National Diet and Nutrition Survey: people aged 65 years and over.

Oral health survey

USER GUIDE

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1 Background, purpose and research design

1.1 The NDNS programme

The National Diet and Nutrition Survey (NDNS) programme is a joint initiative, established in 1992 between the Ministry of Agriculture, Fisheries and Food (MAFF) and the Department of Health (DH).

The NDNS programme is intended to provide a comprehensive, cross-sectional picture of the dietary habits and nutritional status of the population of Great Britain.

The NDNS programme aims are to:

- provide detailed quantitative information on the food and nutrient intakes, sources of nutrients and nutritional status of various sub-groups in the population to inform Government policy.
- describe the characteristics of those with intakes of specific nutrients above and below the national average.
- provide a database that could be used to estimate dietary intakes of natural toxicants, contaminants and additives for food chemical risk assessment.
- measure haematological, biochemical and other indices that give evidence of nutritional status and relate those to dietary, physiological and social data.
- provide height, weight and other measurements of body size of a representative sample of individuals and examine their relationship to social, dietary and other data, including data from blood analyses.
- monitor the diet of the population to establish the extent to which it is nutritionally adequate and varied.
- monitor the extent to which quantitative dietary and nutritional targets set by Government are being met.
- assess physical activity levels and relate these to dietary intake, nutritional and physiological status.
- provide detailed information on the condition and function of the tissues of the mouth in relation to dietary intake and nutritional status.
- help determine possible relationships between diet and nutritional status and ill health in later life.

The NDNS programme builds on the experience gained from the earlier Dietary and Nutritional Survey of British Adults [1]. As different methodologies may be appropriate for different age groups, the programme is separately considering different age groups in the population; children aged 1½ to 4½, young people aged 4 to 18 years, adults aged 19 to 64 years and adults aged 65 years and over. The report of the survey of children aged 1½ to 4½ years was published in 1995 [2].

The NDNS for people aged 65 years and over is the second in this series and it has been followed by an NDNS for young people aged 4 to 18 years. Each study comprises a dietary component, involving a questionnaire-led interview, completion of a detailed dietary record, anthropometrical measurements and blood and urine analyses.

The mouth is an integral part of the gastro-intestinal system, and disease of the dental tissues is abundant and, in many cases, irreversible. The sequelae of dental disease, such as tooth loss and impaired masticatory function, are cumulative over a lifetime and may have a limiting effect on dietary intakes. The diet may also have a major impact on the condition of the dental tissues; dietary sugars being instrumental in dental caries and acid rich foods implicated in tooth wear. For these reasons an oral health component has been included in the NDNS of children aged 1½ to 4½ years, for the survey reported here for those aged 65 years and over, and is being undertaken in the NDNS of young people aged 4 to 18 years. The oral health component of the surveys involves a questionnaire-led interview along with a detailed dental and oral examination.

1.2 NDNS: people aged 65 years and over - The background to the oral health survey

The results of the dietary and oral health components of this survey were published separately [3, 4]. However, the design of the study permits a unique opportunity to relate oral status, health status, dietary intake and nutritional status for the individuals concerned.

Previous studies of the relationship between nutrition and oral health have concentrated on younger age groups. The impact of diet and nutrition on dental disease, specifically dental caries, has been extensively researched in populations of children and young adults [5]. Until recently the value of such studies on older adults in

the United Kingdom would have been limited because of the small numbers of teeth in most older populations. More natural teeth however are being retained into old age and the impact of dental disease on diet, and of diet in dental disease, is potentially increasingly relevant.

Whilst studies to investigate the relationships between dental state, chewing ability and food choice have been conducted, these have often been small scale, non-representative or insufficiently rigorous in the collection of nutritional data. There are only very limited data linking nutrition or general health with dental status. The size of this project, and the opportunity to link dental data with accurate dietary data in a representative sample of elderly people, has allowed these matters to be addressed to some extent.

Due to the relatively complex nature of the study, the sample sizes are necessarily smaller than those used for the national studies of adults' and of childrens' dental health [6, 7]. Nevertheless the data from the NDNS series provide a valuable insight into oral health and attitudes towards oral care in specific population groups. This is of particular relevance in this study of the over 65-year-olds, as the sample for this age group was somewhat larger than the one for the most recent adult dental health survey [7] and is nationally representative. Furthermore, additional elements were recorded as part of this study, such as the number and distribution of contacts between opposing teeth and detailed data on root caries and tooth wear, as well as detailed dietary data, which had not formed part of the previous national dental health surveys.

The specification for the survey covered a number of areas of expertise, including social and dietary research, epidemiology and oral health, therefore a number of agencies and groups were involved. The Ministry of Agriculture, Fisheries and Food and the Department of Health jointly commissioned Social and Community Planning and Research (SCPR), the University College London Department of Epidemiology and Public Health (UCL) and the Medical Research Council (MRC) Dunn Nutrition Unit at Cambridge to carry out the dietary survey. The oral health survey was commissioned by the Department of Health with the University of Newcastle upon Tyne as the lead contractor in association with SCPR, UCL and the University of Birmingham.

The rôle of the University of Newcastle upon Tyne was to coordinate the survey as a whole, to develop the clinical assessment criteria and the questionnaire (along with

UCL), to undertake the pilot study, to provide one of two reference examiners for the clinical phase of the survey, to train and calibrate the clinical examiners (along with the University of Birmingham), to analyse the clinical dental data and to prepare (along with UCL) the final report.

The rôle of SCPR was to provide and train the survey staff to act as scribes for the clinical dental examination and to deliver the questionnaire-led interview, to select the sample of subjects to be seen, to coordinate the home visits of the oral health survey team, and to validate the questionnaire data.

The rôle of UCL was to develop the questionnaire used in this survey (along with the University of Newcastle upon Tyne), to provide the second of the two reference dental examiners for the clinical phase of the survey, to analyse the questionnaire data from the survey and to prepare (along with Newcastle) the final report.

The rôle of the University of Birmingham was to recruit and assist with the training of the clinical examiners for the project and coordinate, on a day to day basis, the home visits for the clinical dental examination.

Subjects for the oral health survey were drawn from the same sample of subjects as the dietary survey.

1.3 The dietary survey

This survey was designed to meet the aims of the NDNS programme, which are outlined above (section 1.1), in providing detailed information on the current dietary behaviour and nutritional status of people aged 65 years and over in Great Britain. Data for the dietary survey are also available from the archive.

1.4 The aims of the oral health survey

The aim for the oral health survey of people aged 65 years and over was to provide accurate information on the condition and the function of the tissues in the mouths of a national sample of subjects aged 65 years and over in relation to their dietary and nutrition status. The four specific objectives were to:

- establish the dental and oral health status of the sample including the condition of natural teeth and dentures along with the ability to chew and swallow. This was to give a nationally representative picture of the oral health status and level of function of older adults in Great Britain.

- identify any relationships between patterns of clinical dental and oral disease and general health, including illness, disability, or medication usage. This was to address specifically the relationship between the oral condition and dietary intakes and nutritional status.
- assess the impact of nutritional status, dietary intake and age on dental and oral diseases and conditions, such as dental caries of the crowns and roots of the teeth, and wear of the natural teeth.
- assess the degree to which the condition of an individual's mouth influences the quality of daily life and their utilization of and satisfaction with dental care. This was to include the perceived need for dental treatment.

The dietary survey collected detailed information about the quantities of foods and nutrients consumed by the sample of elderly people, as well as demographic data, anthropometric measurements and measurements of the levels of certain nutrients in blood and urine. To meet the aims of the oral health survey it was necessary to gather additional clinical information, by carrying out an examination of the mouth, and to obtain further information relating specifically to oral health by using a further questionnaire-led interview.

The study was designed to take place in four waves over a one year period to make allowance for seasonal variations in food consumption. One quarter of the overall sample were examined in each wave, with care being taken to ensure that there was appropriate representation of each area of Great Britain in each wave. Separate samples were drawn for free-living individuals, that is people living in private households, and for those living in residential or nursing homes, referred to as the institution sample, to reflect the large proportion of institutionalised older adults in this age group.

1.5 Feasibility study and pilot work

A feasibility study for the dietary survey was carried out in February 1994 to test the sampling procedures, questionnaires and dietary methodology and to develop protocols for taking physical measurements and blood and urine collection for both the free-living and the institution samples. This study showed that the methodologies were feasible. Further detail of this study can be found in the report for the dietary survey[3].

A pilot study (appendix 3) for the oral health survey was undertaken in November of 1994 to test the questionnaire and the feasibility of the dental and oral examination under field conditions. This study showed that the methodology was feasible, although some minor modifications to protocols were undertaken before the first wave of oral examinations. These included changes to the wording of a few questions where respondents had difficulty with interpretation, and some alterations to the procedure of the visit to ensure smooth running.

1.6 Personnel

Interviewers and nurses who had been recruited and trained by SCPR conducted fieldwork for the dietary survey. Interviewer and nurse training for the dietary survey procedures were carried out at two-day briefings conducted by the survey team, including researchers from SCPR and staff from UCL and the Dunn Nutrition Unit, including the survey doctor. Staff from the two client departments also contributed to these briefings.

Dentists who had been recruited by The University of Birmingham Dental School and interviewers who had been recruited and trained by SCPR conducted fieldwork for the oral health survey. A total of 11 dental examiners took part in this survey, nine regional examiners recruited by the University of Birmingham and two principal examiners, one each from UCL and The University of Newcastle. The two principal examiners were calibrated with each other and provided a benchmark for the training and calibration of the other examiners (see section 2.3). They also covered for illness or other absence during the fieldwork waves on the part of the regional examiners, carried out any examinations that could not be completed in a given sector by the regional examiners during the time when they were available and undertook a limited number of repeat examinations in all areas of the country during the course of the study to monitor examiner performance.

1.7 The study design

Fieldwork was distributed over four waves, each of five months duration; the first three months were used for the diet and nutrition survey and the subsequent two months for the oral health survey. The timetable for the four fieldwork waves of the dietary and oral health surveys is set out in table 2.1.

Table 2.1

	Dietary Survey	Oral Health Survey
Wave 1	October to December 1994	January to February 1995
Wave 2	January to March 1995	April to May 1995
Wave 3	April to June 1995	July to August 1995
Wave 4	July to September 1995	October to November 1995

Ethical Approval

Ethical approval for this survey was obtained from the ethics committee for each area involved in the survey. This was undertaken as part of the ethical approval for the survey as a whole and was the responsibility of the survey doctor employed by the MRC Dunn Nutrition Unit at Cambridge.

Sampling

Each of the first stage selection units comprised 80 postal sectors; 20 sectors were allocated to each of the four fieldwork waves. The allocation took account of the need to have equal numbers of households in each wave of the fieldwork, and for each wave to be nationally representative.

The arrangements for the separate institution sample were slightly different. The postal sectors contained too few institutions so the postal districts, from which the sectors were drawn for the free-living sample, were adopted as the first stage units for the institution sample. Thus 80 postal districts were selected, one for each of the postal sectors used in the free-living sample. These were visited during the same wave as the free-living sample for the equivalent sector.

Further details of sampling are given in section 2.1 of this guide, and a full and detailed account of the sampling procedures and response to the postal selection is given in appendix H of the report of the dietary survey[3].

Letters were sent to each member of the free-living sample and to the manager of each sampled institution in advance of a personal call by one of the survey interviewers. Letters were also sent to Chief Constables of Police, Directors of Public Health and Directors of Social Services with responsibility for the selected areas, informing them when and where the survey would be taking place. These letters are reproduced in appendix B of the report of the dietary survey[3].

The dietary survey

To meet the aims of the dietary survey it was necessary to collect dietary data, conduct physical measurements, and take blood and urine samples and for the oral health survey a detailed oral and dental examination was also required. Trained interviewers completed the collection of background information, trained nurses undertook physical measurements and the oral and dental examinations were carried out by trained, calibrated dentists.

Survey interviewers asked participants to:

- answer an interviewer-administered questionnaire, collecting general information about dietary habits, details of dietary supplements and medicines taken, and background information about physical activities and health.
- keep a four-day weighed record of all food and drink consumed both in and out of the home (the food diary).
- answer a short questionnaire after the recording period had finished, concerning any difficulties in keeping the dietary record and any circumstances which may have affected their eating habits during the recording period, such as illness (this information would assist the survey nutritionists in evaluating the quality of the dietary record).
- keep a seven-day record of the number of bowel movements.
- answer an interviewer-administrated memory questionnaire.
- complete a depression questionnaire.
- agree to be visited by a survey nurse.
- agree to be visited by a dental examiner, and where this was agreed to, answer an interviewer-led questionnaire collecting information about eating and chewing difficulties, dry mouth and the impact of these on quality of life and daily function.

Survey nurses asked the sampled individuals to:

- agree to the following measurements being taken: height, weight, demi-span, mid upper-arm, waist and hip circumferences, blood pressure and hand grip strength (definitions of these measurements can be found in appendix G of the report of the dietary survey [3]).
- agree to provide samples of blood and urine.

The dental examiner asked the sampled individuals to:

- agree to a detailed oral and dental examination including the status of any false teeth.

Interviewers were allowed to collect proxy information from a household member or carer for the questionnaires, food diary and bowel movement record, if the participant was unable to provide some or all of the information required, for example in cases of mental or physical infirmity.

Consent

The survey nurses obtained written consent for taking the blood samples and the dental examiner obtained written consent for the oral examination. If the participant had a mental infirmity and was unable to give informed consent, written proxy consent from the participant's next of kin was sought for the blood sample, other measurements and the oral examination. If there was no next of kin this was sought from their principal carer. For a detailed discussion of the ethical issues associated with obtaining proxy consent for adults please see chapter 2 of the report of the dietary survey [3].

Notification of findings

With the sampled participant's consent, their family doctor or general medical practitioner (GMP) was notified of their entry into the survey and was subsequently informed of their blood pressure measurement and some of the haematological results. In addition if the dental examiner noted any oral soft tissue lesion that would warrant further investigation a letter was sent to the subject's GMP, via the survey doctor, informing him or her of the site and nature of the lesion that had been found. Suggestions were also given for the nearest and most appropriate specialist referral centre. The letter requested that the GMP make an appropriate referral for advice and treatment if required. Copies of the reporting form and model letters for the GMP are given in appendix 2 of the report of the oral health survey [4].

2 Methodologies

2.1 The sample for the dietary survey

It was estimated that achieved samples of 1,250 free-living adults and 400 institutionalized adults were needed for analysis of the dietary survey. The achieved sample for free-living adults required approximately equal numbers of each sex for the

age-groups 65-74, 75-84 and 85 years and over in the population. However, due to the very low proportion of men aged 85 or over, the achieved sample for this group was set lower than that for the other groups. Target sample sizes of 100 for men aged 85 years and over and 230 for each of the other five groups were set. The achieved sample of adults in institutions was required to consist of roughly equal numbers of men and women, with no more than three residents sampled from any one institution. Both samples were required to cover all months of the year to reflect seasonal variation in dietary habits.

The free-living sample was selected using a multi-stage random probability design, with postal sectors as the first stage units. The small users' Postcode Address File (PAF) was used as the sampling frame. The frame was stratified according to region and 1991 census data for social class. Eighty postal sectors were selected as first stage units, with probability proportional to the number of postal delivery points; from each sector 375 addresses were selected at random and were sent a form which asked details of the sex and age of every person living in the household. An interviewer who attempted to collect the same information as on the form visited non-responding addresses. Copies of the form are reproduced in appendix B of the report of the dietary survey [3]. Households containing eligible adults were identified from the returns and a sample of individuals was selected using probabilities required to produce the target sample sizes, with only one person being sampled per household. Addresses this process selected that were found not to be households were excluded from the free-living sample.

The institution sample was selected from the postal areas that contained the postal sectors of the free-living sample, since larger geographical areas were required in order to yield a sufficient sample of institutions. A sample of residential and nursing homes for elderly people in these postal areas was drawn from List C of the Communal Establishments File for England and Wales, maintained by the Office of Population Censuses and Surveys (OPCS, now known as the Office for National Statistics, ONS), and from Section F of the General Register for Scotland. A total of 178 institutions were selected at random from these lists with further institutions being selected for use as reserves if the original selections proved to be ineligible or otherwise unproductive.

A more detailed description of the sampling procedure for the dietary survey is given in Chapter 2 of the dietary survey report [3].

2.2 The sample for the oral health survey

It was estimated on the basis of population projections from the adult dental health survey of 1988 [8] and the work of Steele *et al* [9] that a certain proportion of the population sampled for the dietary survey would be edentate. With a strong trend towards retention of natural teeth into old age now well established, recording data from all edentate subjects was seen to be neither cost effective nor necessary. All subjects who completed the various stages of the dietary survey were approached to see if they would be willing to participate in this oral health survey. Of those who agreed, all that reported that they had some remaining natural teeth (the dentate) were included in the oral health survey sample. Those without natural teeth (the edentate) were sub-sampled at random, so that approximately 60 per cent of this group would be examined. A target sample size for the oral health survey in the region of 1000 subjects was set, of whom 50 per cent should be dentate.

2.3 Examiner and interviewer training for the oral health survey

The training of personnel for the oral health survey occurred in three stages. The first stage involved one of the principal examiners and fieldwork coordinator (Dr. J.G. Steele from the University of Newcastle) and the second principal examiner (Dr. G. Tsakos from UCL) undertaking an intensive five day period of training and calibration for the oral examination in December of 1994, immediately prior to the pilot study. This was used to establish high levels of agreement between the two principal examiners so that both could undertake training of the rest of the team and field checks with confidence. Details of the inter-examiner variability for the two principal examiners are given in appendix 1. The opportunity was also taken to make minor modifications to the examination procedure and diagnostic criteria; specifically the wording of criteria for scoring wear and root surface caries, to ensure comprehensive and unambiguous recording of these conditions.

The second stage of training involved the nine regional examiners undertaking a four-day period of training in the examination protocol under the guidance of the two principal examiners. This took place in Newcastle during the first week of January

1995, immediately prior to the first wave of oral examinations. Where such a wide range of variables are to be recorded and with a large number of examiners, calibration is very difficult to achieve. However, an inter-examiner calibration exercise was undertaken during this period involving all examiners. Details of the inter-examiner variability for the full team are given in appendix 1.

The final stage of training involved both examiners and interviewers. All attended a one-day briefing session immediately prior to the start of data collection for each wave of the study. The interviewers underwent a special briefing at this stage to familiarize them with the questionnaire-led interview, to train them as dental recorders and to meet the dental examiners with whom they would be working closely during the course of that wave of the study. In the meetings prior to waves 2, 3 and 4 this was also used as an opportunity to update and advise the examiners on any problems with diagnostic criteria identified during field checks in the previous wave. The examiners completed a report detailing any operational or communication problems that they had encountered during a given wave at the end of the wave and these were addressed by the project team and corrected during the subsequent wave briefings.

2.4 The protocol for the visit

The oral health examination took place during a special visit arranged by the interviewer and was followed by the administration of the dental questionnaire. Each examination took between 5 and 25 minutes, depending on the dental status of the participant. Before the examination could take place a short set of screening questions was asked by the dentist; this was designed to identify any medical contra-indications to certain aspects of the oral health examination, for example whether or not the subject had a history of having had rheumatic fever (appendix 9).

The diagnostic criteria used throughout this survey are given in appendix 5.

Where individuals were edentate, only data on the condition of the soft tissues and the type and condition of any complete dentures were collected. For dentate subjects the examination was more extensive, starting with an examination of the coronal and then the root surfaces of the teeth to record the presence of caries, the presence, type and condition of any restorations and, in the case of the root surfaces, the presence of any exposure of the roots. A modification of the Tooth Wear Index [10] was then used to measure cervical and coronal wear. A record of the presence and position of restored

and unrestored spaces and natural tooth contacts followed this. A periodontal examination was undertaken to record the presence and severity of tooth mobility, plaque, furcation involvement, periodontal pocketing and loss of attachment. The last two were recorded at two sites on each tooth using a CPI type C probe[1]. Where a medical contra-indication to gingival probing had been found prior to the examination the periodontal examination was not undertaken, except for the recording of tooth mobility where no gingival probing was required. The instructions given to the examiners were that any participants with a history suggesting any valvular heart disease, or who had received heart by-pass surgery or replacement prosthetic joints would automatically fall into this category. Clinical judgment was used on a subject-by-subject basis by the examiners for any other potential contra-indications (for example where a subject stated that he or she had other cardiac problems or had had jaundice). The examination was completed with an examination of the soft tissues and the type and condition of any dentures. The interviewer acted as recorder for the dental examination.

After the examination was completed the dentist left the premises and the interviewer completed the questionnaire.

2.5 Dental field checks

In order to ensure high standards and accuracy of recording throughout the survey period, some field checks were undertaken during the first three waves of the survey so that any gross discrepancies could be addressed before the start of the next wave. This procedure was limited to dentate participants and involved the re-examination of a small number of subjects by one of the principal examiners. These visits were set up by the interviewer without the knowledge of the first examiner, and were conducted without reference to the original examination form. Only the oral examination was repeated. Forms from both examiners were then returned to Newcastle prior to the briefing at the start of the succeeding wave so that any gross discrepancies could be identified and appropriate feedback given to the examiner concerned. Between two and four revisits were carried out for each examiner during the survey work. The

[1] The CPI type C probe is a blunt periodontal probe with a 0.5mm diameter ball ended tip and markings on the shaft at 3.5mm, 5.5mm and 8.5mm for the measurement of pocket depths and attachment loss.

purpose of these was to maintain quality control during the survey, rather than to measure inter-examiner variability in the field.

