Institute of Education

UCL

1970 British Cohort Study

Age 46 Survey

User Guide (Version 2)

May 2023

CENTRE FOR LONGITUDINAL STUDIES

UKRI Economic and Social Research Council

Contact

Data queries: help@ukdataservice.ac.uk

Questions and feedback about this user guide: clsdata@ucl.ac.uk.

Authors

Matt Brown, Andrew Peters.

How to cite this guide

Brown, M., Peters, A. (2023) *1970 British Cohort Study: Age 46 User Guide (Version 2)*. UCL Centre for Longitudinal Studies

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This guide was published in May 2023 by the UCL Centre for Longitudinal Studies (CLS).

The Centre for Longitudinal Studies (CLS)

Centre for Longitudinal Studies

UCL Social Research Institute

University College London

20 Bedford Way, London WC1H 0AL

The UCL Centre for Longitudinal Studies (CLS) is an Economic and Social Research Council (ESRC) Resource Centre based at the UCL Social Research Institute, University College London. It manages four internationally-renowned cohort studies: the 1958 National Child Development Study, the 1970 British Cohort Study, Next Steps, and the Millennium Cohort Study. For more information, visit www.cls.ucl.ac.uk.

This document is available in alternative formats. Please contact the Centre for Longitudinal Studies:

tel: +44 (0)20 7612 6875

email: clsdata@uck.ac.uk

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About the 1970 British Cohort Study

The 1970 British Cohort Study (BCS70) is a longitudinal birth cohort study, following a nationally representative sample of over 17,000 people born in England, Scotland and Wales in a single week of 1970.

We have surveyed cohort members throughout their childhood and adult lives, mapping their individual trajectories and creating a unique resource for researchers. It is one of very few longitudinal studies following people of this generation anywhere in the world. Since 1970, cohort members have been surveyed at ages 5, 10, 16, 26, 30, 34, 38, 42 and 46.

Featuring a range of objective measures and rich self-reported data, BCS70 covers an incredible amount of ground and can be used in research on many topics

Evidence from BCS70 has illuminated important issues for our society across five decades. Key findings include how reading for pleasure matters for children's cognitive development, why grammar schools have not reduced social inequalities, and how childhood experiences can impact on mental health in mid-life.

Every day researchers from across the scientific community are using this important study to make new connections and discoveries.

BCS70 is run by the Centre for Longitudinal Studies (CLS), a research centre in the UCL Institute of Education, which is part of University College London.

BCS70 is core-funded by the Economic and Social Research Council (ESRC). The Age 46 Survey was additionally funded by the Medical Research Council and the British Heart Foundation. Fieldwork was conducted by NatCen Social Research.

This document accompanies the deposit of the data collected during the Age 46 Survey at the UK Data Service.

1. The Age 46 Survey

The aim of the Age 46 Survey was to collect key details of the cohort members' lives including their socio-economic circumstances (e.g. household composition, cohabiting relationships, housing, economic activity, and income) and their health (physical health, mental health, medication, and health behaviours). This survey had a significant biomedical focus, with objective health measurements and assessments being conducted for the first time in the cohort members' adulthood.

The Age 46 Survey involved the following elements:

- Advance paper self-completion questionnaire
- CAPI core interview (including CASI self-completion section and cognitive assessments)
- Biomeasures (height, weight, bodyfat, hip circumference, waist circumference, blood pressure, grip strength, balance, collection of blood sample)
- Accelerometry – physical activity measured for 7 days
- Online dietary questionnaire

2. Fieldwork

Full details regarding the conduct of fieldwork are provided in the BCS70 Age 46 Survey Technical Report - https://cls.ucl.ac.uk/wp-content/uploads/2019/03/BCS46_Technical-Report_FINAL.pdf. A summary of the key details are provided here.

2.1 Piloting and development

The development stages of the Age 46 Survey took place between March 2015 to July 2016 and included a pre-pilot study and a dress rehearsal.

The pre-pilot focused on evaluating the planned use of accelerometry and the online diet questionnaire and was conducted with 43 individuals aged between 41 and 51, most of whom had previously participated in the BCS70 Age 42 Survey Pilot.

