the child. If a child was not living with his/her natural or adoptive parent, permission was obtained from the person(s) in the Catering Unit who is *in loco parentis* for that child on a permanent/long-term basis. For example, a foster parent or a grandparent who was bringing the child up instead of the parents.

Prior to the main survey a doorstep screening questionnaire was administered by interviewers to ask questions about housing tenure, car ownership, employment status and receipt of benefits and pension. The answers were used to create a deprivation score. Households with a score of 4 or more were considered eligible, and those with a score of 0 or 1 were considered ineligible. If a household fell on the boundary of eligibility (a score of 2 or 3), a further question was asked about household income. This helped to screen out those who scored 3 points but had a high income and to screen in those with only 2 points but who had a low income. The answers to the deprivation questions and to questions about household composition, smoking and food consumption were used to assess non-response bias.

There were two main parts to the survey: an interviewer stage and a nurse visit.

The interviewer stage included extensive face-to-face CAPI interviews (with an interview with the main food provider if he or she was not one of the selected respondents); four repeat 24 hour dietary recalls with every respondent on random days within an approximately 10-day window; placement and collection of confidential self-completion questionnaires; and measurement of height and weight.

On successful completion of the interviewer stage (including three or four 24 hour dietary recalls), each respondent was invited to take part in the next stage, a visit from a nurse. Nurses collected information on prescribed medicines and dietary supplements, took additional physical measurements of body size (e.g. waist and hip circumference), measured blood pressure, and took a blood sample from respondents aged 8 and over.

Field work was conducted throughout the year (from November 2003 through March 2005) in order to take into account potential seasonal variations in food consumption.

3. Using the Data

3.1 Datasets

Data collected during the survey are contained in different data files described below.

Name of Dataset	No. records	Description of Dataset
Household.sav	2430 (614 variables)	CAPI data collected during Interviewer visits to the household. All data are at the household level and include household grid, the MFP interview, household income, occupation of the Household Reference Person etc. Only households where at least one respondent was fully productive are included.
Individual.sav	3728 (1239 variables)	CAPI data collected during Interviewer and Nurse visits to the household. All data are at individual level and include all respondents who were fully productive to the interviewer stage, irrespective of whether they were visited by a nurse. Data also include information collected in the self-completion questionnaires and blood analyte data for each individual who was fully productive to the interviewer stage, irrespective of whether they provided a blood sample.
Food level data.sav	328269 (152 variables)	Data from 24 hr recalls plus nutrient data at the food level.
Day level data.sav	14837 (511 variables)	Data from 24 hr recalls plus nutrient data at the day level (aggregated from the food level data). Also includes info from the 24 hour questions asked after each recall.
Person level nutrient and food single.sav	3728 (2559 variables)	Data from 24 hr recalls plus nutrient data at the day level (aggregated from the day level data).

Due to a number of post-reporting edits, the archived data may not always match the tables in the report.

3.2 Merging datasets

As various data are contained in different data files, the users may need to merge several datasets together for the purposes of their analysis.

For merging data at the household level, use variable **shserial** (household serial number), which has a unique value for each household.

For merging data at the individual level, use variables **shserial** and **serp**. Variable **serp** contains respondent number and can take values 1 or 2 (as there were maximum two respondents per household).

3.3 Weighting variables

Weighting was required for two reasons:

- (1) to remove any bias in the sample resulting from unequal selection probabilities, and
- (2) to reduce non-response bias.

There are two stages to the weighting scheme, the first is a set of design weights, which correct the unequal

selection probabilities, and the second is a set of non-response weights. This process resulted in four weights as follows:

1. The **Catering Unit weight (CU_wt)** should be used for all analyses at the household level. It incorporates the CU selection weight and the weight for non-response to the household questionnaire. The CU weight is included in the Hhold dataset.
2. The **individual weight (Indiv_wt)** should be used for analyses at the individual level which use data collected in the CAPI, self-completions or in 24 hour recalls. The individual weight is composed of the individual selection weight and the weight for non-response to the household questionnaire. The individual weight is included in the Person dataset.
3. The **nurse weight (nurse_wt)** should be used for any analyses of nurse data. This weight incorporates the individual selection weight, the weight for non-response to the household questionnaire and the weight for non-response to the nurse visit. The nurse weight is included in the Nurse dataset.
4. The blood sample weight (**blood_wt**) should be used for analyses of the blood data. This weight incorporates the individual selection weight, the weight for non-response to the household questionnaire, the weight for non-response to the nurse visit and the weight for non-response to the blood sample. The blood weight is included in the Blood dataset.

If different levels of data are used in an analysis, then the weight from the later stage would be used. For instance a table of a household level variable crossed with a variable from the individual questionnaire would require the individual weight. And a table of an individual level variable crossed with a nurse variable would require the nurse weight.

3.4 Stratification & Clustering

Sample stratification involves two steps:

- (a) dividing the population of sampling units into population sub-groups, known as strata
- (b) selecting a separate sample per strata

For LIDNS, within each country, the population of wards was stratified by region, then by population density and then by level of deprivation. The stratification variable (**Strata**) can be found in ARF dataset.

A 'clustered' sample is defined as a sample that is selected in two or more hierarchical stages, different 'units' being selected at each stage, and with multiple sub-units being selected within higher order units. In LIDNS, a five-stage clustered sample was achieved, with the cluster hierarchy being:

- wards
- addresses
- households
- dietary respondents
- catering units (CUs)

The clustering variable (**Area**) can be found in the Sample info dataset.

3.5 Missing values conventions

- 1 Not applicable. This code is used to signify that a particular variable did not apply to a given respondent because of internal routing (e.g. questions for children only) or because the respondent did not participate in a particular element of the survey (e.g. refused a nurse visit).
- 8 Don't know
- 9 No answer/ Refusal

These conventions have also been applied to most of the derived variables.

4. Documentation

- **Survey documents**

This contains the CAPI documentation for interviewer visit and nurse schedule, self-completion questionnaires, showcards, documents related to 24 hour recalls, consent forms, interviewer and nurse project instructions and other survey documents.

- **Coding and editing instructions**

This contains details of food coding and instructions for office editing and coding of the CAPI data and self-completions.

- **Derived variable specification**

This contains details of how derived variables were created.