2.6 Data handling and analysis

2.6.1 Data checking and entry

The data forms were subject to a series of checking procedures before being sent to Newcastle for entry into computerized data files. The examining dentist was responsible for ensuring that the examination form was completed correctly. This was then returned to the interviewer at the end of the session. These forms were then sent to SCPR, with all other documentation, for checking and coding of any missing data. When this was completed the forms were sent to the Data Entry Service at the University of Newcastle. The data were manually checked before entry and any queries raised with one of the principal examiners (JGS). The data were then double entered to minimize any keystroke errors. Finally some simple checking programmes were run to identify non-logical combinations on key variables.

2.6.2 Data presentation

These archived data comprise an SPSS[2]data file containing the data as generated from the field study. Summary dietary variables specifically for use in the dental analysis are also supplied. The data description is given in the appendix 8 of this document. Whilst these data can be analysed in relation to the oral health status of the population studied, they come into their own when analysed in association with the data from the dietary survey [3] Linkage between the 2 data sets is achieved using the study number which is common to both sets of data.

Weighting

Both free-living and institution samples were stratified for age and gender. Where data for the whole population is to be analysed, individual weights for each participant are required to correct for this stratification. These weights were also used to correct for known biases within the sample resulting from identifiable systematic error. Details of the weighting strategy are given in Appendix 4 including a section on how this affected the oral health survey, whilst a more complete description, including a

[2] Statistical Package for the Social Sciences, SPSS Inc., Chicago. IL. USA

comparison of weighted and unweighted sample profiles are given in appendix J of the report of the dietary survey [3]. The weights which were calculated for the dietary survey were also used for the oral health survey and are included within the archived data set as file dentwt.dat

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Appendix 1

Training and calibration for the clinical examination

Training

Training on the basis of pre-set clinical criteria encompassed all aspects of the clinical examination including the condition of crown and roots, measuring wear of coronal and cervical surfaces, recording spacing, contacts, the periodontal condition and soft tissue pathology as well as the type and condition of complete and partial dentures. All but one of these were covered in some depth. The range of possibilities for soft tissue pathology, and the relative rarity of most of these lesions, made a comprehensive training for this variable impossible. However, it was possible to train examiners to score and identify the more common lesions, specifically denture stomatitis and angular cheilitis, with the use of slides. Extensive and intensive training was undertaken for the coronal and root conditions, wear, periodontal disease, contacts and spacing. The training was undertaken by two examiners who had previously demonstrated high levels of calibration for the examination.

Calibration

Calibration is a check which takes place after training and is used to provide a measure of the level of agreement between different examiners, which has been achieved as a result of training. If the level of agreement is high then the data is highly reliable. Where the level of agreement is low, this may or may not affect the findings of the study, depending on the nature of the disagreement. The statistical measure usually used to describe this is Cohen's Kappa. A score of 0.4 to 0.6 can be regarded as "moderate" agreement, of 0.6 to 0.8 as "substantial" agreement and anything over 0.8 as "good" agreement.

Calibration requires the compliance of a large number of subjects who undergo repeated examinations in a simulated field setting. In an elderly adult population this places some limitations on the variables for which it is possible to measure the level calibration. With a total of 11 examiners and an extensive examination it was neither ethical nor feasible to attempt to measure the degree of calibration for every variable recorded. Periodontal probing was a particular problem in this respect as it was one of the most time consuming parts of the examination and the only part which sometimes

involved discomfort (this is particularly true in the cases where disease is advanced and the measurements most important). The variables to be calibrated were prioritised according to the likeliehood that they would be critical to subsequent dietary analysis, and for those dental variables deemed to be the most important in subsequent dietary analysis, the level of calibration was measured. Thus the conditions of crowns and roots, the distribution of contacts and spaces and the presence of tooth mobility were measured for calibration. Differences in the identification of teeth (for example third molars scored as second molars) were not counted as disagreement. There is usually little scope to improve the training after calibration is complete. A major emphasis in this survey was placed on excellence of training and providing clear criteria to be used for scoring, as well as demonstrating agreement between examiners.

Calibration for this survey took place in two phases. The two benchmark examiners initially measured calibration against each other for all of the key dental variables (condition of roots, crowns, the tooth wear scores, the periodontal condition and plaque, contacts and spacing). These examiners undertook both the initial training and the "field checks" when the survey was under way. Ensuring levels of calibration which were "substantial" or "good" meant that there was a consistency of approach when it came to the second phase of training and calibration Kappa scores for these variables are given in tables 1and 2.

The second phase of the calibration used the two, previously calibrated examiners as benchmarks. The remaining examiners undertook an examination of a volunteer subject and the examination was then repeated (blind) by the gold standard. Kappa scores for the examiners (numbered 1 - 9) measured against the gold standards are given in table 2.

The degree of calibration measured for the two gold standard examiners was substantial or good across all areas measured. The Kappa scores reported for the examiners against the gold standards were generally very good for coronal condition and contacts, moderate to substantial for the condition of the roots, and rather variable for mobility. The mobility variable has not been extensively used in the subsequent survey analysis. Measures of anterior spacing were also recorded and resulted in

uniform levels of good agreement (kappa scores all around 0.9), but this variable has not been required for subsequent analysis and is not included in the table.

Field Checks

To ensure that any gross errors of procedure or scoring could be quickly rectified, a series of field checks were implemented and took place during the course of the first three waves of the survey. In these instances both the gold standard examiner and the primary examiner for the district would undertake examinations of the same participant at separate times (with the minimum time in between, usually less than three weeks). The pairs of forms from this exercise were sent to be checked by the gold standards prior to the subsequent training round so that any problems could be highlighted and addressed when the examiners attended the interviewer training. Minor updates were held prior to the second and fourth waves, and a full training update was held for the examiners before the third wave of examinations using slides, models and clinical materials. This concentrated on the few areas where problems had been detected during the field checks.

Table 1. Cohen's Kappa scores between the benchmark examiners for categorical variables (unweighted kappa used where variables are categorical)

Unweighted Kappa			
Coronal condition	Root condition	Posterior Contacts	Spacing
0.95	0.79	0.79	0.90

Table 2. Cohen's Kappa scores between the benchmark examiners for variables measured. (weighted kappa used for variables recorded on a numerical scale of severity)

Weighted Kappa					
Coronal Wear	Cervical wear	Mobility	Pocket depth	Loss of Attachment	Plaque
0.71	0.63	0.62	0.73	0.71	0.67

Table 3. Cohen's Kappa scores for field examiners measured against the benchmark examiners across a range of variables during calibration exercises.

Examiner	Coronal condition	Root condition	Contacts	Mobility*
1	0.81	0.48	0.09**	0.34
2	0.67	0.61	0.67	0.94
3	0.83	0.59	0.68	0.36
4	0.76	0.49	0.76	0.63
5	0.87	0.50	0.66	0.46
6	0.86	0.55	1.00	1.00
7	0.91	0.59	0.88	0.36
8	0.86	0.77	1.00	0.65
9	0.85	0.62	1.00	0.89

* A weighted kappa was used for mobility data

**This low score was due to a simple coding error (rather than an error in the interpretation of criteria)

Appendix 2

Medical screening questionnaire

In a moment shall be doing a quick dental examination, simply to count your teeth and record the number of fillings, the condition of your gums and so on. It should take about (insert) minutes and should not cause you any significant discomfort. However, if you wish me to stop at any stage, please let me know.
First of all I would like to ask you a few questions about your medical history, just to check that there is no problem for the dental examination.

1) Have you ever had rheumatic fever or St. Vitus Dance?

2) Have you any heart problems at the moment?
   If YES, probe further

3) Have you ever had a heart murmur or problems with your heart valves?

4) Have you ever had an operation to replace and joints, for example hip or knee joints?

5) Have you ever had hepatitis or jaundice?
   If YES probe further

6) Have you ever had any medical problems which have caused problems with dental treatment in the past?
   If YES probe further.

(Full examination to be undertaken ONLY if all of the above responses have been taken into account)

Appendix 3

Instructions on the conduct of the examination given to the examiners

Please remember that it is critical that the protocol described below is adhered to at all times. It is often tempting to do things your own way, but the interviewers who will code for you will be inexperienced in dental work, and you are unlikely to spend a lot of time working for any one interviewer. They will expect you to do the exam in a specific way, if you deviate it could be disastrous.

There are a number of rules which must not be broken:

1. Always start from the patients right and work to the left except for spacing and contacts when the starting point and direction of coding must be checked with the recorder.
2. Always call out codes in the same order.
3. Never deviate from the normal order of the examination.

DMF - Crowns and roots

For this part of the examination, and those covering wear you require the probe and the mirror.

Start at the **upper right** and call out the codes in the order on the sheet: distal, occlusal, mesial, buccal and lingual. As you start a new tooth say the tooth number, for example "the five is.....". Be careful when you do this not to make the tooth number sound like one of the codes. Always try to call out the codes in groups of **five** with an obvious pause between groups. This helps the recorder to keep orientated. When a tooth is missing call out the tooth as missing rather than calling out the five codes. When you reach the midline call out "midline". This ensures that any errors of synchronisation are discovered before it becomes difficult to correct them. As with all parts of the examination, the recorder will rely on the intonation of your voice to give them guidance and keep them in the right place.

Where there are no natural upper teeth the top grid can be left completely blank, but the starting point (now the lower right) should be checked with the recorder at the beginning.

After calling out the coronal codes for one arch, then call out the root codes (distal, mesial, buccal, lingual) before moving on to the other arch. This is often quite quick if there is little recession.
The sequence then is just as it appears on the sheet:
Upper coronal - upper root - lower coronal - lower root

Wear

The wear sequence is a little different. It is much easier to do all the cervical surfaces, then all of the coronal ones, so this time you run from left to right across the grid. This is considerably easier if you give the recorder a moment to mark out missing teeth at the beginning, then you can call out a string of numbers without worrying about whether (for example) you coded a molar as a six or a seven last time. At the beginning of each row call out what you are doing, for example "lower cervical".

Spacing and contacts

Spacing and contacts are the only exceptions to the right hand start rule. For a number of reasons it is easier to start at the midline and move out than start at the right and move left.

Always call out "upper spacing, to patients right" or the equivalent instruction, and then eight codes describing the given quadrant. Remember you are not calling out the presence of missing teeth you are calling out the position of spaces, or the position of contacts.

Periodontal examination

A mirror and CPITN probe are required for this part of the examination

This part of the examination is often the most difficult, and it is the only part of the procedure which may be uncomfortable for the patient, although discomfort is uncommon provided that you do the examination properly.

Two sites have been chosen on each tooth. Whilst this approach is not ideal if every affected site is going to be detected, it should be enough to identify the worst cases. In general we look at the buccal surfaces of the upper teeth and the lingual surfaces of the lowers with a mesial and distal site on each.

Once again, always start on the upper right and go round tooth by tooth.

First, make sure the missing teeth have been marked out. Then check mobility of all upper and lower teeth, left to right, this is simple and should be completed before the rest of the examination. By doing it this way we ensure that we have some periodontal data in the (unlikely) event of you having to abandon the rest of the examination. It should also alert you to teeth with a particularly severe periodontal problem. Then go ahead and do the examination of pocket depth.

At each site you need to record two variables (pocket code and LoA code). For each tooth you need to record a plaque score, and for the molar teeth, if there are any, you need to look at the furcations. The grid for recording all of this is more complicated so you must use a consistent system and stick to it.

Start by calling out pocket and LoA codes for your first site. Then call out pocket and LoA codes for your second site, then call out your plaque score before moving on to the next tooth. When you call them out, first call out the tooth number ("the seven is.....”), then two codes (pocket and LoA), then three (pocket, LoA and plaque). Always do it the same way.

When you get to the midline call this out. Note that after the midline you start to probe the mesial site first (you do it second on the other side). This is sensible and is the way the grid has been set out. However it is also sensible to continue to append the plaque score to the codes for the second site on each tooth. Remember that the plaque score pertains to the whole tooth not to any individual site.
Furcation scores should be called out at the end, after revisiting the furcation sites.

Examination of soft tissues

A mirror, gloved finger are all that are required for this part of the examination. This literally only takes seconds, but please be careful to visualise every site as described in the diagnostic criteria and record everything you see, even if you are not sure what it is. If you find a lesion which is not listed, please make sure that you tick the "other" box.

Examination of dentures

A mirror may be all that is required, but if there is a complete denture you will need the Willis gauge and if there is a complete upper you will need an Alma gauge.

The order of the examination is such that the first part should be done with the dentures removed, and then in the case of complete dentures, they are inserted by the patient in order that the examination can be completed. The codes at the beginning of the examination which indicate whether or not dentures are worn in each arch are critical, and both boxes (upper and lower must be completed. After that the recorder will prompt you with each question and you should give him/her the appropriate response.

The end of the examination

Used instruments should be placed in the plastic box prior to sterilisation, except for Alma and Willis gauges which have been used extra-orally, these can be wiped down with a disinfectant swab. Gloves and tissues should be placed in the yellow bag.

Equipment

You will be responsible for your own equipment, particularly your head torch. Spare bulbs and batteries will be supplied, please make sure you look after this vital piece of equipment.

Checking Sheets

The interview will be conducted after the examination, and protocol has it that you should be absent from the room at this point. This will normally not be a problem, indeed on a warm summers day on the side of Loch Ness or in Cathedral Close Salisbury it might be very desirable to be out of the room. On the other hand on a wet January day in a large housing estate in an inner city, the attractions of leaving the house are less. Nevertheless this time is important and will be required for data

checking from previous visits. If you do not leave the house you must move to another room, or somewhere out of sight of the subject, and do not contribute to the interview. The questionnaire has been carefully designed and the interviewers are very experienced and will not need your help.

Please cheek the grids carefully and make sure that every relevant box is completed. You will find that on some subjects you call out codes very quickly and it may be impossible for the recorder to fill in all boxes for missing teeth. You should cheek this and complete all boxes appropriately. Remember if there is one edentate arch you need may leave this blank, but please **always** check that the code at the beginning of the questionnaire about the distribution of natural teeth (both arches, upper arch only, lower arch only or edentate) corresponds to the data on the clinical examination. This is a critical code on which a great deal of further analysis depends.

Appendix 4

Weighting procedures

1. The free living sample

It was necessary to weight the free living sample to correct for disproportionate sampling of sex and age groups, over-representation of people living alone and different co-operation rates between sub-groups of the sample. These three factors are briefly explained below.

Disproportionate sampling of sex and age groups.

This occurred because the sample was designed to yield approximately equal numbers for analysis of each sex for the age groups 65 to 74 years, 75 to 84 years and 85 years and over, although the actual incidence of these groups in the population was quite different, there being considerably fewer people in the older age groups and fewer men than women.

Over-representation of people living alone

The achieved sample was found to over-represent people who lived alone compared the population of people aged 65 years and over, as recorded in the 1991 Census. As it was expected that the diets of elderly people who lived alone would differ in important ways from those of others, it was felt necessary to incorporate a correction for this factor in the weighting procedures.

Different co-operation rates between sub-groups for region, sex and age.

Co-operation rates for the postal sift and the main stage of the survey were analysed in order to identify differences which would require corrective weighting. The following differences were identified:

- Response to the postal sift was found to vary slightly according to region, with the North West and London and the South East regions having the lowest screening response rates.

- Response to the main survey procedures were generally found to be lower among women than men, among the older than the younger age groups, and in the North West and London and the South East regions.

As the survey's main components - the interview, dietary record, physical measurements and blood and urine samples - had different levels of co-operation, it was necessary to decide which analysis base should be given priority in the weighting procedures, since full corrections could not be made for *all* bases without having *more* than one set of weights. It was decided to give priority to weighting the diary sample and to give other participants the same weights as those in the diary sample whose characteristics they shared. It was further decided to scale the weights to ensure that the weighted number of participants for the diary sample would be the same as the unweighted number.

The weights were applied in three stages:

i) Correction for screening response in the postal sift

Weights were applied separately for 8 Standard Region groupings and were calculated as follows:

$$\frac{\text{Number of selected addresses (excluding those found to be ineligible)}}{\text{Number of screened addresses}}$$

(Ineligible addresses were those which were non-residential, including empty premises and shops, and non-private households, such as residential and nursing homes).

The weights used for this stage ranged between 0.94 and 1.05.

ii) Correction for disproportionate sampling

Weights were applied separately for 24 groups formed by the intersections of men and women with six age groups (65 to 69 years, 70 to 74 years, 75 to 79 years, 80 to 84

years, 85 to 89 years, and 90 years and over) and two household size groups (those living alone and those living with others). Weights were calculated as follows:

$$\frac{\text{Number of eligible people found in that group in the postal sift}}{\text{Number of people in that group in the diary sample}}$$

The weights used for this stage ranged between 0.26 and 2.40.

iii) Correction for differential response at the main stage

Weights were applied separately for 44 groups formed by the intersections of men and worn en with five or six age groups (65 to 69 years, 70 to 74 years, 75 to 79 years and 80 to 84 years; 85 years and over for men; 85 to 89 years and 90 years and over for women), two household size groups (those living alone and those living with others), and two regions (North West and London and South East, other regions). Weights were calculated as follows:

$$\frac{\text{Number of people in that group who were selected for the main survey}}{\text{Number of people in that group in the diary sample}}$$

The weights used for this stage ranged between 0.70 and 1.54.

2. The institution sample

It was necessary to weight the institution sample to correct for disproportionate sampling of institution by area and disproportionate sampling of individuals within institutions. These two factors are briefly explained below.

Disproportionate sampling of institutions by area.

This occurred because it was decided to conduct fieldwork for the institution survey in the same sample points as the free living survey, making it easier to run the two surveys concurrently. Each sample point's chance of selection was therefore based on

its population of free living individuals rather than the population of institution residents. Within each sample point, a fixed number of institutions was issued, without regard to the actual number of institutions available in the sample frame or the numbers of residents within them.

3. Weighting and the sample for the oral health survey

The weighting procedure for the dietary survey as described above was relatively complex. The sample for the oral health survey was different again from the diary sample, with some further loss of participants occurring before the dental visit. This will have resulted in some minor alterations to the social and demographic balance of the sample. The situation is made more complex by the sub-sampling of the edentate participants, only a randomly selected proportion of the edentate were actually visited as the data which was to be gathered from this group was limited and the benefits of visiting all edentate participants therefore were limited. In order to deal with these discrepancies, a further set of weights could have been calculated to account for any socio-demographic differences and to correct for the sub-sampling of the edentate. Although this was a possibility, the differences in the socio-demographic make up between the oral health survey sample and the diary sample were small when the weights for the latter were used (see chapter 4). Furthermore the small variations which were found varied according to the dental status, rather than on the, gender, social status or region of origin of the participants. In these circumstances there was a risk of creating further error by adding new weights rather than eliminating it.

Almost all of the data reported has divided the sample into two groups, dentate and edentate. Where the percentage edentate is reported as a proportion of the whole sample, a correcting weight has been applied to the edentate group and this is indicated in the text. Chapter 4 highlights any remaining discrepancies between the sample for the oral health sample and the diary sample according to the main social and demographic variables, and these are generally small. Throughout the report the diary sample weights have been used where weighted data is reported.

Appendix 5

Diagnostic criteria for the examination

The following is the working version of the document which was issued to the examiners at the training exercise.

Diagnostic criteria

Please note that code "9" has been reserved as a general code for "unscorable" and can be used at any time. However, unscorable codes complicate analysis so please only use them where it is absolutely necessary.

1. Diagnostic criteria for decayed, missing and filled surfaces

For this part of the examination the coronal and root surfaces will be examined separately. Each surface will be coded according to the criteria given below. The examination will be primarily visual with the blunted sickle probe used solely for the removal of plaque and debris and for gentle probing of certain lesions. The probe will not routinely be inserted into the pit and fissure systems of the teeth and is intended for the removal of plaque and debris and to detect the surface texture of root surface lesions.

Coronal tissue

Coronal surfaces will be scored as follows:

Missing:	-
Sound:	0
Carious - restorable:	2
Carious - exposed:	3
Restored - needs replacement:	4
Restored - satisfactory:	*5*
Crown - satisfactory:	6
Crown - unsatisfactory:	7
Bridge pontic:	8

Unscorable surface: 9

Missing: - (dash or minus sign)

Indicates that the tooth is missing, for whatever reason.

Sound: 0

Surface is present, but is not carious or restored as defined by codes below. Fissure sealants are coded as sound unless it is clear (beyond reasonable doubt) that it is actually a sealant restoration, inwhich case it is coded as restored.

Carious - restorable: 2

A carious cavity is present which, taking into account the patients oral status, is deemed to be restorable. The criteria for diagnosis of a carious cavity are given below.

Pits and fissures: Breakdown of the walls of a pit or fissure or shadowing beneath the enamel surface, detected visually after cleaning with a probe. Stained fissures are not necessarily designated as carious.

Approximal surfaces: A cavity with a soft floor detected by gentle probing, or brown/grey shadowing detected visually from the buccal or lingual, or occlusal aspects.

Smooth surfaces: A cavity with a soft floor detected by gentle probing.

NOTE:"Arrested" caries appearing dark brown/black and having a hard floor is not designated carious, neither are hard floored hypoplastic pits.