The dress rehearsal was conducted with a sub-sample of BCS70 participants and sought to check the content and order of the interview, the interview length, nurse protocols and instructions and the design of survey documents. 131 interviews were achieved from an issued sample of 204 cases.

2.2 Issued sample and survey response.

A total of 12,368 cohort members were issued across the dress rehearsal and the main stage. A total of 8,450 cohort members were interviewed during main stage fieldwork between July 2016 and July 2018. Interview data from the dress rehearsal has been merged with the data collected during the main stage giving an overall total of 8,581 productive cases. The main stage response rate was 70%[1].

2.3 Fieldwork dates

Fieldwork took place between July 2016 and July 2018.

2.4 Data collection (Interviewers and Nurses)

It was initially planned that all aspects of data collection would be administered by nurses. This approach was used for the first three (of 8) waves of fieldwork but the approach was found to be problematic in terms of response rates achieved and the speed at which fieldwork was being covered. Wave 4 was used to pilot the use of interviewers and following this, from Wave 5 onwards, in England and Wales, interviewers made initial contact and conducted the interviews. Nurses then conducted follow-up visits to conduct the biomeasures, placed the accelerometer and introduced the online diet questionnaire. Lack of interviewer capacity in Scotland meant that there it was necessary to continue with the nurse-only approach throughout fieldwork. In addition, a proportion of wave 5 cases in England and Wales (called wave 5a) were issued to nurses rather than interviewers, so that fieldwork could continue whilst the new field processes were put into place.

[1] Productive interviews / (Issued sample-Ineligible cases)

3. Overview of data collection instruments

3.1 CAPI core interview

3.1.1 Content

The CAPI[2] core interview was comprised of 11 modules and lasted 50 minutes on average.

The first nine modules were administered face to face by an interviewer. Module 10 was a CASI[3] self-completion module, and module 11 was the cognitive assessments.

The CASI self-completion was administered towards the end of the core interview. The interviewer handed the laptop computer used for the interview to the cohort member and explained how they should complete the questionnaire. Where the cohort member was unable or reluctant to use the laptop, the interviewer assisted, and if necessary administered the self-completion as an interview.

A summary of the content of each core interview modules is provided below.

Overview of core interview content

Introduction	Introduction Confirmation of name, sex, date of birth etc. Whether interview through an interpreter Type of accommodation **Confirmation of contact details:** Home address Home telephone number Mobile telephone number Email address
Grids	**Cohabiting relationship grid** **Information collected about all co-habiting relationships since previous interview (up to and including current**

[2] CAPI stands for Computer Assisted Personal Interviewing
[3] CASI stand for Computer Assisted Self Interviewing

	partner): When started living together Whether male or female Age of partner when started living together Legal status of partner when moved in together Whether got married When got married When stopped living together (ex-partners only) Whether got divorced (ex-partners only) When got divorced (ex-partners only) When partner died (ex-partners only) **Child grid** **Information collected about all cohort member's children (including non-biological children):** Sex of child Date of birth Child's relationship to cohort member Whether child lives with cohort member When child started living with cohort member When child last lived with cohort member (if no longer) **Other household member grid** **Information collected about all other household members:** Sex Date of birth Relationship to cohort member When started living with cohort member When stopped living with cohort member (if no longer)
Family	**Non-cohabitating relationships:**

	Length of relationship Sex of partner **Grandchildren:** Number of grandchildren **Parents:** Whether mother is still alive Whether father is still alive Age of cohort member when mother died Age of cohort member when father died Frequency of meeting up with family members Frequency of meeting up with friends Whether anyone would be willing to listen to cohort member's problems
Housing	**Housing history:** Whether living at same address as at last interview **Details of all previous addresses:** Date of move Reasons for moving Postcode/Town/County of previous address Periods of having no fixed address **Current address:** Date moved to current address Type of accommodation (eg house, flat) Number of rooms in home Tenure Whose name accommodation is held in (if has partner)
Employment	**Economic Activity History:** **Details of all periods of economic activity:** Dates If employed: Job details to derive SOC Reason for changing job **If currently an employee:**