Carious - exposed/unrestorable: 3

A carious cavity, as defined above, which is considered to be so extensive that (a) there is clearly pulp involvement or (b) restoration is not possible, bearing in mind the present dental health status of the subject. This may include frank pulpal exposure or deep decay without visible exposure or obvious pulpal involvement. This should include teeth where only the roots are retained but are so carious or broken down that they are unrestorable. Note that this is different from overdenture abutments which are **not** coded as unrestorable (they are coded "9"). To be recorded as code "3" there must be evidence that the loss of tooth substance has occurred as a result of disease or breakdown. Minor root fragments retained after extraction do not count in this category, these should be coded under oral pathology. All surfaces involved should be

coded. Any pulp exposure, even where there is no evidence of ongoing caries should be coded a "3", provided that it is clear that this resulted from decay.

Restored - needs replacement: 4

Presence of one or more restorations which require further treatment. This may be due to:

1. Caries, whether or not it is associated with the restoration.
2. The presence of a temporary filling (but **NOT** a temporary crown which is coded as 7)
3. Grossly defective permanent restoration, with deficient or overhanging margins that cannot be satisfactorily improved by adjustment, the presence of a fracture (whether or not the fragment is mobile) or a loose restration. In some cases a difficult judgement has to be made about whether a deficiency on one surface of a restoration results in the whole restoration being unsound, but in practical terms whole tooth scores will be computed during analysis so that this judgement may not be too critical.

Restored - satisfactorily: 5

One or more restorations whose margins are intact and not associated with caries, and which do not require further treatment as defined by code above. A permanent restoration may be amalgam, composite, glass (polyalkenoate) ionomer, gold (including partial veneer crowns) or porcelain.

Crown - satisfactory: 6

Presence of a satisfactory full veneer crown which does not fulfill any of the criteria listed below.

Crown - unsatisfactory: 7

1. A full veneer crown is present which is considered to be unsatisfactory. This could be due to:
2. Caries at the margin
3. A gross positive margin which cannot be satisfactorily reduced with a bur.
4. A crown preparation is present and satisfactory, or could be made to be satisfactory, but the crown has been lost.
5. A deficient margin into which a probe may be inserted.

Where a crown margin extends onto the root surface and an independent root surface lesion has come to involve the margin, this should also be coded as "7" for the crown (as well as "2" for the root).

Bridge pontic: 8

The presence of a bridge pontic replacing a single tooth. obviously where this exists all surfaces have to be coded appropriately.

Surface missing/unscorable: 9

This should include overdenture abutments or (for example) rare cases of severe wear where the surface has been **completely** lost and you have no idea about its previous condition. This should not include cases where there has been extensive carious destruction leading to complete surface loss (e.g. gross caries or large filling missing). In these cases the appropriate caries/restoration code ("3") should be applied. Otherwise, if there is a surface, or even if there is not but you can apply a code with confidence - code it (as something other than "9").

In cases where the tooth is rotated, surfaces which have assumed interproximal positions are scored as mesial and distal, and those which have assumed buccal or lingual positions should be scored as buccal or lingual, regardless of the morphology of the tooth (e.g. where the normal mesial surface is rotated lingually it should be scored as lingual).

If a permanent restoration extends onto more than one surface, it is scored as present on all surfaces on which it appears.

<u>Exposed Root Surfaces (bottom section of grids 1A andIB)</u>

The scoring system for root surfaces is different from that for coronal surfaces. The possible scores are given below:

Missing: - (dash or minus) and Unscorable: 9 (as for coronal)

Present -	no recession:		0
Gingival	recession	- sound:	1
Gingival	recession	- *caries:*	2
Gingival	recession	- gross caries/unrestorable	3
Gingival	recession	- surface restored, requires replacement	4
Gingival	recession	- satisfactorily restored:	*5*
Gingival	recession	- arrested caries	6

The diagnostic criteria are given below. The general rule should be that if root surface is visible and detectable it is scored. In order to generate meaningful results we need to know whether or not a surface is at risk, even if the total area exposed is small.

Missing: -

As for crowns

No gingival recession: 0

The gingival margin is at or above the CEJ with no exposure of root surface.

Gingival recession/exposed root - sound: 1

The gingival margin is below the CEJ exposing some (any) root surface. The exposed root surface should be sound, with no evidence of restoration or caries.

Gingival recessionlexposed root - caries: 2

Exposed root surface is carious as detected visually by yellow/brown discolouration and a softened floor on gentle probing. If there is any suspicion of ,softness it should be coded 2 as the probes are relatively blunt, and basically if it feels even a tiny bit soft a sharper probe would be likely to catch. In the case of a large lesion which crosses the CEJ, the observer must make a judgement about its origins.

Gingival recession - root surface caries with exposure: 3

Root surface caries is present which clearly involves, or is strongly suspected of directly involving the pulp.

Gingival recession - surface restored - requires replacement: 4

Exposed root surface contains one or more permanent restorations which requires complete replacement. This may include:

1. Caries associated with an existing restoration(s).
2. Temporary restoration (e.g. ZOE, polycarboxylate).
3. Grossly defective or overhanging restoration which would need to be replaced to make satisfactory.

Gingival recession - satisfactory restoration: 5

Exposed root ,surface contains one or more permanent restorations whose margins are intact and are not associated with caries.

A permanent restoration can be defined (regarding material) as for crowns above. Coronal restorations which extend onto the root surface for 3nun or more should be coded as a filled root surface, coronal restorations extending onto the root surface for

less than 3mm should be coded as purely coronal, and the root surface dealt with separately. Full coverage crowns cause a bit of a problem as it is usually impossible to judge how far beyond the gingival margin they have been extended. In cases such as these code only as a corona] restoration if no root surface is exposed, and code the root surface appropriately if it is exposed (above the gingival margin), unless you can confidently judge the extension of the crown beyond the CEJ, when the root may be coded as restored (if appropriate). The 3mm rule should apply for crowns as well. So if you are confident that the crown margin extends 3mm over the root this should be coded as restored. Where caries involves the margin of a crown extending onto the root surface, the 3mm rule applies to the most apical edge of the caries (i.e. if you think that crown plus caries extends 3mm beyond the position of the CEJ code it as 4). If you really are not sure code as crown only (i.e. score low)

Where root restorations extend onto the crown by 3mm or more both the crown and root should be coded as restored, otherwise it should be coded only as a root surface restoration.

Where restorations straddle the CEJ, but do not extend as far as 3mm in either direction a decision has to be made as to the origin of the lesion and only one or other should be coded. In most cases this should be straightforward enough. If in doubt tend towards the root. The rationale behind this is that the root is inherently more vulnerable than the enamel covered crown, so a lesion right on the CEJ is likely to have originated on the root side of it.

Gingival recession - arrested caries - 6

Exposed root surface contains an area of decay which is considered to be arrested, as indicated by the presence of a **hard** dark brown/black floor, resistant to gentle probing. Such lesions may be cavitated provided that:

1. it is certain that this is not the result of a restoration being lost (in which case it should be coded as "4").

AND

2. there is no suspicion of softness. This may seem like an exception to the "if in doubt ,score low" rule, but this is because if you suspect it is soft it probably is, given that your probe is blunt. If it is definitely hard code as "6".

Present - unscorable: 9

The tooth is present, but the presence of **recession** cannot be judged. If any root surface is visible it should be scored, even where there is extensive calculus, as caries is considered rare under calculus, Only if it is unclear whether any recession has taken place should the unscorable code be used. This may be because there is a crown or total coverage of calculus making it impossible to assess the exposure status of the root. In many cases where there are crowns there will be some root exposure as well. If exposed root surface is present, clearly recession has taken place and this should be coded.

Sometimes (e.g. overdenture abutments) there is only a root face left. This is a vulnerable root surface and should be coded appropriately. To do this divide the root face into four segments (D,M,B,L) and code each one. If there is also vertical root exposure add the segment to the appropriate root surface for coding. Obviously if there is a restoration in the centre of the root face, all four surfaces will be coded as filled, even if the filling itself is small.

In some cases there will be more than one possible code per surface. As it is impossible to multicode a convention for priority has been worked out. This is:

Primary caries > Secondary caries/restoration requiring replacement > Sound restoration > Exposed root > no recession > unscorable.

2. Diagnostic Criteria for the measurement of tooth wear

The scale of the problem of wear in the elderly is not known, and it is hoped that wear data can be used to establish the prevalence, extent and severity of tooth wear in this age group. In addition it will be possible to link the wear data to some of the other clinical and relevant sociological information to give some indication of the overall need and desire for tooth wear to be treated.

A modification of the "Tooth Wear Index", (TWI)(Smith and Knight, 1984) will be used. A full recording using this index is time consuming and requires the recording of large amounts of information on minor levels of tooth wear which is of little interest and no real relevance as regards potential treatment needs in this age group. The system which will be used on this study will score only surfaces where there has been appreciable wear (scores of over 2 on the TWI). This is not to say that all surface,, scoring above this threshold require treatment, far from it, but it does provide

a convenient cut off point for measurement such that all potentially relevant data is collected.

In this age group, wear appears to be very rare on non-functional surfaces (i.e. those which are not involved in occlusal contact). For this reason only two parts of the teeth are coded, the crowns and the roots. Crowns are not coded surface by surface. However if wear of non-functional surfaces is observed this should be recorded in the additional box with an appropriate comment (see chart).

The tooth wear examination

The teeth are visually examined as dry as possible, a probe may be used to remove loose deposits and to aid diagnosis, particularly where there may be difficulty scoring in the cervical region. Teeth are examined in the following order:

cervical surfaces of all teeth

coronal surfaces of all teeth

The teeth are scored as follows:

Score	Surface	Criteria
-	All	Tooth missing
0	All	Wear not into dentine or no distinct cervical cavity.
2	Coronal	Loss of enamel just exposing dentine
	Cervical	A definite defect present but less than ln-im in depth.
3	Coronal	Loss of enamel exposing dentine for more than one third of the individual surface (B,L,Occ). On posterior occlusal surfaces this is equivalent to wear facets of greater than 2mm
	Incisal	Loss of enamel and extensive loss of dentine, but not exposing secondary dentine or pulp. On incisal surfaces this will mean dentine facets with a bucco lingual diameter of 2mm or more (to the nearest half a millimetre).
	Cervical	A defect 1-2mm deep
4	Coronal	**Complete** loss of enamel on a surface pulp exposure, or exposure of secondary dentine. (Frank pulp exposure is most unlikely)
	Incisal	Pulp exposure or exposure of secondary dentine
	Cervical	A defect more than 2mm deep, or pulp exposure or exposure of secondary dentine.

9	Occlusal	**Unscorable.** >75% of surface obscured and no remaining functional cusp which can be coded. If any functional cusp is present and a score may be given, this should be done.
	Cervical	**Unscorable.** If any restoration, decay or calculus is present at the depth of a cervical abrasion, then this is scored 9.

If the depth of any abrasion lesion does not coincide with an existing restoration or lesion this may be scored 0-4 as above. If a cervical restoration is present which **may** possibly have been placed to treat cervical wear, given the rest of the subjects dentition, then the unscorable code (9) should be used. However where there is almost no possibility that the restoration was placed for this purpose, and no other cervical wear is present on the tooth, it should be coded as 0.

Where doubt exists the lower score should be given.

3. Diagnostic criteria for the measurement of periodontal disease

The most most widely used indices for epidemiological studies of periodontal disease in recent years have been those based around the CPITN. This index has various drawbacks, most significantly in the context of this study, that it does not give any indication of total loss of attachment, and therefore no indication of previous disease. However the use of alternative indices would allow direct comparison with only a few other studies. In this study we will record both the pocket depth and the loss of attachment scores as well as a few other key variables

The examination

The periodontal examination should only be undertaken if the patient has no medical history to contra-indicate this. Patients with a history of valvular heart disease, prosthetic heart valves, a history of Rheumatic Fever, a coronary artery by-pass or a prosthetic joint should not be examined.

Two sites on every tooth will be probed. On the upper teeth these will be the mesio-buccal and disto-buccal, and on the lower teeth the mesio-lingual and disto-lingual. These sites are very similar to those used in the 1988 Adult Dental Health Survey and are ensure good coverage. Under recording is inevitable unless all sites are scored but this would be neither practical nor valuable. In this study mesial and distal sites will be recorded.

At each site two scores will be called out, the first will be the pocket score, and the second the total loss of attachment score. The CPITN probe is graduated into bands which will correspond to the codes recorded. In molar teeth the presence of furcation involvement will be scored using a modification of an existing index. Each tooth will be checked for mobility and scored according to an existing scale (see below). A plaque score will be called out for each site. Most plaque indices rely on disclosing, but this will not be possible, so a rather crude index will be used. This will ultimately be used to separate out subjects with good plaque control from those whose plaque control is poor.

Each site:

Pocket depth	0	0-3mm
and	1	4-5mm
Loss of Attachment	2	6-8mm
	3	9-11mm
	4	12+mm (rare)
	9	unrecordable

The surface is recorded as unscorable if the CEJ cannot be estimated due to gross decay, wear or the presence of a restoration. If the position of the CEJ can be estimated with some confidence, the total loss of attachment should be measured. Crowns cause a particular problem where the crown margin has extended past the CEJ. In these cases it is reasonable to record loss of attachment from the crown margin, unless the morphology of the restoration allows you to estimate the attachment loss. Generally if you can estimate loss of attachment, please do. Unscorable codes are difficult to deal with in the analysis and are best avoided unless there is no option.Probing should be gentle (25g). Note that somtimes subgingival calculus can stop a probe penetrating to the depth of the pocket, and it may be neccessary to gently work the probe down the root surface. Loose debris can be cleared from the gingival margin using the probe if neccessary.

Plaque Score

Unfortunately none of the existing indices are appropriate for a study of this sort. What we have elected to use is the one first described by Silness and Loe (1967), with which many of the examiners may be familiar.

Plaque scores will be measured at the same sites that are used for probing, that is the buccal surfaces of the upper teeth and the lingual surfaces of the lowers, The CPI probe is run along the gingival margin in each area to help detect deposits. Only one plaque score is given per tooth.

The scores are:

0 - no visible plaque

1 - Plaque detected only detected when the probe tip is drawn along the cervical margin.

2 - A thin to moderately thick layer of plaque visible to the naked eye over the gingival area.

3 - Heavy accumulations of soft matter, the thickness of which fills out the niche between gingival margin and tooth surface. The inter-dental area is stuffed with soft debris. Gross calculus which obliterates the interdental space or hangs over the gingival margin is also coded as 3.

9 - Unscorable.

If you are conscious that you have cleared away large quantities of debris earlier in the examination, bear this in mind during your coding.

Furcation involvement

Only molar teeth are scored. This can be recorded during probing of the mid buccal or mid-lingual sites. The ball end of the probe should be moved slightly laterally to try to detect any notch or groove on the root surface. In some teeth the groove of the furcation can be detected almost immediately below the CEJ, in others it starts much lower. To code as present (1) any notch should be easy to detect and should be able to accomodate the ball end of the CPITN probe. Through and through lesions should be looked for wherever there is very obvious involvement.

Absent	- 0
Present but not through and through	- 1
Through and through lesion	- 2
Unscorable	- 9

Mobility

This is a modification of Miller's index. If you do not do a lot of adult tooth wiggling feel your own teeth to get a feel for what is normal. Even very small movements can be detected fairly easily. Increased mobility should be coded where there is mobility

which is unequivocally increased. 1mm mobility is actually quite a lot, this will correspond to very mobile teeth.

No increased mobility	0
Increased mobility but less than 1mm movement horizontally	1
Gross movement, >1mm or vertical/rotational movement	2
Unscorable	9

This should be measured using a finger at one side of the tooth to detect movement while a rigid instrument (e.g. a mirror handle) is applied to the other, the tooth is then very gently wiggled.

If in doubt, score low.

4. Occlusal Examination

This is a very important part of the examination as it relates to the partial dentition and distribution of teeth, which for many older people are of more significance than levels of disease. There are two grids for this examination. One records the presence of spaces and unopposed teeth, the other records the exact pattern of occlusal contacts. This may seem to involve some duplication, but in order to make the examination less prone to error the procedure is best performed in this way.

Spacing

Spacing refers NOT simply to missing teeth, it records spaces as a positive phenomenon. Spaces are always recorded on the chart according to the position of the space, not according to the tooth missing. For example loss of a lower first premolar may cause the second premolar to drift forward and fill the gap, this may then leave a space in the second premolar position. On the chart this would be recorded as a space in the second premolar position, even though it is the first premolar which has been lost. We are interested here in the aesthetic and functional problems of spaces.

A "space" is a gap greater than a half premolar width.

Where there is a space it is coded as either restored or unrestored. Where there is a bridge or where the subject normally wears a partial denture which fills the space it should be recorded as restored. If for example, there is a partial denture but the tooth which filled the gap has broken off and not been replaced then this should he coded as unrestored, because technically (and aesthetically) it is.

The codes for spacing are as follows:

no space	0
space (unfilled)	1
space (restored)	2

Posterior occlusal contacts

This section need only be completed if there are some natural teeth in both arches.

The subject is asked to close their teeth together normally. Occasionally people do bizarre things at this point like stick their mandible forward or laterally into some odd position. If they do this ask them to ,wallow and keep their teeth closed after swallowing. However, hopefully such a request should rarely be neccessary. The premolars and molars are now split into occlusal units, and it is the lower teeth which are used for measurement. An occlusal unit is a single premolar or half a molar (mesial or distal). These are counted back from the first premolar. There are potentially eight occlusal units. Like spacing, the position of an occlusal unit does not depend on which tooth is present, but on the position in which the unit is lying (see diagrams). A contact is recorded as present (1) or absent (0). For a contact to be present it must form an occlusal stop with a natural tooth in the opposing arch, or at least appear to do so. In rare cases pairs of teeth may slide past each other and end up with mesial or distal surfaces in contact, but not forming any sort of stop, these should be coded as no contact (0). If there is obviosly fresh air between the teeth code as no contact, but generally if in doubt score as a contact (note that although it doesn't seem like it, this is theoretically scoring "low" a,, a contact is analogous to "sound" or not diseased). **Note that Fixed bridges should be counted as fixed occlusal units, just like a natural tooth.**

Note that coding takes place from the first premolar backwards as this makes it much easier to keep track of the position.

After the grid is complete a box is also present to code the response to each of the questions:

“Are any anterior teeth in contact?"

IF YES "how many"

There is a single box representing all NATURAL anterior teeth. If the anterior teeth are already in contact it should be coded as yes (1). "How many" can be recorded as anything between 0 and 6 and is based on the estimated number of contacts made by the lower teeth. Where there is believed to be no contact the subject should be asked

to bite edge to edge to see if contact can be obtained, if this is possible the third box should be coded as yes (1). Where there is a deep overbile this may be very difficult to assess accurately so should just be estimated if there is a problem. Again, actual contact is not strictly necessary if the patient can achieve some sort of contact by protrusion of the mandible. A phrase such as "can you bite on your front teeth like this", with the examiner demonstrating incisal contact may be used if there is any problem. If any pair of anterior teeth can contact, it is coded as present.

Two other questions then follow:

“How many natural posterior teeth (upper or lower) have no opposing natural tooth?”

“How many natural posterior teeth (upper or lower) are opposed only by denture?”

These are self explanatory and are easily assessed by visual examination with the teeth together, although where there are partial dentures they will often have to be inserted prior to this part of the examination. This is to identify how many teeth are non-functional.

5. Soft tissue pathology

Examination: A brief visual examination of the lips and perioral tissues should precede intra-oral examination. Most intra-orat areas can be easily visualised during the dental examination, however several areas MUST be visualised specifically. These are: -

1. Floor of mouth. A piece of gauze is used to hold the tongue and it is gently lifted and deflected to right and left.
2. Mucosal surface of lips. The upper and lower lips are gently inverted to visualise.
3. Buccal sulci. The mouth is half closed and the cheeks gently retracted.
4. Soft palate - visualise directly.

Soft tissue lesion(s)

- None
- Angular cheilitis
- Denture stomatitis I
- Denture stomatitis II
- Denture stomatitis III
- Denture hyperplasia

- Ulcer associated with denture trauma

- Other (see below)

More than one code can be recorded as these diseases are not mutually exclusive. The coding is Yes - 1, No - 0.

The three classifications of denture stomatitis are based on a WHO classification.

I patchy or localised redness over denture bearing area

II redness over full denture bearing area

III multiple small nodular or granular lesions covering denture bearing area with associated inflammation

Angular Cheilitis is defined as inflammation with or without cracking localised to one or both commisures. Denture Hyperplasia is a firm enlargement of the vestibular mucosa, clearly related to the flange of a denture. "Ulcer associated with denture trauma" applies to any ulcerated lesion which is believed to be due to trauma alone and not any other pathological process (e.g. malignancy).

Other pathology

Description -

A concise but meaningful description is required, **INCLUDING THE SITE,** eg “soft, non-fluctuant, non-inflamed swelling, 2cm diameter on left anterior floor of mouth”.

Clinical diagnosis -

If the observer is really at a loss to make a diagnosis then this can be left blank, but otherwise a diagnosis should be made, even if rather vague. A list of diagnoses and criteria under the WHO classification will be supplied to ensure a degree of standardisation.

Follow-up required

- referral

- nil

Clearly there is an ethical obligation to ensure that any findings which MAY point to a serious or life threatening condition are appropriately dealt with by the survey physician.

6. Diagnostic criteria for the assessement of dentures

NOTE: Five codes must always be entered, these are the ones relating to the presence or absence of upper and lower partial dentures and upper and lower

complete dentures, as well as the question at the top of column two about previous unworn partial dentures.

Partial dentures

The assessment is fairly straightforward. Questions about usage will be covered in the questionnaire. The denture should only be assessed if it is ever actually worn. It does not have to be in the mouth when you visit provided the subject wears it on some sort of regular basis. The dentist can probe regarding usage. It should not be scored if it resides only in a drawer and is never used.

Does the partial denture replace all missing teeth?

- Yes
- No

If extractions have been undertaken since the denture was constructed, without alteration to the denture, code "no". This question does not mean that the denture has to replace third molars, or even second molars for that matter, but refers to gaps that are unfilled for the reason given above.

Does the denture provide additional posterior function?

- Yes
- No

This should be coded as "yes" if the denture has any contact with an opposing natural posterior tooth or denture.

Kennedy Class

I	(two free end saddles)
II	(one free end saddles)
III	(no free end saddles, one or more posterior teeth replaced)
IV	(Anterior teeth only replaced)

Are any natural anterior teeth missing which are replaced by the denture?

- Yes
- No

Material

- Acrylic only
- Acrylic + metal clasps/rests
- Metal based (cast)

Note that wrought bars are common connectors on lower partial dentures. These are quite different from cast frameworks and consist simply of a metal (stainless steel) connector about 2-3mm x 2mm diameter which links two saddles. There is no retentive mesh framework to engage the acrylic as there is in cast "metal based" dentures which are usually cast out of CoCr. These should be coded as "acrylic only", unless of course there are additional rests or clasps present.

Support

- Tissue
- Tooth only
- Both

Dentures are coded as tooth only where there are **bounded saddles only,** and where these are completely supported by the teeth at either end. Note that sometimes support is provided by a lingual plate or a dental bar, as well as by occlusal rests, and this should be taken into account when choosing the appropriate code.

Retention

- Tissue/friction only
- Clasp
- Other (e.g. special attachments, two-part denture etc.)

Where clasps have fractured or no longer serve any useful purpose "tissue /friction" is the correct option.

Previous history of denture not worn

This question may require probing to get an answer which is correct. Do not be afraid to code as 9, particularly in the edentate. This question is to pick up those who had a denture made which was abandoned because they could not wear it, not because their circumstances changed (e.g. more teeth were lost).

Complete Dentures

The complete dentures themselves are now examined. Each denture or set of dentures will be assessed according to the criteria given below. The dentures to be assessed are the ones that the patient normally wears.

Material (base)

- Acrylic

- Metal
- Vulcanite
- Other

"Metal" refers to a cast metal base

Material (teeth)

- Acrylic
- Porcelain

Porcelain teeth can usually be detected by tapping them with a mirror handle.

Matching set

- **Yes**
- No

This refers to whether the dentures which are normally worn are made to match each other (i.e. they were made as a pair, or one denture was made against an existing opposing denture). A non-matching pair is where a lower from one set is worn against an upper from a different set. Where there is any doubt this question should be scored as yes.

Occlusal wear

- Satisfactory
- Excessive
- Unrecordable

Upper and lower should be scored separately. Excessive wear of the denture teeth is where all occlusal morphology is lost on the posterior teeth, or only the remnants of the fissure pattern remain. Alternatively, wear of the anterior teeth, such that over one third of the crown height is lost is also considered excessive.

Defects

Missing anterior or first premolar tooth	Yes/no
Missing posterior teeth	Yes/no
Fractured or deficient base	Yes/no

This refers to actual physical defects of the substance of the denture, not to any fault which has already been scored.

Tooth Position

Upper anterior tooth position

- Adequate

- Too anterior
- Too posterior

The tips of the central incisors should be 5 -10mm anterior to the centre of the incisive papilla. Greater than this is too anterior, less is too posterior. This will be measured using an Alma Gauge. The gauge should be wiped down with alcohol wipes after use.

Lower posterior

- Adequate
- Lingual
- Unrecordable

The denture should be removed and the tooth position assessed. The lower posterior teeth should be aligned over the ridge without any lingual undercut. The limit for "adequate" is the positioning of the buccal cusp of the lower molar over the lower ridge. Lingual is recorded where tooth position is lingual uni- or bilaterally. Although buccal placement is technically incorrect, the treatment implications are limited. For this reason the tooth position will be recorded as adequate (including buccal) and lingual.

Ridge form

Adequate

Poor

Adequate ridges are where there is a definite bony ridge which should resist lateral and anteroposterior movement of the dentures, but the ridge may be relatively low or irregular. Poor ridges are those which are atrophic, flabby or inverted.

Adaptation (stability)

- Adequate
- Inadequate
- Unrecordable

This is a very difficult one where scoring is highly subjective. The dividing line between what is acceptable and what is not is not clearly defined, and account must be taken of the quality and mobility of the ridges and the denture bearing areas.

Index fingers and thumbs are placed either side of the premolars and rotatory, and lateral forces applied. Where movement over the tissues is greater than considered acceptable, taking into account the denture bearing area, then the adaptation is

considered inadequate. Clearly the denture bearing areas should be examined prior to this examination.

Retention

- Adequate
- Inadequate
- Unrecordable

Upper: Index fingers are carefully placed in the premolar areas, taking care not to stretch the cheek excessively and break the peripheral seal, and gentle vertical downward pressure exerted. Retention is adequate when resistance to removal is felt and when there is audible or tactile evidence of the peripheral seal being broken.

Lower: Index finger and thumb of one hand are used to grip either side of the central incisors and gentle upward force exerted. Retention is adequate when some resistance to removal is felt. No evidence of the seal breaking is required.

Extension

- Adequate / underextended
- Overextended
- Unrecordable

The denture is examined in-situ by gentle manipulation of the cheek-,, direct visual examination of the post dam area. The patient is also asked to protrude the tongue. The denture is scored as overextended where overextension leading to displacement of the denture on examination, or soft tissue damage is present in any area of the periphery. For this purpose the denture periphery can be divided into the following categories (each being "one area"):

Occlusal relationship

- adequate
- inadequate
- unrecordable

Occlusal relationship is recorded by establishing the rest position and then gently supporting the lower denture with the index fingers and asking the patient to close together, where necessary with gentle guidance to ensure that closure is along the retruded arc. The relationship is recorded as inadequate if (a) there is a slide of greater than one quarter cusp length (1 - 1.5mm approx.) into intercuspal position from first contact OR (b) if first contact is uneven, leading to displacement of the dentures on

further closure OR (c) if first contact is clearly uneven between right and left or where all contact is on the anterior teeth, even in the absence of significant displacement.

If an "inadequate" code is recorded the examiner should repeat the examination to verify this.

Free way space

- Satisfactory
- Excessive
- Too little
- Unrecordable

Free way space will be measured with a Willis Gauge. A measurement will be taken with both dentures in place and in intercuspal position, and then a measurement recorded with the lower denture out, and the patient in the rest position. 2-6mm will be considered as normal range, <2mm as too little, and >6mm as excessive.

Appendix 6

List of equipment used

Head Torch ("Sport Man") with spare bulbs and batteries**

CPITN type C probe*

Sickle probe, blunted to 0.25mm at tip**

Size 4 mouth mirror*

Alma Gauge**

Willis Gauge**

Rubber Gloves*

Alcohol wipes

Box of tissues

Sterilising bags

Yellow disposal bags

** Supplied to all examiners

- Some examiners supplied their own, provided that they were of the correct specification. Others were supplied by the survey team.

Appendix 7

Glossary of terms

Achieved sample
The sample that finally took part in the survey.

Acid containing food
Food rich in acids. The foods included in this category are detailed in chapter 3 and include citrus fruits, pickles and carbonated drinks.

Adult Dental Health Survey (ADHS)
National surveys of the dental health and attitudes of United Kingdom adults held in 1978 and 1988, and of adults in England and Wales in 1968 and Scotland in 1972. Most references in this report are to the 1988 survey.

Arch / Dental arch
The curved contour of the dentition or of the residual ridge (which is left after loss of the natural teeth).

Artificial (full coverage) crown
A tooth restoration which is cemented to the tooth and covers all the natural coronal surfaces. It is usually made of metal, porcelain or a combination of both materials.

Attenders (dental attenders)
Participants who stated that they attend the dentist for check-ups, either regularly or occasionally, and not just when they are suffering symptoms. (Compare with *non-attenders*)

Body Mass Index
A measure to indicate weight relative to height. The formula for the calculation is given in section 3.2 of this report.

Bridge
A prosthesis used to replace a tooth or teeth which is cemented on to a natural tooth or teeth nearby and which is not intended for removal by the patient. (Compare with *partial denture).*

Caries
See *dental caries*.

Cervical wear
Wear of the neck of the tooth, where there has been recession of the gums exposing some of the root.

Complete denture
A prosthesis which replaces all of the natural teeth in one jaw. In some cases there may be a few natural roots remaining, but the denture will cover these, so that all of the visible teeth are on the denture. The term *complete dentures* is used where a complete denture is worn in both jaws.

Coronal surfaces
The surfaces of the crown of the tooth.

Crown
The crown is the part of the tooth which, on a natural sound tooth, is covered in dental enamel. See *coronal surfaces* and *artificial crown.*

Dental caries/ dental decay
A disease process that results in the demineralisation of the hard tissues of the tooth by microbial activity.

The terms *caries, dental caries, decay* and *dental decay* are used interchangeably in this report.

Dentate
Having one or more natural teeth. (Compare with *edentate*).

Dentine
The calcified tissue which forms the major part of the tooth. It encloses the dental pulp, but is covered by enamel on the coronal surfaces.

DH
The Department of Health

Diary Sample
The sample for whom a four-day food diary was completed.

Difficulty with household tasks

Participants who reported having difficulty carrying out, without assistance, any of the household tasks listed in question 109 of the dietary survey questionnaire. There were 10 tasks listed, for example getting in and out of bed, getting dressed, using the toilet and making a cup of tea.

DMFT

Abbreviation for *Decayed Missing and Filled Teeth*. This is the sum of all natural permanent teeth in an individual's mouth which are either decayed, missing or filled.

Eating Impact

An effect reported by participants where the condition of their teeth adversely affected their ability to eat. (See also *oral impact*).

Edentate

Having no natural teeth. (Compare with *dentate*).

Enamel

The hard mineralised outer layer covering the *coronal surfaces* of the natural tooth.

Erosion

A form of tooth wear where there is progressive loss of dental hard tissues by a chemical process that does not involve bacteria (See also *wear/tooth wear*)

Extrinsic sugars

Any sugar which is not located within the cellular structure of a food. This includes table sugar and sugar in confectionery and honey, as well as sugars occurring naturally in milk and milk products.
(Compare with *intrinsic sugars*).

Free-end saddle

A part of a partial denture which carries artificial teeth, but which has natural teeth at one end only. A denture which has a free-end saddle on both sides (right and left), with no teeth behind the denture to provide support and stability, is defined as a *Kennedy Class I* partial denture (see chapter 5).

Free living sample

Participants who lived in their own home and not in an institution, such as a nursing home or old peoples home (compare with *institution sample*).

Functional surfaces

The surfaces of a tooth which are directly in contact with the teeth of the opposing jaw.

Furcation involvement

Defect in the bone between the roots of a tooth which has more than one root (such as a molar). This bony defect results from the resorbtion of bone and loss of periodontal attachment between the tooth and the bone, usually due to gum disease.

Gross decay

Decay of the tooth which has led to breakdown of most of the tooth surface with involvement of the dental pulp (see also *dental caries*).

Head of household

This will be:

- the husband, in a household containing only a husband, wife and children under age 16 years (and boarders).
- the male partner in a cohabiting household.
- the owner or the person legally responsible for the accommodation when the household comprises other relatives or unrelated persons or both.

In cases where more than one person has equal claim. the following rules apply:
(i) where they are of the same sex. The oldest is always the head of household
(ii) where they are of different sex the male is always the head of household.

Housebound

Participants who answered, in response to question 79 in the dietary questionnaire, that they never left their place of residence, are reported as *housebound*.

Household

A single person or group of people who have the accommodation as their only or main residence and who either share one main meal a day or share the living accommodation. (See E McCrossan *A Handbook for interviewers.* HMSO:1985.)

Institution sample
The separate sample of older adults who lived in institutional accomodation with full time carers (Compare with *free living sample*).

Incisors
The front two teeth in each jaw are known as central incisors and the other incisors are referred to as lateral incisors.

Intrinsic sugars
Any sugar which is contained naturally within the cell structure of a food.
(Compare with *extrinsic sugars*).

Issued sample
The sample who were contacted and invited to take place in the survey.

Limited mobility within the home
Participants who scored 9 or more when the codes of responses to question 82 in the dietary questionnaire were summed were considered to have limited mobility within the home. This question related to the ability to climb stairs, move around indoors and carry a load.

Loss of attachment
(See periodontal attachment).

MAFF
Ministry of Agriculture, Fisheries and Food.

Manual social class/manual groups
Subjects living in households where the head of household was, or had been, in an occupation ascribed to *Social Classes* III *manual,* IV & V

Missing teeth
Teeth which were not present in the mouth at the time of examination. They are assumed to have been *extracted*.

Molar
Large, grinding tooth situated at the back of the mouth. There are up to six molars in each jaw.

NDNS
The National Diet and Nutrition Survey.

NHS
National Health Service.

Non-attenders (dental non-attenders)
Participants who stated that they attend a dentist only when they have symptoms.
(Compare with attenders).

Non-manual social classes
Subjects living in households where the head of household was or had been in an occupation ascribed to *Social Classes* I, II and III non-manual.

Non-milk extrinsic sugars (NMES)
Extrinsic sugars except those in milk and milk products.

Occluding Pairs (OPs)
Opposing natural teeth which meet when the jaws are closed following the removal of any dentures.
(Compare with *posterior occluding pairs*, [*POPS*])

Oral Impact
An effect reported by participants where the condition of their teeth adversely affected their ability to perform normal day to day activities.
(Compare with *eating impact*).

Partial dentures (removable partial dentures)
A prosthesis which replaces only some of the natural teeth in one jaw, and which can be removed at any time by the participant.
(Compare with *bridge* and *complete denture*).

Periodontal attachment
The fibrous connection between the tooth root and the supporting bone and gum.

Where gum (periodontal) disease has occurred some of this attachment between the tooth and supporting bone is lost. This *loss of attachment* begins around the neck of the tooth where the tooth projects into the mouth. Loss of attachment below the level

of the gum margin is known as a *periodontal pocket*. The loss of attachment which has taken place and the depth of the periodontal pocket can be gauged by using a graduated blunt probe held against the root of the tooth and gently placed under the gum as far as the base of the pocket.

Periodontal disease

A disease of the tissues which invest and support the teeth (gum disease).

Periodontal pocket

(See *periodontal attachment*)

Physically active

Participants who responded that they took part in at least one of the physical activities listed in question 85 of the dietary questionnaire at least once a fortnight or more frequently were reported as *physically active*. These activities were riding a bicycle, keep fit exercises, physiotherapy exercises, dancing, swimming, running or jogging, badminton, tennis, golf, yoga, bowls or rambling.

Plaque

The sticky white bacterial material which collects around the teeth and which is implicated in both major dental diseases (dental caries and periodontal disease).

Posterior Occluding Pairs (POPs)

Occluding pairs formed by the premolar and molar teeth. For the purposes of measurement molar teeth were split into two possible POPs because of their larger size.

Premolar

The permanent tooth situated between the canine and molar teeth.

Primary (coronal/root) caries

Decay affecting a previously unfilled and healthy tooth surface. The terms *primary caries* and *primary decay* are used interchangeably in this report. (Compare with *secondary caries*)

Pulp (dental)

Soft vascular tissue which fills the pulp chamber and the root canals of a tooth. It is the innermost part of the tooth and consists of connective tissue, blood vessels and nerves.

Region (Based on the Standard regions)

These are grouped as follows:

Scotland and the North

Scotland

Northern and Yorkshire

North West

Central, South-West and Wales

East Midlands,

West Midlands

East Anglia

South West

Wales

London and the South-East

London

South East

The regions of England are as constituted after local government reorganisation on 1 April 1974.

Registered disabled

Participants who said they were registered as disabled in response to a question in the dietary questionnaire.

Root

The part of the tooth not covered by enamel and which, in health, is below the level of the gum. It may become exposed with increasing age due to recession of the gums.

Root caries/root decay

Decay occurring on the roots of the teeth where there has been loss of periodontal attachment. (See also *dental caries*)

Root Caries Index (RCI and RCI(d))

A measurement of the amount of root decay in the mouth, taking into account the number of teeth which have surfaces which are exposed and therefore vulnerable. RCI includes decay and fillings, RCI(d) reports only decayed roots.

Secondary caries/secondary decay

Dental decay occurring around an existing restoration. In this case the restoration would be deemed to be unsound. (Compare with unsound restoration and primary decay).

Sugar rich food

Foods with high levels of sugars. These are listed in chapter 3.

Social Class

Based on the Registrar General's Standard Occu*pational Classification, Vol*ume 3 HMSO (1991). Social class was ascribed on ***the*** basis of the occupation of the head of household. The classification used in the tables is as follows:

Descriptive definition Social class

Non-manual	
Professional and intermediate	I and II
Skilled occupations, non manual	III non-manual
Manual	
Skilled occupations, manual	III manual
Partly skilled and unskilled occupations	IV and V

Social class was not determined for households where the head had never worked, was a full-time student, was in the Armed Forces or whose occupation was inadequately described. If the head of household was male, social class was determined on the basis of their present, main occupation or. if they were currently unemployed, on the basis of the last occupation and if they were waiting to take up a new job, on the basis of that new occupation. If the head of household was female, social class was determined on the basis of what the participant regarded as her ‘main' life occupation.

Tooth mobility

Looseness of a tooth in the socket. This occurs most often where there has been loss of periodontal attachment and supporting bone due to periodontal disease

Tissue supported partial denture

A partial denture which rests only on the soft tissues of the mouth, so the natural teeth share none of the load of the partial dentures during function.

Unsound restoration

A filling or restoration which either has decay around the margin, or which has been lost, broken or damaged and is considered to require some treatment. Fillings and artificial crowns are both considered here as forms of restoration.

Unsound tooth/root/crown

A tooth, root or crown which has decay or an unsound restoration. It is usually considered to require treatment.

Vulnerable roots

Any tooth which has some portion of the root exposed to the oral environment as a result of recession of the gums, and is therefore potentially susceptible to root caries.

Wear/tooth wear

Loss of tooth substance due to a non-bacterial cause. This may take the form of attrition (where the teeth in opposing arches have worn away each other), abrasion (where the teeth have been worn away mechanically by a foreign body, such as a toothbrush) or erosion (where there has been damage to the teeth from acids, usually dietary or gastric, not produced by bacteria).

Appendix 8

Data description

The data for each subject is in the form of a rectangular file. Each subject record is 39 rows long by up to 80 columns wide.

The following pages detail the content of each row and column within that row, along with the value labels for these data.