	Job details to derive SIC Organisation type Gross pay Net pay Hours (including overtime) Whether does shift work Whether has a zero hours contract **If self-employed:** Whether runs own business or works for others Take home income in last year Hours Whether main job involves shift work Job satisfaction Frequency of working at night between 10pm and 4am Frequency of working in the early morning between 4am and 7am **Other jobs:** Number of jobs Frequency of hours worked at other job
Partner	Current main economic activity Whether working full or part-time Whether temporarily or long-term sick or disabled
Income	Sources of income (cohort member and partner) Total take home income after tax and deductions How well cohort member is managing financially Savings and investments Debts
Education	Whether obtained any recognised qualifications since last interview Qualifications achieved in reference period **For each type of qualification:** Number of qualifications

	Grade / level Date qualification achieved Who paid fees
Health	Self-rating of general health Self-rating of general health compared to a year ago Any physical or mental health conditions or illnesses lasting or expected to last 12 months Whether illnesses/conditions reduce ability to carry out day to day activities Length of time ability to carry out day to day activities has been reduced Health problems since last interview (21 broad conditions with follow-up questions to identify specific conditions plus details of any 'other' conditions) **For each health problem:** Whether health problem diagnosed by a doctor Rose Angina Scale Whether taking any medicines **For each medication:** Name of medication Purpose of medication (if name not given) Whether used medication in last 7 days Whether respondent has any long acting medication **For each long acting medication:** Name of long-acting medication Purpose of long-acting medication (if name not given) How often respondent has long acting medication Whether respondent has taken medication in last period How many times attended hospital/clinic as out-patient Whether been in hospital/clinic as in-patient Days spent in hospital/clinic as in-patient Self-rating of dental health **Smoking:** Whether smokes (or used to smoke)

	Number of cigarettes smoked per day Age started smoking regularly Age when quit smoking Whether uses electronic cigarette Whether partner smokes (or used to smoke) **Drinking:** Type of drink consumed in last week Amount of beer drank in last week Amount of spirits drank in last week Amount of wine drank in last week Number of alcopops in last week **Diet:** Number of days per week eats breakfast **Exercise:** Number of days in a typical week does 30 mins or more of exercise **Height and weight:** Self-assessed height Self-assessed weight Cohort member's assessment of their weight (underweight to overweight) Whether trying to lose weight, gain weight or stay about the same **Sleep** Average time it takes to fall asleep Average number of hours of sleep had per night over the last 4 weeks Frequency of waking and having trouble falling back asleep in last 4 weeks Frequency of getting enough sleep to feel rested on waking in last 4 weeks Whether snores
Computer Assisted Self-Interview (CASI)	**Job demands and control** Whether has to work very fast

	Whether has to work very intensively Whether has enough time to do everything Whether learns new things through work Whether work demands a high level of skill/expertise Whether has choice in deciding how to do work Whether has choice in deciding what to do at work Whether job provides variety of interesting things Whether different groups demand different things Work life balance satisfaction Satisfaction with partner's work life balance **Partner:** Relationship satisfaction Rating of partner's health **AUDIT-PC(problematic drinking):** Frequency of having an alcoholic drink Number of alcoholic drinks consumed on a typical day when drinking Frequency of not being able to stop drinking once started over last year Frequency of failing to do what was expected due to drinking in last year Has a relative/friend/health worker been concerned about their drinking **Mental health:** Whether seen a doctor or specialist for a mental health problem (5 broad mental health symptoms and one "other" category) Whether still suffers from mental health problem Whether seen a doctor or specialist for the mental health problem in the last 12 months Details of any children who have died **Pregnancy (women only):** Unsuccessful pregnancies and terminations **Menopause (women only):** Use of contraception

	Whether has had hysterectomy or oophorectomy Age had operation (if applicable) Whether has had period or menstrual bleeding in last 12 months Reason periods have stopped (if applicable) Whether has had period in last 3 months Date of last period Whether regularity of periods has changed in last few years When change in regularity of periods was noticed Whether has experienced symptoms of menopause in the last 12 months Whether currently on HRT Whether has ever had HRT When HRT started (if applicable) Whether periods had stopped before starting HRT Date of last period before HRT **Voting behaviour and party support:** Whether voted in last general election Who voted for Number of cars or vans owned Life satisfaction Expected life satisfaction in 10 years' time
Cognitive Function	Word-list recall test (immediate and delayed) Animal naming task Letter cancellation task

3.1.2 CAPI Scales

The core interview included several established scales which are listed below. Overall scores for each scale have been derived and included within the data deposit. Further details regarding the derivation of the scores can be found in the document: BCS70 Age 46 Derived Variables User Guide.