This appendix should be read in conjunction with a copy of the questionnaire used for the study (Appendix 9)

Row 1

COLUMNS	VARIABLE
1-2	ROW NUMBER
3-8	SERIAL ‘SUBJECT CODE’
9-10	AREA ‘AREA CODE’
11	GENDER ‘GENDER’
12-14	AGE ‘AGE’
15-20	DATE ‘6 DIGIT DATE’
21-24	TIMEST ‘TIME STARTED’
25-30	INTERV ‘INTERVIWER CODE’
31-32	EXAMR ‘EXAMINER CODE’
33	OUTCOME ‘EXAMINATION COMPLETED’
34	STAT ‘STATUS’
41	NATSTAT ‘ANY NATURAL TEETH’
42	DENSTAT ‘ANY DENTURES’
43	DEN2STAT ‘POSITION OF DENTURES’
44	PDENSTAT ‘POSITION OF PARTIAL DENTURES’
45-48	TIMINT ‘TIME AT START OF INTERVIEW’
49	SCREEN1 ‘STATUS SCREEN’
50	SAT1 ‘SATISFACTION – TOOTH SIZE’
51	SAT2 ‘SATISFACTION – POSITION/SHAPE’
52	SAT3 ‘SATISFACTION – TOOTH COLOUR’
53	DEN1U ‘AGE CU’
54-55	DEN1L ‘AGE CL’
56-57	DEN2U ‘TIME EDENTULOUS UPPER’
58-59	DEN2L ‘TIME EDENTULOUS LOWER’
60-61	DEN3U ‘NIGHT WEARING CU’
62	DEN3L ‘NIGHT WEARING CL’
63	DEN4U ‘DAY WEARING CU’
64	DEN4L ‘DAY WEARING CL’
65	DEN5U ‘SOCIAL WEARING CU’
66	DEN5L ‘SOCIAL WEARING CL’
67	DEN6U ‘EAT WEARING CU’
68	DEN6L ‘EAT WEARING CL’
69	DEN7 ‘SATIS COMFORT OF DENTURES’
70	DEN8 ‘SATIS SHAPE/SIZE DENTURES’
71	DEN9 ‘SATIS COLOUR DENTURES’
72	DEN10 ‘FIXATIVE’
73	DEN11 ‘DENTURES FULL MOUTH’
74	DEN12 ‘DENTURES SLOW EATING’
75	DEN13 ‘DENTURES – FLAVOUR CHANGED’
76	DEN14 ‘DENTURES – SPEECH CHANGED’
77	DEN15 ‘DENTURES – UNABLE TO EAT FOOD OFFERED’
78	DEN16 ‘DENTURES – SPEECH ALTERED DUE TO MOVING’
79	DEN17 ‘DENTURES – DROP SPEAK’

Row 2

COLUMNS	VARIABLE
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	DEN18 'DENTURES - DROP SPEAK'
12	DEN19 'DENTURES - DROP OPEN'
13	DEN20 'DENTURES - EMBARASSED'
14	screening question
15-16	PD1U 'AGE PART UPPER'
17-18	PD1L 'AGE PART LOWER'
19	PD2U 'PART UPPER NIGHT'
20	PD2L 'PART LOWER NIGHT'
21	PD3U 'PART UPPER WEAR'
22	PD3L 'PART LOWER WEAR'
23	PD4U 'PART UPPER SOCIAL'
24	PD4L 'PART LOWER SOCIAL'
25	PD5U 'PART UPPER EATING'
26	PD5L 'PART LOWER EATING'
27	PD6 'PARTIAL IMPROVES APPEARANCE'
28	PD7 'PARTIAL HELPS EAT'
29	PD8 'PARTIAL RECOMMENDED'
30	PD9 'PARTIAL COMFORT'
31	PD10 'PARTIAL SHAPE'
32	PD11 'PARTIAL COLOUR'
33	PD12 'PARTIAL AVOID SHOWING'
34	PD13 'PARTIAL AVOID FREQ'
35	screening question
36	CLN1 'CLEAN OWN TEETH'
37-38	CLN2 'WHY NOT CLEAN - OPEN'
39	Screening question
40	CLNFQ 'FREQUENCY OF CLEANING - NATURAL'
41	Screening question
42	CLND1 'CLEAN OWN DENTURES'
43	CLNDFQ 'FREQUENCY OF CLEANING - DENTURES'
44	Screening question
45	PRB1 'SENSITIVITY - PRESENT'
46	PRB1FQ 'SENSITIVITY - OFTEN'
47	PRB2 'MILD DISCOMFORT OF TEETH - PRESENT'
48	PRB2FQ 'MILD DISCOMFORT OF TEETH - FREQUENCY'
49	PRB3 'SEVERE DISCOMFORT - PRESENT'
50	PRB3FQ 'SEVERE DISCOMFORT - FREQUENCY'
51	PRB4 'FOOD STUCK'
52	PRB4FQ 'FOOD STUCK - DISCOMFORT'

Row 3

COLUMNS	VARIABLE
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	PRB5 'JOINT PAIN'
12	PRB5FQ 'JOINT PAIN - DISCOMFORT'
13	PRB5AC 'JOINT PAIN - ACTION'
14	PRB6 'CLICKING'
15	PRB6FQ 'CLICKING - DISCOMFORT'
16	PRB6AC 'CLICKING - ACTION'
17	PRB7 'LIMITATION'
18	PRB7FQ 'LIMITATION - DISCOMFORT'
19	PRB7AC 'LIMITATION - ACTION'
20	PRB8 'LOOSE DENTURE'
21	PRB8FQ 'LOOSE DENTURE - DISCOMFORT'
22	PRB8AC 'LOOSE DENTURE - ACTION'
23	PRB9 'LOOSE TOOTH'
24	PRB9FQ 'LOOSE TOOTH - DISCOMFORT'
25	PRB9AC 'LOOSE TOOTH - ACTION'
26	PRB10 'BROKEN TOOTH'
27	PRB10FQ 'BROKEN TOOTH - DISCOMFORT'
28	PRB10AC 'BROKEN TOOTH - ACTION'
29	PRB11 'DRY MOUTH'
30	PRB11FQ 'DRY MOUTH - DISCOMFORT'
31	PRB11AC 'DRY MOUTH - ACTION'
32	PRB12 'BURNING MOUTH'
33	PRB12FQ 'BURNING MOUTH - DISCOMFORT'
34	PRB12AC 'BURNING MOUTH - ACTION'
35	PRB13 'ULCERS/SORE SPOTS'
36	PRB13FQ 'ULCERS/SORE SPOTS - DISCOMFORT'
37	PRB13AC 'ULCERS/SORE SPOTS - ACTION'
38	PRB14 'SORE MOUTH'
39	PRB14FQ 'SORE MOUTH - DISCOMFORT'
40	PRB14AC 'SORE MOUTH - ACTION'
41	PRB15 'BLEEDING GUMS'
42	PRB15FQ 'BLEEDING GUMS - DISCOMFORT'
43	PRB15AC 'BLEEDING GUMS - ACTION'
44	PRB16 'DRY LIPS'
45	PRB16FQ 'DRY LIPS - DISCOMFORT'
46	PRB16AC 'DRY LIPS - ACTION'
47	DRY 'EXPERIENCE OF DRY MOUTH'
48	DRYEAT 'DRY MOUTH EATING MEAL'
49	DRYOTH 'DRY MOUTH AT OTHER TIMES'
50	DRYNHT 'DRY MOUTH AT NIGHT'
51	DRYCH 'DRY MOUTH - DIFFICULTY CHEWING'
52	DRYSW 'DRY MOUTH - DIFFICULTY SWALLOWING'
53	DRYMD 'DRY MOUTH - DIFFICULTY WITH MEDICATION'

54	DRYGUM 'DRY MOUTH - CHEW GUM'
55	DRYSWT 'DRY MOUTH - SUCK SWEETS'
56	DRYWAT 'DRY MOUTH - SIP LIQUID'
57	DRYMED 'DRY MOUTH - MEDICATION OR PRODUCT'
58	Screening question
59	DRYDEN 'DRY MOUTH - DENTURE PROBLEMS'
60	BRTH 'BAD BREATH'
61	BRTH2 'BAD BREATH - DIFFICULTY'
62	DRYEYE 'DRY EYES'
63	MEDUL 'STOMACH ULCER'
64	MEDDUL 'DUODENAL ULCER'
65	MEDGAS 'GASTRITIS'
66	MEDACD 'INDIGESTION'
67	MEDOTH 'OTHER STOMACH PROBLEM'

Row 4

COLUMNS	VARIABLE
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	MP1A 'EATING'
12	IMP1B 'EATING - PART OR ALL'
13	IMP1C 'EATING - FREQUENCY REG'
14	IMP1D 'EATING - FREQUENCY PART'
15	IMP1E 'EATING - IMPACT'
16	IMP2A 'SPEAKING'
17	IMP2B 'SPEAKING- PART OR ALL'
18	IMP2C 'SPEAKING- FREQUENCY REG'
19	IMP2D 'SPEAKING- FREQUENCY PART'
20	IMP2E 'SPEAKING- IMPACT'
21	IMP3A 'CLEANING'
22	IMP3B 'CLEANING- PART OR ALL'
23	IMP3C 'CLEANING- FREQUENCY REG'
24	IMP3D 'CLEANING- FREQUENCY PART'
25	IMP3E 'CLEANING- IMPACT'
26	IMP4A 'PHYSICAL ACTIVITIES'
27	IMP4B 'PHYSICAL ACTIVITIES- PART OR ALL'
28	IMP4C 'PHYSICAL ACTIVITIES- FREQUENCY REG'
29	IMP4D 'PHYSICAL ACTIVITIES- FREQUENCY PART'
30	IMP4E 'PHYSICAL ACTIVITIES- IMPACT'
31	IMP5A 'GOING OUT'
32	IMP5B 'GOING OUT- PART OR ALL'
33	IMP5C 'GOING OUT- FREQUENCY REG'
34	IMP5D 'GOING OUT- FREQUENCY PART'
35	IMP5E 'GOING OUT- IMPACT'
36	IMP6A 'RELAXING'
37	IMP6B 'RELAXING- PART OR ALL'
38	IMP6C 'RELAXING- FREQUENCY REG'
39	IMP6D 'RELAXING- FREQUENCY PART'
40	IMP6E 'RELAXING- IMPACT'
41	IMP7A 'SLEEPING'
42	IMP7B 'SLEEPING- PART OR ALL'
43	IMP7C 'SLEEPING- FREQUENCY REG'
44	IMP7D 'SLEEPING- FREQUENCY PART'
45	IMP7E 'SLEEPING- IMPACT'
46	IMPMA 'MOOD'
47	IMPMB 'MOOD- PART OR ALL'
48	IMPMC 'MOOD- FREQUENCY REG'
49	IMPMD 'MOOD- FREQUENCY PART'
50	IMPME 'MOOD- IMPACT'
51	IMPSA 'ENJOYMENT OF SOCIAL ACTIVITIES'
52	IMPSB 'ENJOYMENT OF SOCIAL ACTIVITIES- PART OR

	ALL'
53	IMPSC 'ENJOYMENT OF SOCIAL ACTIVITIES- FREQUENCY REG'
54	IMPSD 'ENJOYMENT OF SOCIAL ACTIVITIES- FREQUENCY PART'
55	IMPSE 'ENJOYMENT OF SOCIAL ACTIVITIES- IMPACT'
56	IMPEA 'EMBARRASSMENT'
57	IMPEB ‘EMBARASSMENT AMOUNT’
58	EAT1 'BITING'
59	EAT2 'CHEWING'
60	EAT3 'SWALLOWING'
61	FD1 'SLICED BREAD'
62	FD2 'CRUSTY BREAD'
63	FD3 'TOAST'
64	FD4 'CHEESE'
65	FD5 'TOMATOES'
66	FD6 'CARROTS'
67	FD7 'ROAST POTATOES'
68	FD8 'GREEN VEG'
69	FD9 'LETTUCE'
70	FD10 'SLICED COOKED MEATS'
71	FD11 'WELL DONE STEAK'
72	FD12 'APPLES'
73	FD13 'ORANGES'
74	FD14 'NUTS'
75	FD15 'CRISPS'
76	FD16 'CHOCOLATES'
77	EATSUM 'SOME FOODS THAT CANNOT BE EATEN AT ALL'
78	EATSOFT ‘SOFT FOODS ONLY’

Row 5

COLUMNS	VARIABLE
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	
12	ATTDEN 'EDENTULOUS - ATTENDANCE WHEN HAD TEETH'
13	ATTGEN 'ALL SUBJECTS - ATTENDENCE NOW'
14	ATTLST1 'ALL SUBJECTS - LAST VISIT'
15	ATTLST2 'ALL SUBJECTS - LAST VISIT WITH TROUBLE'
16-17	ATTLST3 'WHAT TROUBLE'
18	ATTSCN 'DENTIST IN LAST 5 YEARS'
19	ATTAPP 'PROBLEMS ARRANGING AN APPOINTMENT'
20	ATTDIS 'DISTANCE TO TRAVEL'
21	ATTTPT 'TYPE OF TRANSPORT'
22	ATTJNY 'EASE OF JOURNEY'
23	ATTPAY 'PAYMENT'
24	ATTRX1 'NEED TREATMENT'
25-26	ATTRX2 'TYPE OF TREATMENT'
27	ATTRX3 'TREATMENT – ANY ARRANGEMENTS'
28-31	TIMFIN 'TIME INTERVIEW FINISHED'

Data relating to the state of the teeth

Data from rows 6 to 38 of each case will only be completed if the participant was dentate. For edentate participants there will be no data entered. For rows 32-34 and 36-38 almost all of the data will be missing if the participant's medical history ruled out the possibility of periodontal examination. In such cases only some data in row 38 will remain.

Row 6

Each column refers to the condition of the distal coronal surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 8
12	Upper right 7
13	Upper right 6
14	Upper right 5
15	Upper right 4
16	Upper right 3
17	Upper right 2
18	Upper right 1
19	Upper left 1
20	Upper left 2
21	Upper left 3
22	Upper left 4
23	Upper left 5
24	Upper left 6
25	Upper left 7
26	Upper left 8

Row 7

Each column refers to the condition of the occlusal/incisal coronal surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 8
12	Upper right 7
13	Upper right 6
14	Upper right 5
15	Upper right 4
16	Upper right 3
17	Upper right 2
18	Upper right 1
19	Upper left 1
20	Upper left 2
21	Upper left 3
22	Upper left 4
23	Upper left 5
24	Upper left 6
25	Upper left 7
26	Upper left 8

Row 8

Each column refers to the condition of the mesial coronal surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 8
12	Upper right 7
13	Upper right 6
14	Upper right 5
15	Upper right 4
16	Upper right 3
17	Upper right 2
18	Upper right 1
19	Upper left 1
20	Upper left 2
21	Upper left 3
22	Upper left 4
23	Upper left 5
24	Upper left 6
25	Upper left 7
26	Upper left 8

Row 9

Each column refers to the condition of the buccal coronal surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 8
12	Upper right 7
13	Upper right 6
14	Upper right 5
15	Upper right 4
16	Upper right 3
17	Upper right 2
18	Upper right 1
19	Upper left 1
20	Upper left 2
21	Upper left 3
22	Upper left 4
23	Upper left 5
24	Upper left 6
25	Upper left 7
26	Upper left 8

Row 10

Each column refers to the condition of the lingual coronal surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 8
12	Upper right 7
13	Upper right 6
14	Upper right 5
15	Upper right 4
16	Upper right 3
17	Upper right 2
18	Upper right 1
19	Upper left 1
20	Upper left 2
21	Upper left 3
22	Upper left 4
23	Upper left 5
24	Upper left 6
25	Upper left 7
26	Upper left 8

Row 11

Each column refers to the condition of the distal root surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 8
12	Upper right 7
13	Upper right 6
14	Upper right 5
15	Upper right 4
16	Upper right 3
17	Upper right 2
18	Upper right 1
19	Upper left 1
20	Upper left 2
21	Upper left 3
22	Upper left 4
23	Upper left 5
24	Upper left 6
25	Upper left 7
26	Upper left 8

Row 12

Each column refers to the condition of the mesial root surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 8
12	Upper right 7
13	Upper right 6
14	Upper right 5
15	Upper right 4
16	Upper right 3
17	Upper right 2
18	Upper right 1
19	Upper left 1
20	Upper left 2
21	Upper left 3
22	Upper left 4
23	Upper left 5
24	Upper left 6
25	Upper left 7
26	Upper left 8

Row 13

Each column refers to the condition of the buccal root surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 8
12	Upper right 7
13	Upper right 6
14	Upper right 5
15	Upper right 4
16	Upper right 3
17	Upper right 2
18	Upper right 1
19	Upper left 1
20	Upper left 2
21	Upper left 3
22	Upper left 4
23	Upper left 5
24	Upper left 6
25	Upper left 7
26	Upper left 8

Row 14

Each column refers to the condition of the lingual root surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 8
12	Upper right 7
13	Upper right 6
14	Upper right 5
15	Upper right 4
16	Upper right 3
17	Upper right 2
18	Upper right 1
19	Upper left 1
20	Upper left 2
21	Upper left 3
22	Upper left 4
23	Upper left 5
24	Upper left 6
25	Upper left 7
26	Upper left 8

Row 15

Each column refers to the condition of the distal coronal surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 8
12	Lower right 7
13	Lower right 6
14	Lower right 5
15	Lower right 4
16	Lower right 3
17	Lower right 2
18	Lower right 1
19	Lower left 1
20	Lower left 2
21	Lower left 3
22	Lower left 4
23	Lower left 5
24	Lower left 6
25	Lower left 7
26	Lower left 8

Row 16

Each column refers to the condition of the occlusal/incisal coronal surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
11	Lower right 8
12	Lower right 7
13	Lower right 6
14	Lower right 5
15	Lower right 4
16	Lower right 3
17	Lower right 2
18	Lower right 1
19	Lower left 1
20	Lower left 2
21	Lower left 3
22	Lower left 4
23	Lower left 5
24	Lower left 6
25	Lower left 7
26	Lower left 8

Row 17

Each column refers to the condition of the mesial coronal surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 8
12	Lower right 7
13	Lower right 6
14	Lower right 5
15	Lower right 4
16	Lower right 3
17	Lower right 2
18	Lower right 1
19	Lower left 1
20	Lower left 2
21	Lower left 3
22	Lower left 4
23	Lower left 5
24	Lower left 6
25	Lower left 7
26	Lower left 8

Row 18

Each column refers to the condition of the buccal coronal surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 8
12	Lower right 7
13	Lower right 6
14	Lower right 5
15	Lower right 4
16	Lower right 3
17	Lower right 2
18	Lower right 1
19	Lower left 1
20	Lower left 2
21	Lower left 3
22	Lower left 4
23	Lower left 5
24	Lower left 6
25	Lower left 7
26	Lower left 8

Row 19

Each column refers to the condition of the lingual coronal surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 8
12	Lower right 7
13	Lower right 6
14	Lower right 5
15	Lower right 4
16	Lower right 3
17	Lower right 2
18	Lower right 1
19	Lower left 1
20	Lower left 2
21	Lower left 3
22	Lower left 4
23	Lower left 5
24	Lower left 6
25	Lower left 7
26	Lower left 8

Row 20

Each column refers to the condition of the distal root surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 8
12	Lower right 7
13	Lower right 6
14	Lower right 5
15	Lower right 4
16	Lower right 3
17	Lower right 2
18	Lower right 1
19	Lower left 1
20	Lower left 2
21	Lower left 3
22	Lower left 4
23	Lower left 5
24	Lower left 6
25	Lower left 7
26	Lower left 8

Row 21

Each column refers to the condition of the mesial root surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 8
12	Lower right 7
13	Lower right 6
14	Lower right 5
15	Lower right 4
16	Lower right 3
17	Lower right 2
18	Lower right 1
19	Lower left 1
20	Lower left 2
21	Lower left 3
22	Lower left 4
23	Lower left 5
24	Lower left 6
25	Lower left 7
26	Lower left 8

Row 22

Each column refers to the condition of the buccal root surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 8
12	Lower right 7
13	Lower right 6
14	Lower right 5
15	Lower right 4
16	Lower right 3
17	Lower right 2
18	Lower right 1
19	Lower left 1
20	Lower left 2
21	Lower left 3
22	Lower left 4
23	Lower left 5
24	Lower left 6
25	Lower left 7
26	Lower left 8

Row 23

Each column refers to the condition of the lingual root surface of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 8
12	Lower right 7
13	Lower right 6
14	Lower right 5
15	Lower right 4
16	Lower right 3
17	Lower right 2
18	Lower right 1
19	Lower left 1
20	Lower left 2
21	Lower left 3
22	Lower left 4
23	Lower left 5
24	Lower left 6
25	Lower left 7
26	Lower left 8

Row 24

Each column refers to the degree of coronal wear on the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 8
12	Upper right 7
13	Upper right 6
14	Upper right 5
15	Upper right 4
16	Upper right 3
17	Upper right 2
18	Upper right 1
19	Upper left 1
20	Upper left 2
21	Upper left 3
22	Upper left 4
23	Upper left 5
24	Upper left 6
25	Upper left 7
26	Upper left 8

Row 25

Each column refers to the degree of cervical wear on the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 8
12	Upper right 7
13	Upper right 6
14	Upper right 5
15	Upper right 4
16	Upper right 3
17	Upper right 2
18	Upper right 1
19	Upper left 1
20	Upper left 2
21	Upper left 3
22	Upper left 4
23	Upper left 5
24	Upper left 6
25	Upper left 7
26	Upper left 8

Row 26

Each column refers to the degree of coronal wear on the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 8
12	Lower right 7
13	Lower right 6
14	Lower right 5
15	Lower right 4
16	Lower right 3
17	Lower right 2
18	Lower right 1
19	Lower left 1
20	Lower left 2
21	Lower left 3
22	Lower left 4
23	Lower left 5
24	Lower left 6
25	Lower left 7
26	Lower left 8

Row 27

Each column refers to the degree of cervical wear on the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 8
12	Lower right 7
13	Lower right 6
14	Lower right 5
15	Lower right 4
16	Lower right 3
17	Lower right 2
18	Lower right 1
19	Lower left 1
20	Lower left 2
21	Lower left 3
22	Lower left 4
23	Lower left 5
24	Lower left 6
25	Lower left 7
26	Lower left 8

Row 28

Each column refers to the presence or absence of spacing at the site of the ……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 7
12	Upper right 6
13	Upper right 5
14	Upper right 4
15	Upper right 3
16	Upper right 2
17	Upper right 1
18	Upper left 1
19	Upper left 2
20	Upper left 3
21	Upper left 4
22	Upper left 5
23	Upper left 6
24	Upper left 7

Row 29

Each column refers to the presence or absence of spacing at the site of the ……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 7
12	Lower right 6
13	Lower right 5
14	Lower right 4
15	Lower right 3
16	Lower right 2
17	Lower right 1
18	Lower left 1
19	Lower left 2
20	Lower left 3
21	Lower left 4
22	Lower left 5
23	Lower left 6
24	Lower left 7

Row 30

Each column refers to whether or not there is an opposing natural tooth contacting with the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 8 distal
12	Lower right 8 mesial
13	Lower right 7 distal
14	Lower right 7 mesial
15	Lower right 6 distal
16	Lower right 6 mesial
17	Lower right 5
18	Lower right 4
19	Lower left 4
20	Lower left 5
21	Lower left 6 mesial
22	Lower left 6 distal
23	Lower left 7 mesial
24	Lower left 7 distal
25	Lower left 8 mesial
26	Lower left 8 distal
and then further data codes refer to…..	
27	Whether there is any contact of anterior teeth
28	The number of lower teeth contacting (NUMERIC VARIABLE)
29	If there is no anterior contact, whether contact can be achieved with mandibular protrusion
30	Number of natural posterior teeth with no opposing natural contact (NUMERIC VARIABLE)
31	Number of natural posterior teeth contacted only by a denture (NUMERIC VARIABLE)

Row 31

Each column refers to the degree of mobility of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 8
12	Upper right 7
13	Upper right 6
14	Upper right 5
15	Upper right 4
16	Upper right 3
17	Upper right 2
18	Upper right 1
19	Upper left 1
20	Upper left 2
21	Upper left 3
22	Upper left 4
23	Upper left 5
24	Upper left 6
25	Upper left 7
26	Upper left 8

Row 32

The data in each column refer to the pocket depth (coded) at each site examined. The sites are ……

Column

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 8 distal
12	Upper right 8 mesial
13	Upper right 7 distal
14	Upper right 7 mesial
15	Upper right 6 distal
16	Upper right 6 mesial
17	Upper right 5 distal
18	Upper right 5 mesial
19	Upper right 4 distal
20	Upper right 4 mesial
21	Upper right 3 distal
22	Upper right 3 mesial
23	Upper right 2 distal
24	Upper right 2 mesial
25	Upper right 1 distal
26	Upper right 1 mesial
27	Upper left 1 mesial
28	Upper left 1 distal
29	Upper left 2 mesial
30	Upper left 2 distal
31	Upper left 3 mesial
32	Upper left 3 distal
33	Upper left 4 mesial
34	Upper left 4 distal
35	Upper left 5 mesial
36	Upper left 5 distal
37	Upper left 6 mesial
38	Upper left 6 distal
39	Upper left 7 mesial
40	Upper left 7 distal
41	Upper left 8 mesial
42	Upper left 8 distal

Row 33

The data in each column refer to the loss of attachment (coded) at a each site examined.

The sites are ……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 8 distal
12	Upper right 8 mesial
13	Upper right 7 distal
14	Upper right 7 mesial
15	Upper right 6 distal
16	Upper right 6 mesial
17	Upper right 5 distal
18	Upper right 5 mesial
19	Upper right 4 distal
20	Upper right 4 mesial
21	Upper right 3 distal
22	Upper right 3 mesial
23	Upper right 2 distal
24	Upper right 2 mesial
25	Upper right 1 distal
26	Upper right 1 mesial
27	Upper left 1 mesial
28	Upper left 1 distal
29	Upper left 2 mesial
30	Upper left 2 distal
31	Upper left 3 mesial
32	Upper left 3 distal
33	Upper left 4 mesial
34	Upper left 4 distal
35	Upper left 5 mesial
36	Upper left 5 distal
37	Upper left 6 mesial
38	Upper left 6 distal
39	Upper left 7 mesial
40	Upper left 7 distal
41	Upper left 8 mesial
42	Upper left 8 distal

Row 34

Each column refers to the amount of plaque (coded) on the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Upper right 8
12	Upper right 7
13	Upper right 6
14	Upper right 5
15	Upper right 4
16	Upper right 3
17	Upper right 2
18	Upper right 1
19	Upper left 1
20	Upper left 2
21	Upper left 3
22	Upper left 4
23	Upper left 5
24	Upper left 6
25	Upper left 7
26	Upper left 8
…and then the degree to which the furcation region of the following teeth was involved by periodontal disease in columns …..	
27	Upper right 8
28	Upper right 7
29	Upper right 6
30	Upper right 6
31	Upper right 7
32	Upper right 8

Row 35

Each column refers to the amount of mobility (coded) of the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 8
12	Lower right 7
13	Lower right 6
14	Lower right 5
15	Lower right 4
16	Lower right 3
17	Lower right 2
18	Lower right 1
19	Lower left 1
20	Lower left 2
21	Lower left 3
22	Lower left 4
23	Lower left 5
24	Lower left 6
25	Lower left 7
26	Lower left 8

Row 36

The data in each column refer to the pocket depth (coded) at a each site examined.

The sites are ……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 8 distal
12	Lower right 8 mesial
13	Lower right 7 distal
14	Lower right 7 mesial
15	Lower right 6 distal
16	Lower right 6 mesial
17	Lower right 5 distal
18	Lower right 5 mesial
19	Lower right 4 distal
20	Lower right 4 mesial
21	Lower right 3 distal
22	Lower right 3 mesial
23	Lower right 2 distal
24	Lower right 2 mesial
25	Lower right 1 distal
26	Lower right 1 mesial
27	Lower left 1 mesial
28	Lower left 1 distal
29	Lower left 2 mesial
30	Lower left 2 distal
31	Lower left 3 mesial
32	Lower left 3 distal
33	Lower left 4 mesial
34	Lower left 4 distal
35	Lower left 5 mesial
36	Lower left 5 distal
37	Lower left 6 mesial
38	Lower left 6 distal
39	Lower left 7 mesial
40	Lower left 7 distal
41	Lower left 8 mesial
42	Lower left 8 distal

Row 37

The data in each column refer to the loss of attachment (coded) at a each site examined.

The sites are ……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 8 distal
12	Lower right 8 mesial
13	Lower right 7 distal
14	Lower right 7 mesial
15	Lower right 6 distal
16	Lower right 6 mesial
17	Lower right 5 distal
18	Lower right 5 mesial
19	Lower right 4 distal
20	Lower right 4 mesial
21	Lower right 3 distal
22	Lower right 3 mesial
23	Lower right 2 distal
24	Lower right 2 mesial
25	Lower right 1 distal
26	Lower right 1 mesial
27	Lower left 1 mesial
28	Lower left 1 distal
29	Lower left 2 mesial
30	Lower left 2 distal
31	Lower left 3 mesial
32	Lower left 3 distal
33	Lower left 4 mesial
34	Lower left 4 distal
35	Lower left 5 mesial
36	Lower left 5 distal
37	Lower left 6 mesial
38	Lower left 6 distal
39	Lower left 7 mesial
40	Lower left 7 distal
41	Lower left 8 mesial
42	Lower left 8 distal

Row 38

Each column refers to the amount of plaque (coded) on the……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	Lower right 8
12	Lower right 7
13	Lower right 6
14	Lower right 5
15	Lower right 4
16	Lower right 3
17	Lower right 2
18	Lower right 1
19	Lower left 1
20	Lower left 2
21	Lower left 3
22	Lower left 4
23	Lower left 5
24	Lower left 6
25	Lower left 7
26	Lower left 8
….. and then the degree to which the furcation region of the following teeth was involved by periodontal disease in columns …..	
27	Lower right 8
28	Lower right 7
29	Lower right 6
30	Lower right 6
31	Lower right 7
32	Lower right 8
…..and then the presence or absence of the following soft tissue conditions in the following columns…..	
33	Angular cheilitis
34	Denture stomatitis grade I
35	Denture stomatitis grade II
36	Denture stomatitis grade III
37	Denture related hyperplasia
38	Ulcer associated with the denture
39	Any other soft tissue lesion (these are written on the forms but not coded, all were rare)

Row 39

All codes here refer to the condition of the patient's dentures (if worn). The data in each column are……

Column	Variable
1-2	ROW NUMBER
3-8	SERIAL 'SUBJECT CODE'
9-10	AREA 'AREA CODE'
11	UPD1 'UPPER PARTIAL DENTURE PRESENT'
12	LPD1 'LOWER PARTIAL DENTURE PRESENT'
13	UPD2 'UPPER PARTIAL DENTURE MISSING TEETH'
14	LPD2 'LOWER PARTIAL DENTURE MISSING TEETH'
15	UPD3 'UPPER PARTIAL DENTURE ADDITIONAL FUNCTION'
16	LPD3 'LOWER PARTIAL DENTURE ADDITIONAL FUNCTION'
17	UPD4 'UPPER PARTIAL DENTURE KENNEDY'
18	LPD4 'LOWER PARTIAL DENTURE KENNEDY'
19	UPD5 'UPPER PARTIAL DENTURE ANTERIORS MISSING'
20	LPD5 'LOWER PARTIAL DENTURE ANTERIORS MISSING'
21	UPD6 'UPPER PARTIAL DENTURE MATERIAL'
22	LPD6 'LOWER PARTIAL DENTURE MATERIAL'
23	UPD7 'UPPER PARTIAL DENTURE SUPPORT'
24	LPD7 'LOWER PARTIAL DENTURE SUPPORT'
25	UPD8 'UPPER PARTIAL DENTURE RETENTION'
26	LPD8 'LOWER PARTIAL DENTURE RETENTION'
27	EVER 'PARTIAL DENTURE WHICH COULD NOT BE WORN'
28	UCD1 'UPPER COMPLETE DENTURE PRESENT'
29	LCD1 'LOWER COMPLETE DENTURE PRESENT'
30	UCD2 'UPPER COMPLETE DENTURE MATERIAL'
31	LCD2 'LOWER COMPLETE DENTURE MATERIAL'
32	UCD3 'UPPER COMPLETE DENTURE TOOTH MATERIAL'
33	LCD3 'LOWER COMPLETE DENTURE TOOTH MATERIAL'
34	CD4 'MATCHING SET'
35	UCD5 'UPPER COMPLETE DENTURE OCCLUSAL WEAR'
36	LCD5 'LOWER COMPLETE DENTURE OCCLUSAL WEAR'
37	DEFU1 'UPPER COMPLETE DENTURE FAULT ANTS'
38	DEFL1 'LOWER COMPLETE DENTURE FAULT ANTS'
39	DEFU2 'UPPER COMPLETE DENTURE FAULT POSTS'
40	DEFL2 'LOWER COMPLETE DENTURE FAULT POSTS'
41	DEFU3 'UPPER COMPLETE DENTURE FAULT FRACTD'
42	DEFL3 'LOWER COMPLETE DENTURE FAULT FRACTD'
43	CD6 'COMPLETE DENTURE UPPER ANTERIOR TOOTH POSTN'
44	CD7 'LOWER COMPLETE DENTURE LOWER TOOTH POSTN'
45	UCD8 'UPPER COMPLETE DENTURE RIDGE'
46	LCD8 'LOWER COMPLETE DENTURE RIDGE'
47	UCD9 'UPPER COMPLETE DENTURE ADAPTATION'
48	LCD9 'LOWER COMPLETE DENTURE ADAPTATION'

49	UCD10 'UPPER COMPLETE DENTURE RETENTION'
50	LCD10 'LOWER COMPLETE DENTURE RETENTION'
51	UCD11 'UPPER COMPLETE DENTURE EXTENSION'
52	LCD11 'LOWER COMPLETE DENTURE EXTENSION'
53	CD12 'COMPLETE DENTURE OCCLUSION'
54	CD13 'COMPLETE DENTURE FREE WAY SPACE'

VALUE LABELS OUTCOME 1 'COMPLETED' 2 'NO PERIO' 3 'INCOMPLETE' /
STAT DEN2STAT PDENSTAT 1 'BOTH ARCHES' 2 'UPPER' 3 'LOWER' 4 'NONE' /

SAT1 SAT2 SAT3 DEN7 DEN8 DEN9 PD9 PD10 PD11 1 'VERY SATISFIED'

2 'FAIRLY SATISFIED' 3 'FAIRLY UNSATISFIED' 4 'VERY UNSATISFIED'

9 'CANNOT SAY'/ SAT1 SAT2 SAT3 DEN7 DEN8 DEN9 PD9 PD10 PD11 1 'VERY'

2 'FAIRLY SAT' 3 'FAIRLY UNSAT' 4 'VERY UNSAT' 9 'CANT SAY'/ DEN4U DEN4L

PD3U PD3L 1 'ALWAYS' 2 'SOMETIMES'/ DEN3U DEN3L DEN5U DEN5L DEN6U DEN6L

DEN10 DEN19 PD2U PD2L PD4U PD4L PD5U PD5L PD6 PD7 PD8 PD12 PRB1 PRB2 PRB3

PRB4 PRB5 PRB6 PRB7 PRB8 PRB9 PRB10 PRB11 PRB12 PRB13 PRB14 PRB15 PRB16

PRB5AC PRB6AC PRB7AC PRB8AC PRB9AC PRB10AC PRB11AC PRB12AC PRB13AC PRB14AC

PRB15AC PRB16AC DRY DRYDEN DRYEYE IMP1A IMP2A IMP3A IMP4A IMP5A IMP6A

IMP7A IMPMA IMPSA IMPEA ATTRX3 1 'YES' 2 'NO'/ DEN11 DEN12 DEN13 DEN14

DEN15 DEN16 DEN17 DEN18 DRYEAT DRYOTH DRYNHT DRYCH DRYSW DRYMD DRYGUM

DRYSWT DRYWAT DRYMED BRTH MEDUL MEDDUL MEDGAS MEDACD MEDOTH 1 'YES' 2 'NO' 9

9 'CANT SAY'/ PD13 1 'VERY OFTEN' 2 'FAIRLY OFTEN' 3 'NOT VERY OFTEN' 4

'HARDLY EVER'/ CLN1 CLND1 1 'CLEANS OWN' 2 SOMEONE ELSE' 3 'NOT AT ALL'/

CLNDFQ 1 'GRT ONCE' 2 'ABT ONCE' 3 '5-6 PER WEEK' 4 '3-4 PER WEEK'

5 '1-2 PER WEEK' 6 'LESS THAN 1 A WEEK'/ PRB1FQ PRB2FQ PRB3FQ 1 'VRY OFT'

2 'QUITE OFTEN' 3 'SOMETIMES' 4 'HARDLY EVER'/ PRB4FQ PRB5FQ PRB6FQ

PRB7FQ PRB8FQ PRB9FQ PRB10FQ PRB11FQ PRB12FQ PRB13FQ PRB14FQ PRB15FQ

PRB16FQ 1 'GREAT DISCOMFORT' 2 'FAIR DISCOMFORT' 3 'LITTLE DISCOMFORT' 4

'NO DISCOMFORT' / BRTH2 1 'GREAT DIFFICULTY' 2 'FAIR DIFFICULTY' 3

'LITTLE DIFFICULTY'/ IMP1B IMP2B IMP3B IMP4B IMP5B IMP6B IMP7B IMPMB IMPSB

IMPEB 1 'REGULAR' 2 'PART'/ IMP1C IMP2C IMP3C IMP4C IMP5C IMP6C IMP7C

IMPMC IMPSC 1 'LESS THAN MONTHLY' 2 '1-2X PER MONTH' 3 '1-2X PER WEEK' 4

'3-4X PER WEEK' 5 'DAILY OR NEARLY DAILY' 9 'CANT SAY'/ IMP1D IMP2D IMP3D

IMP4D IMP5D IMP6D IMP7D IMPMD IMPSD 1 '5 DAYS OR LESS' 2 '5 DYS TO A MTH'

3 '1-2 MONTHS' 4 '2-3 MONTHS' 5 'GRT 3 MONTHS' / IMP1E IMP2E IMP3E

IMP4E IMP5E IMP6E IMP7E IMPME IMPSE 0 'NO EFFECT' 1 'VERY MINOR EFFECT' 2

'FAIRLY MINOR EFFECT' 3 'MODERATE EFFECT' 4 'FAIRLY SEVERE EFFECT' 5

'V SVRE EFFECT' 9 'CANT SAY' / EAT1 EAT2 EAT3 1 'NO DIFFICULTY' 2

'LT DCULTY' 3 'FAIR DIFFICULTY' 4 'GREAT DIFFICULTY' / FD1 FD2 FD3 FD4 FD5

FD6 FD7 FD8 FD9 FD10 FD11 FD12 FD13 FD14 FD15 FD16 1 'EASY' 2

'SME DCULTY' 3 'NOT AT ALL' / EATSUM 1 'SOME FOODS CANNOT BE EATEN'

2 'ALL FOODS CAN BE EATEN' / EATSOFT 1 'SOFT ONLY' 2 'OTHER FOODS ALSO' 3

'LIQUIDS ONLY' / ATTDEN ATTGEN 1 'REGULAR' 2 'OCCASIONAL' 3 'ONLY WTH TL'

4 'NEVER' / ATTLST1 1 'LAST 6 MTHS' 2 '6MTHS TO 1 YEAR' 3 '1 TO 2 YEARS'

4 '2-3 YEARS' 5 '3-5 YEARS' 6 '5-10 YEARS' 7 '10-20 YEARS' 8 '>20 YEARS' 9

'NEVER SEEN DENTIST' 0 'CANT SAY' / ATTLST2 1 'TROUBLE' 2 'CHECKUP' /

ATTAPP 1 'YES' 2 'NO' 3 'NEVER ARRANGE APPT' / ATTDIS 1 '< HALF MILE' 2

'HALF - ONE MILE' 3 '1-2 MILES' 4 '2-3 MILES' 5 '3-5 MILES' 6 '5-10 MILES'

7 '10-15 MILES' 8 '15-20 MILES' 9 '20+ MILES' 0 'NONE/DOMICILLARY' /

ATTTPT 1 'WALK' 2 'CAR - SELF' 3 'CAR - ELSE' 4 'BUS' 5 'TRAIN' 6 'TAXI' 7

'BICYCLE' 8 'OTHER'/ ATTJNY 1 'EASY' 2 'FAIRLY EASY' 3 'FAIRLY DIFFICULT'

4 'DIFFICULT' / ATTPAY 1 'FREE' 2 'INSURANCE' 3 'SELF' 4 'OTHER' / ATTRX1

1 'NEEDS TREATMENT' 2 'NOT NEED TREATMENT' 3 'CANT SAY' / UPD1 UPD2 UPD4

UPD5 LPD1 LPD2 LPD3 LPD5 EVER UCD1 LCD1 CD4 CD6 CD7 UCD8 LCD8

0 'NO' 1 'YES' / UPD6 LPD6 1 'ACRYLIC' 2 'A AND CLASPS' 3 'METAL' / UPD7

LPD7 1 'TISSUE' 2 'TOOTH ONLY' 3 'BOTH' / UPD8 LPD8 1 'FRICTION' 2

'CLASPS' 3 'OTHER' / UCD2 LCD2 1 'ACRYLIC' 2 'METAL' 3 'VULCANITE' 4

'OTHER' / UCD3 LCD3 1 'ACRYLIC' 2 'PORCELAIN' / UCD5 LCD5 CD7 UCD8 LCD8

UCD9 LCD9 UCD10 LCD10 UCD11 LCD11 CD12 1 'ADEQUATE' 2 'INADEQUATE' / CD6 1

'ADEQUATE' 2 'ANTERIOR' 3 'POSTERIOR' / CD13 1 'SATISFACTORY' 2

'EXCESSIVE' 3 'TOO LITTLE'.

Appendix 9

Questionnaire for the Oral Health Survey

NATIONAL DIET AND NUTRITION SURVEY

PEOPLE AGED 65 OR OVER

University of Newcastle Dental School
University of Birmingham Dental School
Social and Community Planning Research
University College London Medical School
MRC Dunn Nutrition Centre, Cambridge

On behalf of:
Department of Health,
Ministry of Agriculture,
Fisheries and Food

P1453

1995

NATIONAL DIET AND NUTRITION SURVEY

PEOPLE AGED 65 OR OVER

DENTAL SURVEY

Examination Record and Questionnaire

AFFIX SERIAL NUMBER LABEL HERE

101-5

CARD 1:

INTERVIEWER CODE

i) SEX: Male 1 Female 2 111

ii) AGE: 112-4

iii) DATE OF INTERVIEW: DAY MONTH YEAR 115-120

iv) TIME VISIT BEGAN: (24 hour clock) 121-4

v) INTERVIEWER NAME: _____ NUMBER 125-

vi) EXAMINER NAME: _____ NUMBER 131-

vii) EXAMINATION OUTCOME

CHECK WITH EXAMINER AS NECESSARY AND CODE ONE:

Fully completed 1
Completed without peridontal 2
Not completed 3

vii) Natural teeth

Both Arches 1
Upper arch only 2
Lower arch only 3
No natural teeth 4

OFFICE USE ONLY

BATCH NO.

SCREENING

CODE BY REFERENCE TO EXAMINATION RECORD. CHECK WITH EXAMINER IF YOU ARE UNSURE WHICH CODES APPLY.

A. NATURAL TEETH
Respondent has:

Any natural teeth	1		141
No natural teeth	2		

B. DENTURES
Respondent has:

Any dentures	1	**ASK Q.C**	142
No dentures	2	**GO TO Q.E**	

C. COMPLETE DENTURE(S)
(A complete denture is a full set of artificial teeth on either jaw of the mouth.)

Respondent has:

Complete denture on <u>both</u> jaws	1	143
Complete denture on <u>upper</u> jaw only	2	
Complete dentures on <u>lower</u> jaw only	3	
<u>No</u> complete dentures	4	

D. PARTIAL DENTURE(S)
(A partial denture is a set of one or more artificial teeth but less than a full set of teeth for a jaw).