3.1.2.1 Disability and impairments

The Age 46 Survey included a sub-set of the ONS harmonised set of questions on impairments. The three items listed below are used to derive variables indicating whether cohort members are disabled using the Equality Act 2010 definition (BD10DISEQ) and whether they have a long-standing illness or condition using the European Union's Statistics on Income and Living Conditions (EU-SILC) definition (BD10DISLS) (ONS, 2011). BD10DISEQ simply identifies individuals as disabled or not, BD9DISLS identifies individuals as having no long-standing health condition, having a condition which hampers daily activities to an extent and having a condition which severely hampers daily activities.

Variable name	**Variable label**
B10PLOIL	Any physical/mental health conditions lasting or expected to last 12 months
B10PLOLM	Whether illnesses/conditions reduce ability to carry out day to day activities
B10PLOLP	Length of time ability to carry out day to day activities has been reduced
BD10DISEQ	**(Derived) Disability classification Equality act (2010)**
BD10DISLS	**(Derived) Disability classification EU-SILC**

3.1.2.2 AUDIT-PC (Alcohol Use Disorders Identification Test - Primary Care Version)

The AUDIT-PC consists of 5 questions covering alcohol consumption, problems and dependency. Responses to each question are scored from 0 to 4 giving a maximum score of 20 (BD10AUDIT). Scores of 5 or more are considered AUDIT-PC positive and associated with increasing or higher risk drinking (BD10AUDG). The AUDIT-PC was included in the BCS70 Age 42 Survey and is an abbreviated version of the full AUDIT scale included in the Age 50 follow-up of NCDS (Babor et al., 2001).

Variable name	Variable label
B10DRKFQ	Frequency of having an alcoholic drink
B10DRKDY	Number of alcoholic drinks consumed on a typical day when drinking
B10DRKST	Frequency of not being able to stop drinking once started over last year
B10DRKFL	Frequency of failing to do what was expected due to drinking in last year
B10DRKWR	Has a relative/friend/health worker been concerned about their drinking
BD10AUDIT	**(Derived) Total AUDIT-PC Score**
BD10AUDG	**(Derived) AUDIT-PC Group**

3.1.2.3 Rose Angina Questionnaire

At the 2016 sweep respondents were asked a series of questions about experiencing chest pain which form the rose angina questionnaire. BD10SYMPAN1 has been derived from these to identify symptoms of angina (Rose, 1962).

Variable name	Variable label
B10HEANA	Whether respondent has chest pain
B10HEANI1	Where respondent has chest pain (other spec): Sternum
B10HEANI2	Where respondent has chest pain (other spec): Sternum
B10HEANI3	Where respondent has chest pain (other spec): Left anterior
B10HEANI4	Where respondent has chest pain (other spec): Left arm
B10HEANB	Whether gets chest pain when walking up hill/in a hurry
B10HEANC	Whether chest pain when walking on level
B10HEANG	Whether pain goes away when standing still
B10HEANH	How long the pain lasts for
BD10SYMPAN1	**(Derived) Angina symptoms (Rose Angina Qure)**

3.1.3 Cognitive assessments

The cognitive assessment module was comprised of four tests as described below. Variable names and variable labels are provided for reference.

3.1.3.1 Word list recall

A test of verbal learning and recall was included where participants were required to learn a list of 10 common words. The CAPI program randomly selected one of four lists of words which were presented to the respondent by the computer using a recorded voice. In cases where the computer voice was not audible the list was read aloud by the interviewer, who was asked to imitate the pace and clarity of the recorded voice, reading the words at approximately 2 second intervals.

Once the list had been read out, cohort members had up to two minutes to recall as many as they could. Interviewers made a note of each word correctly recalled and entered the total into the CAPI program.

Variable name	Variable label
B10CFLISN	Immediate word list recall – number of words recalled (0-10)

3.1.3.2 Animal naming

The second cognitive test was a test of verbal fluency which measured how quickly participants could think of words from a particular category, in this case naming as many different animals as possible within one minute. Interviewers made a note of each named animal and entered the total into the CAPI program. Repetitions, named animals (e.g. Bambi) and redundancies (e.g. white cow, brown cow) were excluded from the total score.