Respondent has:

Partial denture on <u>both</u> jaws	1	144
Partial denture on <u>upper</u> jaw only	2	
Partial dentures on <u>lower</u> jaw only	3	
<u>No</u> partial dentures	4	

INTERVIEW

E. TIME INTERVIEW BEGAN:
(24 hour clock) ☐☐☐☐ 145-8

F. **INTERVIEWER CHECK Qs A AND B AND CODE <u>ONE</u> BELOW:**

Both natural teeth and dentures (CODE 1 AT A AND B)	1	**ASK Q1**	149
Natural teeth only (CODE 1 AT A AND CODE 2 AT B)	2	**GO TO Q2**	
Dentures only (CODE 2 AT A AND CODE 1 AT B)	3	**GO TO Q5**	
Neither natural teeth nor dentures (CODE 2 AT A AND B)	4	**GO TO Q26**	

SATISFACTION WITH TEETH

PREAMBLE FOR ALL WITH NATURAL TEETH AND DENTURE(S):

1. The first few questions are about how satisfied you are with your teeth as a whole, including both your natural teeth and the artificial teeth you have in your denture(s).

ALL WITH ANY NATURAL TEETH

2. **SHOW CARD A** How satisfied are you with the size of your teeth, that is how long they are. Are you ... **READ OUT** ...

very satisfied	1	
fairly satisfied	2	
fairly unsatisfied	3	
or very unsatisfied?	4	
(Can't say)	9	

3. **SHOW CARD A** How satisfied are you with the shape and position of your teeth, that is how even or crooked they are. Are you ... **READ OUT** ...

very satisfied	1	
fairly satisfied	2	
fairly unsatisfied	3	
or very unsatisfied?	4	
(Can't say)	9	

4. **SHOW CARD A** How satisfied are you with the colour of your teeth. Are you ... **READ OUT** ...

very satisfied	1	
fairly satisfied	2	
fairly unsatisfied	3	
or very unsatisfied?	4	
(Can't say)	9	

5. **INTERVIEWER CHECK Q.C ON SCREENING PAGE AND RECORD:**

Respondent wears a complete denture on both jaws (CODE 1)	1	**ASK Q6 FOR BOTH JAWS**
Respondent wears a complete denture on upper jaw only (CODE 2)	2	**ASK Q6 FOR UPPER JAW ONLY**
Respondent wears a complete denture on lower jaw only (CODE 3)	3	**ASK Q6 FOR LOWER JAW ONLY**
Respondent does not wear a complete denture (CODE 4)	4	**GO TO Q14**

COMPLETE DENTURES

6. The next few questions are about your complete denture(s).
ASK Q6 SEPARATELY FOR EACH COMPLETE DENTURE/JAW.

(Thinking about the denture in your upper jaw...)

(Thinking about the denture in your lower jaw...)

	TICK BOX IF APPLICABLE: ☐ Upper Jaw	☐ Lower Jaw	
a) How long have you had your present denture in your ... (upper/lower) ... jaw?	☐☐ years	☐☐ years	154-7
Can't say	99	99	
b) How long is it since the last of your natural teeth in your ... (upper/lower) ... jaw were removed?	☐☐ years	☐☐ years	158-61
(One or more teeth still present)	88	88	
(Can't say)	99	99	
c) In general, do you wear your ... (upper/lower) ... denture when you sleep at night?			162-3
Yes	1	1	
No	2	2	
d) And apart from when you sleep, do you wear your ... (upper/lower) ... denture **READ OUT** ...			164-5
all of the time	1 **GO TO Q6 FOR LOWER JAW (IF APPLICABLE)**	1 **GO TO Q7**	
or only some of the time?	2 **ASK e-f**	2 **ASK e-f**	
e) **IF DENTURE WORN SOME OF THE TIME** In general, do you wear your ... (upper/lower) ... denture for social occasions?			166-7
Yes	1	1	
No	2	2	
f) And, in general, do you wear your ... (upper/lower) ... denture for eating?			168-9
Yes	1	1	
No	2	2	
	NOW GO TO Q6 FOR LOWER JAW (IF APPLICABLE)	**NOW GO TO Q7**	

7a) **SHOW CARD A** How satisfied are you with the overall comfort of your complete dentures. Are you ... **READ OUT** ...

very satisfied	1	170
fairly satisfied	2	
fairly unsatisfied	3	
or very unsatisfied?	4	
(Can't say)	9	

b) **SHOW CARD A** How satisfied are you with the shape and size of the teeth of your complete denture(s). Are you ... **READ OUT** ...

very satisfied	1	171
fairly satisfied	2	
fairly unsatisfied	3	
or very unsatisfied?	4	
(Can't say)	9	

c) **SHOW CARD A** How satisfied are you with the colour of the teeth of your complete denture(s). Are you ... **READ OUT** ...

very satisfied	1	172
fairly satisfied	2	
fairly unsatisfied	3	
or very unsatisfied?	4	
(Can't say)	9	

8. Do you use any adhesive or fixative nowadays to help keep your complete denture(s) in place?

Yes	1	173
No	2	

9. Now I am going to read out some changes which some people sometimes notice when they start to wear complete dentures. For each change please could you tell me whether or not it has applied to you since you first started wearing a complete denture.

a) Would you say that wearing a complete denture has made your mouth feel full?

Yes	1	174
No	2	
(Can't say)	9	

b) Would you say that wearing a complete denture has made you eat more slowly than before?

Yes	1	175
No	2	
(Can't say)	9	

c) Would you say that wearing a complete denture has changed the flavour of your food?

Yes	1	176
No	2	
(Can't say)	9	

d) Would you say that wearing a complete denture has changed the way you speak?

Yes	1	177
No	2	
(Can't say)	9	

10a) Do you ever find that difficulties with your complete dentures(s) make you unable to eat food which is offered to you?

Yes	1	178
No	2	
(Can't say)	9	

b) And do you ever find that you are unable to speak properly because your dentures move?

Yes	1	179
No	2	
(Can't say)	9	

11. **RESPONDENT CHECK Q.C ON SCREENING PAGE AND RECORD:**

Respondent has a complete denture on <u>both</u> jaws (CODE 1)	1	**ASK Q12**	180
Respondent has a complete denture on <u>upper</u> jaw only (CODE 2)	2		
Respondent has a complete denture on <u>lower</u> jaw only (CODE 3)	3	**GO TO Q13**	

IF COMPLETE DENTURE ON UPPER JAW (CODES 1-2 AT Q11)

12a) Does the denture on your upper jaw ever drop when you speak? CARD 02

Yes	1	211
No	2	
(Can't say)	9	

b) And does the denture on your upper jaw ever drop when your mouth is open (apart from when you speak)?

Yes	1	212
No	2	
(Can't say)	9	

13. **ALL WITH COMPLETE DENTURE(S)**
Do you ever feel embarrassed because of your complete denture(s)?

Yes	1	213
No	2	

ALL

14. **INTERVIEWER CHECK Q.D ON SCREENING PAGE AND RECORD:**

Respondent has a partial denture on <u>both</u> jaws (CODE 1)	1	**ASK Q15 FOR BOTH JAWS**	214
Respondent has a partial denture on <u>upper</u> jaw only (CODE 2)	2	**ASK Q15 FOR UPPER JAW ONLY**	
Respondent has a partial denture on <u>lower</u> jaw only (CODE 3)	3	**ASK Q15 FOR LOWER JAW ONLY**	
Respondent does <u>not</u> wear a partial denture (CODE 4)	4	**GO TO Q18**	

PARTIAL DENTURES

15. The new few questions are about your partial denture(s).

ASK Q15 SEPARATELY FOR EACH PARTIAL DENTURE/JAW

(Thinking about the denture in your upper jaw...)

(Thinking about the denture in your lower jaw...)

	TICK BOX IF APPLICABLE:	☐ Upper Jaw	☐ Lower Jaw	
a)	How long have you had your present denture in your ... (upper/lower) ... jaw?	☐☐ years	☐☐ years	215-6
	(Can't say)	99	99	
b)	In general, do you wear the denture in your ... (upper/lower) ... jaw when you sleep at night?			219-20
	Yes	1	1	
	No	2	2	
c)	And apart from when you sleep, do you usually wear the denture in your ...(upper/lower)... jaw ... **READ OUT** ...			221-2
	all of the time	1 **GO TO Q15 FOR LOWER JAW (IF APPLICABLE)**	1 **GO TO Q16**	
	or only some of the time?	2 **ASK d-e**	2 **ASK d-e**	
d)	**IF PARTIAL DENTURE WORN SOME OF THE TIME** Do you usually wear the denture in your ... (upper/lower) ... jaw for social occasions?			223-4
	Yes	1	1	
	No	2	2	
e)	In general, do you wear the denture in your ... (upper/lower) ... jaw for eating?			225-6
	Yes	1	1	
	No	2	2	
		NOW GO TO Q15 FOR LOWER JAW (IF APPLICABLE)	**NOW GO TO Q16**	

16. Now I am going to read out some reasons why people choose to wear a partial denture. For each reason, please could you say whether or not it applies to you?

Which, if any, of the following reasons for wearing a partial denture apply to you?

READ OUT AND CODE 'YES' OR 'NO' FOR EACH

- I wear a partial denture because it improves my appearance	Yes	1	227
	No	2	
- I wear a partial denture because it helps me to eat	Yes	1	228
	No	2	
- I wear a partial denture because my dentist recommended it?	Yes	1	229
	No	2	

17a) **SHOW CARD A** How satisfied are you with the overall comfort of your partial denture(s)? Are you ... **READ OUT** ...

very satisfied	1	230
fairly satisfied	2	
fairly unsatisfied	3	
or very unsatisfied?	4	
(Can't say)	9	

b) **SHOW CARD A** And how satisfied are you with the shape and size of the teeth of your partial denture(s)? Are you ... **READ OUT** ...

very satisfied	1	231
fairly satisfied	2	
fairly unsatisfied	3	
or very unsatisfied?	4	
(Can't say)	9	

c) **SHOW CARD A** And how satisfied are you with the colour of the teeth of your partial denture(s)? Are you ... **READ OUT** ...

very satisfied	1	232
fairly satisfied	2	
fairly unsatisfied	3	
or very unsatisfied?	4	
(Can't say)	9	

ALL WITH ANY TEETH OR DENTURES

18a) Some people who are not satisfied with their teeth or dentures avoid showing them when they smile. Do you ever try to avoid showing your teeth or dentures when smiling or laughing?

Yes	1	**ASK b)**	233
No	2	**GO TO Q19**	

IF YES AT a)

b) Would you say you do this ... **READ OUT** ...

very often	1	234
fairly often	2	
not very often	3	
or hardly ever?	4	

CLEANING TEETH AND DENTURES

19. **INTERVIEWER CHECK Q.A ON SCREENING PAGE AND RECORD:**

Respondent has any natural teeth (CODE 1)	1	**ASK Q20**	235
Respondent has no natural teeth (CODE 2)	2	**GO TO Q21**	

IF ANY NATURAL TEETH

20a) **(IF ANY DENTURES ALSO WORN READ AS PREAMBLE:**
Now thinking only about your natural teeth ...)
Do you clean your (natural) teeth yourself?
IF 'NO', PROMPT: Does someone else clean them for you?

Yes, respondent cleans own dentures	1	**GO TO d)**	236
No, teeth cleaned by someone else	2	**ASK b)**	
No, teeth are not cleaned at all	3		

IF DOES NOT CLEAN OWN TEETH

b) Why do you not clean your (natural) teeth yourself?
PROBE FULLY

_____ 237-42

_____

_____

c) **INTERVIEWER CHECK a AND RECORD**

Teeth are cleaned by respondent or someone else (CODES 1 OR 2)	1	**ASK d)**	243
Teeth are not cleaned at all (CODE 3)	2	**GO TO Q21**	

IF TEETH ARE CLEANED AT ALL (CODES 1 OR 2 AT a)

d) **SHOW CARD B** How often do you (does someone else) clean your (natural) teeth?
PROMPT AS NECESSARY: Would that be ...

more than once a day	1	244
about once a day	2	
about five or six times a week	3	
about three or four times a week	4	
about once or twice a week	5	
or less often than once a week?	6	

21. **INTERVIEWER CHECK SCREENING PAGE AND RECORD FIRST TO APPLY:**

Respondent has any dentures (CODE 1 AT Q.B)	1	**ASK Q22**	245
Respondent has no dentures (CODE 2 AT Q.B)	2	**GO TO Q23**	

IF HAS ANY DENTURES

22a) Do you clean your denture(s) yourself?
IF 'NO', PROMPT: Does someone else clean it/them for you?

NOTE: RINSING COUNTS AS CLEANING

Yes, respondent cleans own dentures	1	**GO TO b)**	246
No, dentures cleaned by someone else	2		
No, dentures are not cleaned at all	3	**GO TO Q23**	

IF DENTURES CLEANED AT ALL (CODES 1 OR 2 AT a)

b) How often do you (does someone else) clean your dentures?
PROMPT AS NECESSARY: Would that be ...

more than once a day	1	247
about once a day	2	
about five or six times a week	3	
about three or four times a week	4	
about once a week	5	
or less often than once a week?	6	

PROBLEMS WITH TEETH OR DENTURES

23. The next few questions are about any problems which you may have experienced with your teeth or dentures in the past 6 months, that is since ... (**DATE/MONTH 1994/5**)

CHECK MONTH 6 MONTHS AGO:

CURRENT MONTH		6 MONTHS AGO	
January	1995	July	1994
February	1995	August	1994
March	1995	September	1994
April	1995	October	1994
May	1995	November	1994
June	1995	December	1994
July	1995	January	1995
August	1995	February	1995
September	1995	March	1995
October	1995	April	1995
November	1995	May	1995
December	1995	June	1995

INTERVIEWER CHECK Q.A ON SCREENING PAGE AND RECORD:

Respondent has any natural teeth (CODES 1-3)	1	**ASK Q24**	248
Respondent has no natural teeth (CODE 4)	2	**GO TO Q25**	

IF ANY NATURAL TEETH ASK a) THEN b) FOR EACH PROBLEM

24a) **SHOW CARD C** In the past 6 months have you experienced ... **(PROBLEM)** ...?
READ OUT BOTH ITEMS AND CODE YES' OR NO'

IF YES AT a) ASK b)

b) **SHOW CARD D** Have you experienced this problem very often, quite often, sometimes or hardly ever in the past 6 months?

Problems:	a) Yes	a) No	b) very often	b) quite often	b) some-times	b) hardly ever?	
Sensitive teeth when eating or drinking anything cold, hot or sweet?	1	2	1	2	3	4	249-50
Any other mild discomfort with your teeth	1	2	1	2	3	4	251-2
Any toothache or severe discomfort with your teeth	1	2	1	2	3	4	253-4

ALL WITH ANY TEETH OR DENTURES

25a) In the past 6 months have you experienced any difficulties due to food getting stuck between teeth or under dentures?

Yes	1	**ASK b)**	255
No	2	**GO TO Q26**	

IF DIFFICULTIES DUE TO FOOD STICKING (CODE 1 AT a)

b) **SHOW CARD E** And in the past 6 months has food sticking between teeth or under dentures caused you ... **READ OUT** ...

a great amount of discomfort	1	256
a fair amount of discomfort	2	
a little discomfort	3	
or no discomfort?	4	

26a) **SHOW CARD F** In the past 6 months since ... (**MONTH**) 1994, have you experienced any of the following problems with your mouth, teeth or dentures. Please say 'yes' or 'no' for each problem I read out? **READ OUT EACH PROBLEM AND CODE 'YES' OR NO'**

CARD 03

(And in the past 6 months have you experienced ...?

b) **FOR EACH PROBLEM CODED 'YES' AT a, ASK b AND c:**
SHOW CARD G How much discomfort has ... (**PROBLEM**) ... caused you in the past 6 months?

PROMPT AS NECESSARY: Would you say it caused you ... **READ OUT** ...

a great amount of discomfort	1
a fair amount of discomfort	2
a little discomfort	3
or no discomfort?	4

c) Did you take any action to treat this problem?

	a) Whether problem experienced		b) Amount of discomfort				c) Whether took action to treat problem		
	Yes	No	A great amount of discomfort	A fair amount of discomfort	A little dis-comfort	No dis-comfort	Yes	No	
A pain in your jaw joint	1	2	1	2	3	4	1	2	311-3
A clicking or grating noise in your jaw joint	1	2	1	2	3	4	1	2	314-6
Difficulty in opening your mouth wide	1	2	1	2	3	4	1	2	317-9
A loose or ill-fitting denture	1	2	1	2	3	4	1	2	320-2
A loose natural tooth	1	2	1	2	3	4	1	2	323-5
A broken or chipped natural tooth	1	2	1	2	3	4	1	2	326-8
Dryness in your mouth**	1	2	1	2	3	4	1	2	329-31
A burning sensation in your mouth	1	2	1	2	3	4	1	2	332-4
Sore spots or ulcers	1	2	1	2	3	4	1	2	335-7
A sore or painful mouth or tongue (excluding sore spots or ulcers)	1	2	1	2	3	4	1	2	338-40
Bleeding gums	1	2	1	2	3	4	1	2	341-3
Dry, sore or cracked lips	1	2	1	2	3	4	1	2	344-6

27. **INTERVIEWER CHECK SEVENTH ITEM AT Q.26a (MARKED **) AND RECORD:**

Respondent has experienced dryness of mouth (CODE 1)	1	**ASK Q28**
Respondent has <u>not</u> experienced dryness of mouth (CODE 2)	2	**GO TO Q31**

IF EXPERIENCED DRYNESS OF MOUTH

28a) You mentioned that you had experienced some dryness in your mouth in the past 6 months. I would like to ask you a little more about this problem.

Does your mouth ever ...
READ OUT EACH ITEM AND CODE 'YES' OR 'NO'

	Yes	No	(Can't Say)	
feel dry when you are eating a meal	1	2	9	
feel dry at other times of the day	1	2	9	
feel dry at night	1	2	9	

b) Does dryness in your mouth ever cause you any of the following difficulties?
READ OUT EACH DIFFICULTY AND CODE 'YES' OR 'NO'

	Yes	No	(Can't Say)	
Difficulty chewing food	1	2	9	
Difficulty swallowing food	1	2	9	
Difficulty taking medication	1	2	9	

c) Have you done any of the following to relieve your dry mouth?
READ OUT EACH MEASURE AND CODE 'YES' OR 'NO'

	Yes	No	(Can't Say)	
Chew gum to relieve your dry mouth	1	2	9	
Suck hard sweets or mints to relieve your dry mouth	1	2	9	
Sip water or other liquid to help you swallow dry foods	1	2	9	
Take any other product or medication to relieve your dry mouth	1	2	9	

29. **INTERVIEWER CHECK SCREENING PAGE AND RECORD:**

Respondent has any dentures (CODE 1 at Q.B)	1	**ASK Q30**	358
Respondent has no dentures (CODE 2 AT Q.B)	2	**GO TO Q31**	

IF HAS DENTURE(S)

30. Has dryness in your mouth ever given you any problems with your denture(s)?

Yes	1	359
No	2	

ALL

31a) Have you suffered from bad breath at all in the past 6 months (as far as you are aware)?

Yes	1	**ASK b)**	360
No	2	**GO TO Q32**	
Can't say	9		

IF YES

b) In the past 6 months has bad breath caused you ... **READ OUT** ...

a great amount of difficulty	1	361
a fair amount of difficulty	2	
or little difficulty?	3	

32. The next two questions are about other health problems which need not be related to your mouth, teeth or dentures.

Have you suffered at all from dry eyes in the past 6 months?

Yes	1
No	2

33. **SHOW CARD H** Have you suffered from any of the following problems in the past 6 months?
READ OUT AND CODE EACH 'YES' OR 'NO'

	Yes	No	(Can't say)
stomach ulcer	1	2	9
duodenal ulcer	1	2	9
gastritis	1	2	9
acid indigestion/heartburn	1	2	9
any other stomach problem (**SPECIFY**)	1	2	9

ALL

34a) **SHOW CARD I** This card shows some everyday activities. For each activity I would like you to tell me whether or not problems with your mouth, teeth or dentures have caused you difficulty with it in the past 6 months.

In the past 6 months, have problems with your mouth, teeth or dentures caused you any difficulty ... **(ACTIVITY)**...?
READ OUT FOR EACH ACTIVITY AND CODE 'YES' OR NO'

FOR EACH ACTIVITY CODED 'YES' ASK b-e:

b) Have you had this difficulty ... **(ACTIVITY)** ... on a regular basis over the past 6 months or only for part of this period? **CODE ONE ONLY, THEN ASK c OR d AS INDICATED**

IF ABILITY RESTRICTED 'ON A REGULAR BASIS' (CODE 1 AT b)

c) **SHOW CARD J** During the past 6 months how often have you had this difficulty ... **(ACTIVITY)** ... Please choose your answer from this card?

PROMPT: (In the past 6 months) Have you had this difficulty ... **(ACTIVITY)** ... **READ OUT** ...

	ANSWER CODE
every day or nearly every day	5
about three or four times a week	4
about once or twice a week	3
about once or twice a month	2
or less often than once a month?	1
(Can't say)	(9)

ENTER ANSWER CODE IN BOX UNDER c) ON GRID. GO TO e).

IF ABILITY RESTRICTED 'ONLY FOR PART OF THIS PERIOD' (CODE 2 AT b)

d) **SHOW CARD K** For how much of the past 6 months have you had this difficulty ... **(ACTIVITY)** .... Please choose your answer from this card?

PROMPT: (In the past 6 months) Have you had this difficulty ... **(ACTIVITY)** ... **READ OUT** ...

	ANSWER CODE
for more than 3 months	5
for more than 2, up to 3 months	4
for more than 1, up to 2 months	3
for more than 5 days, up to a month	2
or for 5 days or less?	1
(Can't say)	(9)

ENTER ANSWER CODE IN BOX UNDER d) ON GRID. GO TO e).

e) **SHOW CARD L** And using a scale from 0 to 5, where 0 is no effect and 5 is a very severe effect, how much effect would you say that this difficulty ... **(ACTIVITY)** ... has had on your everyday life?
(Please choose an answer from this card).

IF RESPONDENT IS UNABLE TO ANSWER WITH NUMBERS, PROMPT VERBALLY AS FOLLOWS:

Has this difficulty ... **(ACTIVITY)** ... had ... **READ OUT** ... on your everyday life?

	ANSWER CODE
no effect	0
a very minor effect	1
a fairly minor effect	2
a moderate effect	3
a fairly severe effect	4
or a very severe effect	5
(Can't say)	(9)

CARD 04

ENTER ANSWER CODE (0-5) IN BOX UNDER e)

	a) Whether difficulty with activity		b) Whether has had this difficulty ...		c) On a regular basis	d) Only for part of period	e) Effect of this difficulty on everyday life	
	Yes	No	On a regular basis	Only for part of period	How often? (ENTER CODE)	How much? (ENTER CODE)	(ENTER CODE)	
Eating food	1	2	1 → c)	2 → d)				411-5
Speaking clearly	1	2	1 → c)	2 → d)				416-20
Cleaning your teeth or dentures	1	2	1 → c)	2 → d)				421-5
----------	-----	-----						426-30
Doing light physical activities such as housework	1	2	1 → c)	2 → d)				
Going out, for example, to shop or visit someone	1	2	1 → c)	2 → d)				431-5
Relaxing	1	2	1 → c)	2 → d)				436-40
Sleeping	1	2	1 → c)	2 → d)				441-5

35a) Some people find that problems with their mouth, teeth or dentures can affect their <u>mood</u> so that they become more emotional or more easily upset than usual. In the past 6 months have any problems with your mouth, teeth or dentures affected your mood in this way?

Yes	1	**ASK b)**
No	2	**GO TO Q36**

b) Has your mood been affected in this way ... **READ OUT** ...

on a regular basis over the past 6 months	1	**ASK c)**
or only for part of this period?	2	**GO TO e)**

IF MOOD AFFECTED ON A REGULAR BASIS (CODE 1 AT b)

c) **SHOW CARD M** During the past 6 months how often has your mood been affected in this way. Please choose your answer from this card?

PROMPT: (In the past 6 months) Has your mood been affected in this way ... **READ OUT** ...

every day or nearly every day	5
about three or four times a week	4
about once or twice a week	3
about once or twice a month	2
or less often than once a month	1
(Can't say)	(9)

NOW GO TO e)

IF MOOD AFFECTED 'ONLY FOR PART OF THIS PERIOD' (CODE 2 AT b)

d) **SHOW CARD N** For how much of the past 6 months has your mood been affected in this way. Please choose your answer from this card?

PROMPT: (In the past 6 months) Has your mood been affected in this way ... **READ OUT** ...

for more than 3 months	5
for more than 2, up to 3 months	4
for more than 1, up to 2 months	3
for more than 5 days, up to a month	2
or for 5 days or less	1
(Can't say)	(9)

e) **SHOW CARD O** And using a scale from 1 to 5, where 1 is very minor effect and 5 is a very severe effect, how much effect would you say that these problems have had on your mood in the past six months?

(IF RESPONDENT HAS DIFFICULTY ANSWERING WITH NUMBERS, PROMPT VERBALLY AS FOLLOWS:
Have these problems had ... **(READ OUT BELOW)** ... on your mood in the past 6 months?)
CODE ONE BELOW

a very minor effect	1
a fairly minor effect	2
a moderate effect	3
a fairly severe effect	4
or a very severe effect	5

36a) In the past 6 months have any problems with your mouth, teeth or dentures affected your enjoyment of contact with other people, such as relatives, friends or neighbours?

Yes	1	**ASK b)**
No	2	**GO TO Q37**

451

b) Has your enjoyment of contact with other people been affected in this way ... **READ OUT** ...

on a regular basis over the past 6 months	1	**ASK c)**
or only for part of this period?	2	**GO TO e)**

452

IF AFFECTED ON A REGULAR BASIS (CODE 1 AT b)

c) **SHOW CARD M** During the past 6 months how often has your enjoyment of contact with other people been affected in this way. Please choose your answer from this card?

PROMPT: (In the past 6 months) Has your enjoyment of contact with other people been affected in this way ... **READ OUT** ...

every day or nearly every day	5
about three or four times a week	4
about once or twice a week	3
about once or twice a month	2
or less often than once a month	1
(Can't say)	(9)

453

NOW GO TO e)

IF AFFECTED 'ONLY FOR PART OF THIS PERIOD' (CODE 2 AT b)

d) **SHOW CARD N** For how much of the past 6 months has your enjoyment of contact with other people been affected in this way. Please choose your answer from this card?

PROMPT: (In the past 6 months) Has your enjoyment of contact with other people been affected in this way ... **READ OUT** ...

for more than 3 months	5
for more than 2, up to 3 months	4
for more than 1, up to 2 months	3
for more than 5 days, up to a month	2
or for 5 days or less	1
(Can't say)	(9)

454

e) **SHOW CARD O** And using a scale from 1 to 5, where 1 is a very minor effect and 5 is a very severe effect, how much effect would you say that these problems have had on your enjoyment of contact with other people in the past 6 months?

(IF RESPONDENT HAS DIFFICULTY ANSWERING WITH NUMBERS, PROMPT VERBALLY AS FOLLOWS: Have these problems had ... **(READ OUT BELOW)** ... on your enjoyment of contact with other people in the past 6 months?

CODE ONE BELOW

a very minor effect	1
a fairly minor effect	2
a moderate effect	3
a fairly severe effect	4
or a very severe effect	5
(Can't say)	(9)

455

37a) And in the past 6 months have any problems with your mouth, teeth or dentures caused you to feel embarrassed in any way?

	1	
Yes	1	**ASK b)**
No	2	**GO TO Q38**

45

b) Would you say that problems with your mouth, teeth or dentures have caused you ... **READ OUT** ... in the past 6 months?

a little embarrassment	1
a fair amount of embarrassment	2
or a great amount of embarrassment	3

457

EATING

38. I would now like to ask you about how well you are able to eat foods nowadays. I will ask you separately about biting, chewing and swallowing.

a) In general, how well are you able to bite food that you eat nowadays? Would you say you have ... **READ AND CODE ONE ONLY** ...

no difficulty	1
a little difficulty	2
a fair amount of difficulty	3
or a great amount of difficulty biting food?	4

458

b) And in general, how well are you able to chew food that you eat nowadays? Would you say you have ... **READ OUT AND CODE ONE ONLY** ...

no difficulty	1
a little difficulty	2
a fair amount of difficulty	3
or a great amount of difficulty chewing food?	4

459

c) And in general, how well are you able to swallow food that you eat nowadays. Would you say you have ... **READ AND CODE ONE ONLY** ...

no difficulty	1
a little difficulty	2
a fair amount of difficulty	3
or a great amount of difficulty swallowing food?	4

460

ALL

39. **SHOW CARD P** Now I am going to read out a list of different types of food and I would like you to tell me for each one whether you could eat it easily, with with some difficulty or not at all. It doesn't matter whether or not you like the types of food or ever choose to eat it nowadays. We are interested in how well you could eat it if you wanted to. **READ OUT EACH ITEM AND CODE**

NB. 'EAT' MEANS BITE, CHEW AND SWALLOW. WE ARE NOT INTERESTED IN HOW WELL PEOPLE CAN DIGEST THESE FOODS.

PROMPT: Could you eat ... (**ITEM**) ... easily, with some difficulty or not at all?

	Could eat easily	Could eat with some difficulty	Could not eat at all	
Sliced bread	1	2	3	461
Crusty bread	1	2	3	462
Toast	1	2	3	463
Cheese	1	2	3	464
Tomatoes	1	2	3	465
Raw carrots	1	2	3	466
Roast potatoes	1	2	3	467
Cooked green vegetables	1	2	3	468
Lettuce	1	2	3	469
Sliced cooked meats	1	2	3	470
Well-done steaks	1	2	3	471
Apples	1	2	3	472
Oranges	1	2	3	473
Nuts	1	2	3	474
Crisps	1	2	3	475
Chocolates	1	2	3	476

40. **INTERVIEWER CHECK Q39 AND RECORD:**

There are some foods that respondent could not eat at all (ANY CODE 3)	1	**ASK Q41**
There are no foods that respondent could not eat at all (NO CODE 3 FOR ANY FOOD)	2	**GO TO Q42**

477

41. Can you ... **READ OUT** ...

only eat soft or mashed foods	1	478
or can you eat other foods as well?	2	
(can only take liquids/cannot eat even soft or mashed foods)	3	

CARD 0

VISITS TO DENTISTS

42. **INTERVIEWER CHECK Q.A OF SCREENING PAGE AND RECORD:**

Respondent has any natural teeth (CODE 1)	1	**GO TO Q44**	511
Respondent has no natural teeth (CODE 2)	2	**GO TO Q43**	

IF NO NATURAL TEETH

43. Thinking about when you had your own teeth, would you say that you saw a dentist for ... **READ OUT**

Regular checkups	1	512
Occasional checkups	2	
or only when you were having trouble with your teeth?	3	
(Never saw a dentist/was not registered with a dentist)	4	

44. In general, would you say that you see a dentist <u>nowadays</u> for ... **READ OUT**

Regular checkups	1	513
Occasional checkups	2	
... or only when you are having trouble with your teeth?	3	
(Never see dentist/not registered with dentist)	4	

45. When did you last see a dentist for an examination or treatment?
CODE ONE ONLY

In last six months	1		514
More than six months, up to a year ago	2		
More than a year, up to 2 years ago	3	**ASK Q46**	
More than 2, up to 3 years ago	4		
More than 3, up to 5 years ago	5		
More than 5, up to 10 years ago	6		
More than 10, up to 20 years ago	7		
More than 20 years ago	8		
Have never seen dentist	9	**GO TO Q47**	
(Can't say)	0		

IF EVER SEEN DENTIST (CODES 1-8 AT Q45)

46a) Thinking about the last time you saw a dentist, was this ... **READ OUT**
CODE ONE ONLY

INCLUDE ANY TROUBLE WITH MOUTH OR DENTURES AS TROUBLE WITH TEETH

because you were having some trouble with your teeth	1	**ASK b)**	515
or for a check up?	2	**GO TO Q47**	

IF VISIT BECAUSE OF TROUBLE WITH TEETH

b) What was the trouble you were having with your teeth which caused you to see a dentist?
PROBE FULLY

516-21

_____

_____

_____

47. **INTERVIEWER CHECK Q45 AND RECORD:**

Respondent last saw dentist in past 5 years (CODES 1-5)	1	**ASK Q48**	522
Respondent last saw dentist more than five years ago, has never seen dentist or can't say (CODES 6-9, 0)	2	**GO TO Q51**	

IF DENTIST SEEN IN PAST 5 YEARS

48. Do you ever have any problems arranging an appointment with a dentist?

Yes	1
No	2
(Never arrange appointment	3

49a) How far do you have to travel in order to visit your dentist?
PROMPT AS NECESSARY AND CODE NEAREST:

Under half a mile	1		523
Half a mile, under one mile	2		
Once mile, under two miles	3		
Two miles, under three miles	4		
Three miles, under five miles	5	**ASK b)**	
Five miles, under 10 miles	6		
10 miles, under 15 miles	7		
15 miles, under 20 miles	8		
20 miles or over	9		
(No travelling required/dentist comes to me)	0	**GO TO Q50**	

IF TRAVELS TO DENTIST

b) How do you usually travel to the dentist?
CODE ONE ONLY

IF MORE THAN ONE MODE:
a) ONE SAME JOURNEY - CODE FOR MOST MILES
b) OUTWARD VS RETURN - CODE FOR OUTWARD
c) ON DIFFERENT VISITS - CODE FOR MOST RECENT VISIT

Walk	1	524
Car/van driven by respondent	2	
Car/van driven by someone else	3	
Bus/minibus	4	
Train/underground	5	
Taxi	6	
Bicycle	7	
Other **(SPECIFY)** _____	8	

c) And thinking about how you usually travel to visit your dentist, would you say that this is...
READ OUT BELOW ... for you to make?

a very easy journy	1	
a fairly easy journey	2	
a fairly difficult journey	3	
or a very difficult journey	4	

ALL WHO HAVE SEEN DENTIST IN PAST 5 YEARS

50. When you see a dentist, how is your treatment usually paid for? Is it ... **READ OUT AND CODE ONE ONLY...**

Entirely free of charge	1	525
paid by insurance	2	
paid wholly or partly by you	3	
or paid under some other arrangement?	4	

(SPECIFY _____
_____
_____**)**

ALL

51a) If you visited a dentist tomorrow do you think you would need any treatment or not?

Respondent this (s)he would need treatment	1	**ASK b)**
Respondent thinks (s)he would not need treatment	2	**GO TO Q52**
(Can't say)	3	

IF THINKS WOULD NEED TREATMENT

b) What treatment do you think you would need?
PROBE FULLY

_____

_____

_____

c) Have you made any arrangements in order to obtain this treatment, such as booking a dental appointment or seeing a dentist?

Yes	1	
No	2	

52. TIME INTERVIEW ENDED (24 hour clock) | | | | |

DECAYED, MISSING AND FILLED SURFACES

UPPER

1A

		8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8	
06	D																	Crown
07	O/I																	
08	M																	
09	B									.								
10	L																	
11	D																	Root
12	M																	
13	B																	
14	L																	

LOWER

1B

		8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8	
15	D																	Crown
16	O/I																	
17	M																	
18	B																	
19	L																	
20	D																	Root
21	M																	
22	B																	
23	L						.											

TOOTH WEAR

UPPER

2A

		8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
24	Cervical																
25	Coronal																

LOWER

2B

		8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
26	Cervical																
27	Coronal																

SPACING

3

		7	6	5	4	3	2	1	1	2	3	4	5	6	7
28	Upper														
29	Lower														

CONTACTS

4

	8d	8m	7d	7m	6d	6m	5	4	4	5	6m	6d	7m	7d	8m	8d
30																

Is there contact of the natural anterior teeth?	YES =1 NO = 0	
If YES, How many (lowers)?		
If NO, can contact be achieved?	YES =1 NO = 0	
How many natural POSTERIOR teeth have no opposing natural tooth		
How many natural POSTERIOR teeth are opposed only by a denture		

30

PERIODONTAL DISEASE

UPPER — **5A**

	8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
31 mob																
	D M	D M	D M	D M	D M	D M	D M	D M	M D	M D	M D	M D	M D	M D	M D	M D
32 pk																
33 loa																
34 pl																
cont fur																

LOWER — **5B**

	8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8
35 mob																
	D M	D M	D M	D M	D M	D M	D M	D M	M D	M D	M D	M D	M D	M D	M D	M D
36 pk																
37 loa																
38 pl																
cont fur																

Mobility		Pockets and LoA		Plaque		Furcation	
0	None	0	0-3mm	0	None	0	none
1	Increased, <1mm	1	4-5mm	1	Probe only	1	Present, not through
2	Increased, >1mm	2	6-8mm	2	Visible	2	Through and through
9	Unscorable	3	9-11mm	3	Fills embrasures	9	Uscorable
		4	12+mm	9	Unscorable		
		9	Unscorable				

CODES: DMF, CROWN AND ROOT

Missing	-	Missing
Sound	0	No exposed root
	1	Exposed but sound
Decayed(unfilled)	2	Decayed
Decayed,urestorable	3	Decayed, unrestorable
Filled but unsound	4	Filled, unsound
Filled but sound	5	Filled, sound
Crowned, sound	6	Arrested caries
Crowned, unsound	7	
Bridge pontic	8	
Unscorable	9	Unscorable

SOFT TISSUES

38 cont

Angular Cheilitis	
Denture Stomatitis I	
Denture Stomatitis II	
Denture Stomatitis III	
Denture Hyperplasia	
Ulcer associated with denture	
OTHER (specify below)	

Present 1
Absent 0

OTHER lesions

Site: Clinical diagnosis:

Description (size, colour, texture, palpation, associated features, pain, sensitivity):

Follow up: Y/N

PARTIAL DENTURES

Card 39

Does the subject have a partial denture which he/she normally wears?

Yes 1
No 0

- Upper
- Lower

11

Does the Partial Denture replace all missing teeth?

Yes 1
No 0

- Upper
- Lower

Does the denture provide additional posterior function?

Yes 1
No 0

- Upper
- Lower

Kennedy Class (1 - 4)

Class I 1
Class II 2
Class III 3
Class IV 4

- Upper
- Lower

Are any natural anterior teeth missing which are replaced by the denture?

Yes 1
No 0

- Upper
- Lower

Material
Acrylic only 1
Acrylic+clasps 2
Metal based 3

- Upper
- Lower

Support
Tissue 1
Tooth only 2
Both 3

- Upper
- Lower

Retention
Tissue/friction 1
Clasps 2
Other 3

- Upper
- Lower

26

ALL SUBJECTS

Has the subject ever had a partial denture which could not be, or was not worn?

Yes 1
No 0

27

COMPLETE DENTURES

Does the patient have a complete denture which he/she normally wears?

Yes 1
No 0

- Upper
- Lower

Material - Base

Acrylic 1
Metal 2
Vulcanite 3
Other 4

- Upper
- Lower

Material - Teeth

Acrylic 1
Porcelain 2

- Upper
- Lower

Matching Set

Yes 1
No 0

Occlusal Wear

Satisfactory 1
Excessive 2
Unrecordable 9

- Upper
- Lower

Defects

	Yes 1 / No 0	Upp	Low	
- Anterior teeth missing				37-38
- Posterior teeth missing				39-40
- Fractured base				41-42

Tooth Position

Upper anterior
Adequate 1
Too anterior 2
Too posterior 3

Lower Posterior
Adequate 1
Lingual 2

Ridge form

Adequate 1
Inadequate 2

- Upper
- Lower

Adaptation

Adequate 1
Inadequate 2

- Upper
- Lower

Retention

Adequate 1
Inadequate 2

- Upper
- Lower

Extension

Adequate/under 1
Overextended 2

- Upper
- Lower

Occlusal relationship
Satisfactory 1
Excessive 2
Too little 3
Unrecordable 9

Free way space
Adequate 1
Poor 2

54

Appendix 10

Data description for file dietsums.prt containing the specific dietary variables developed for this survey.

This file is an spss portable data file, data variables can be derived by producing a library from the file.

The file contains the 5 digit subject code and then 12 specific dietary variables derived for the analysis of the oral health survey.

These variables were:

Variable	Description
MNHRSUG	Mean number of 1 hour periods during the day in which sugars-rich foods were consumed
MNHRCON	Mean number of 1 hour periods during the day in which items of confectionary were consumed
MNHRACD	Mean number of 1 hour periods during the day in which acids-rich foods were consumed
MNHRASUG	Mean number of 1 hour periods during the day in which sugars-rich foods and confectionary were consumed
MNWTSUG	Mean weight of sugars-rich foods consumed
MNWTCON	Mean weight of confectionary consumed
MNWTACD	Mean weight of acids-rich foods consumed
MNWTASUG	Mean weight of sugars-rich foods and confectionary consumed
MNFQSUG	Mean frequency of consumption of sugars-rich foods
MNFQCON	Mean frequency of consumption of confectionary
MNFQACD	Mean frequency of consumption of acids-rich foods
MNFGASUG	Mean frequency of consumption of sugars-rich foods and confectionary

Appendix 11

Data description for the file dentwt.dat containing the individual weights developed for this survey.

Columns	Variable
1-5	SERIAL 'SUBJECT CODE'
6-11	WEIGHT FOR EACH INDIVIDUAL CODE TO 4 DECIMAL PLACES

Appendix 12

SPSS command file to convert area codes from the full data set to regions of the UK

```
GET FILE="*.sps"

RECODE POINT (1,2,3,28,29,54,55=1) (4 THRU 13,30 THRU 35,56 THRU 60=2)
    (14 THRU 18,21,22,36,37 THRU 40,45,48,50,61,62,63=3)
    (19,20,23,24,25,41 THRU 44,46,47,49,51,52,64 THRU 79=5) INTO SREGION

VALUE LABELS SREGION 1 'SCOTLAND' 2 'NORTH' 3 'MIDLANDS' 4
'WALES' 5 'SOUTH'

RECODE SREGION (1,2=1) (3,4=2) (5=3) INTO REGION

REGION 1 'SCOTLAND AND NORTH' 2 'WALES AND MIDLANDS' 3 'SOUTH'

RECODE POINT (1,2,3,28,29,54,55=1) (4 THRU 13,30 THRU 35,56 THRU 60=2)
    (14 THRU 18,21,22,36 THRU 40,43,45 THRU 48,50,52,61,62,
    63,70,73,74,77=3) (19,20,23,24,25,41,42,44,49,51,64 THRU 69,71,72,
    75,76,78,79=4) (26,27,53,80=4) INTO REGION

VARIABLE LABELS REGION 'REGIONS USED IN REPORT'

VALUE LABELS 1 'SCOTLAND' 2 'NORTH OF ENGLAND' 3 'MIDLANDS 4
'LONDON AND SE ENGLAND' 5 'WALES'

FINISH
```