Variable name	Variable label
B10CFANI	Animal naming test – number of animals named within one minute

3.1.3.3 Letter cancellation

The letter cancellation test measures attention, mental speed and visual scanning. Participants were given a page of random letters of the alphabet and asked to cross out as many “Ps” and “Ws” as possible within one minute. Two scores were calculated: speed and accuracy. The ‘speed’ score was measured by the total number of letters scanned, the ‘accuracy’ score was measured by the number of Ps and Ws which were scanned but missed.

Variable name	Variable label

B10CFRC	Letter cancellation – speed score (number of letters scanned)
B10CFMIS	Letter cancellation – accuracy score (number of Ps and Ws missed)

3.1.3.4 Delayed word list recall

The final test was a test of delayed memory which asked the participant to recall as many words as they could from the original list presented to them during the first word-recall task. The word lists were not repeated and participants had again two minutes to recall as many as they could. Interviewers made a note of each word correctly recalled and entered the total into the CAPI program.

Variable name	**Variable label**
B10CFLISD	Delayed word list recall – number of words recalled (0-10)

3.1.3.5 Comparability of cognitive assessments with other studies

The same set of cognitive assessments were included in the National Child Development Study Age 50 Survey and interviewers/nurses followed exactly the same procedures when conducting the tests. The assessments have also been included in the English Longitudinal Study of Ageing (http://www.ifs.org.uk/elsa/), again using the same procedures.

Word-list recall exercises and the letter cancellation task have also been included in the 1946 cohort study (the National Survey of Health and Development) (http://www.nshd.mrc.ac.uk/). There are however a number of small differences in protocol which will have an impact on the comparability of results:

- The word list recall exercise asks 1946 cohort members to recall 15 words, whereas BCS70 (and NCDS/ELSA) ask respondents to recall 10 words.
- In the 1946 study word list recall exercise the words are shown to the respondent in a flip book (at intervals of two seconds) whereas in the BCS70 (and NCDS/ELSA) exercise the words are read to the respondent by the computer (unless respondent unable to hear well in which case the words are read by interviewer). A person's ability to recall words which they have read may differ from their ability to recall words which they have heard spoken.

- In the 1946 study, respondents are asked to recall the words on 3 occasions, whereas BCS70 (and NCDS/ELSA) respondents are only asked to recall the words twice. On the 1946 study, once the word-list recall task has been completed for the first time it is immediately repeated a second time whereas on ELSA the task is only completed once at first. Each of the studies then include a delayed word-list recall exercise but the 1946 respondents will be at an advantage as they will have had an extra opportunity to commit the words to memory.
- 1946 cohort members are given one task between the original word list recall exercise and the delayed word-list recall exercise (the letter-cancellation task) whereas BCS70 (and NCDS/ELSA) respondents are given two tasks (the letter-cancellation exercise and the animal naming exercise).

The word-list recall exercises (immediate and delayed) have been included in the Health and Retirement Study (HRS) (http://hrsonline.isr.umich.edu/). The protocols followed by interviewers working on the HRS were exactly the same as those working on BCS70, NCDS and ELSA, meaning the data collected by each of the studies will be comparable, although in HRS the time used between the immediate and delayed recall tasks was used differently.

3.2 Advance paper self-completion

3.2.1 Content

An overview of the content of the advance paper self-completion questionnaire is provided below:

Overview of content of advance paper self-completion questionnaire

Paper self-completion	**Warwick-Edinburgh Mental Wellbeing Scale:** A series of questions to measure wellbeing at a population level focusing on positive feelings. **SF-36 scale:** Physical functioning, role limitations due to physical health, role limitations due to emotional problems, energy/fatigue, emotional well-being, social functioning, pain, general health **Modified Cambridge EPIC physical activity questionnaire full scale:** A series of questions asking about physical activity in everyday life **Social participation:** Whether a member of a range of social groups (eg political parties, neighbourhood watch, evening classes, gym classes) Frequency of participation **Malaise scale:** A series of questions designed to detect levels of emotional disturbance, well-being and stress

3.2.2 Paper-self-completion scales

3.2.2.1 Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)

WEMWBS is a 14 positively worded item scale with five response categories. It covers most aspects of positive mental health (positive thoughts and feelings) including both hedonic and eudaimonic perspectives (Tennant et al, 2007). Scores range between 14 and 70 and higher scores indicate higher levels of well-being.

Variable name	Variable label
B10Q1A	WEMWB: Past 2 weeks how often CM felt optimistic about the future
B10Q1B	WEMWB: Past 2 weeks how often CM felt useful
B10Q1C	WEMWB: Past 2 weeks how often CM felt relaxed
B10Q1D	WEMWB: Past 2 weeks how often CM felt interested in other people
B10Q1E	WEMWB: Past 2 weeks how often CM had energy to spare
B10Q1F	WEMWB: Past 2 weeks how often CM been dealing with problems well
B10Q1G	WEMWB: Past 2 weeks how often CM been thinking clearly
B10Q1H	WEMWB: Past 2 weeks how often CM been feeling good about myself
B10Q1I	WEMWB: Past 2 weeks how often CM been feeling close to other people
B10Q1J	WEMWB: Past 2 weeks how often CM been feeling confident
B10Q1K	WEMWB: Past 2 weeks how often CM been able to make up own mind about things
B10Q1L	WEMWB: Past 2 weeks how often CM been feeling loved
B10Q1M	WEMWB: Past 2 weeks how often CM been interested in new things
B10Q1N	WEMWB: Past 2 weeks how often CM been feeling cheerful
BD10WEMWB	**(Derived) Warwick Edinburgh Mental Well-Being Scale**

3.2.2.2 Malaise inventory

Earlier sweeps of the study have included a set of 24 self-completion questions which combine to measure levels of psychological distress, or depression (Rutter et al, 1970). As per the Age 42 Survey, the Age 46 Survey used 9 of the original 24 items.

Variable name	Variable label
B10Q28A	Feelings: Do you feel tired most of the time?
B10Q28B	Feelings: Do you often feel miserable or depressed?
B10Q28C	Feelings: Do you often get worried about things?
B10Q28D	Feelings: Do you often get in a violent rage?

B10Q28E	Feelings: Do you often suddenly become scared for no good reason?
B10Q28F	Feelings: Are you easily upset or irritated?
B10Q28G	Feelings: Are you constantly keyed up and jittery?
B10Q28H	Feelings: Does every little thing get on your nerves and wear you out?
B10Q28I	Feelings: Does your heart often race like mad?
BD10MAL	**(Derived) Total Malaise score (9 questions)**
BD10MALG	**(Derived) Total Malaise score – grouped**

3.2.2.3 SF-36

SF-36 is a widely used multi-purpose health survey comprised of 36 questions. It yields an 9-scale profile of functional health and well-being scores as well as psychometrically-based physical and mental health summary measures and a preference-based health utility index (Ware et al, 1993).

Each of the 9 scales are scored between 0 and 100 with higher scores indicating higher levels of health.

Variable name	**Variable label**
B10Q2A	How CM's health limits: Vigorous activities (running, lifting heavy objects)
B10Q2B	How CM's health limits: Moderate activities (pushing vacuum, bowling, golf)
B10Q2C	How CM's health limits: Lifting or carrying groceries
B10Q2D	How CM's health limits: Climbing several flights of stairs
B10Q2E	How CM's health limits: Climbing one flight of stairs
B10Q2F	How CM's health limits: Bending, kneeling or stooping
B10Q2G	How CM's health limits: Walking more than one mile
B10Q2H	How CM's health limits: Walking half a mile
B10Q2I	How CM's health limits: Walking 100 yards
B10Q2J	How CM's health limits: Bathing or dressing self
BD10PHHE	**(Derived) SF-36 Physical functioning score**
B10Q3A	Past 4 weeks CM's phys health: cut down time spent on work/other activities

B10Q3B	Past 4 weeks CM's phys health: limited the kind of work/activities able to do
B10Q3C	Past 4 weeks CM's phys health: meant they accomplished less than would like to
B10Q3D	Past 4 weeks CM's phys health: meant had difficulty performing work/activities
BD10RLMP	**(Derived) SF-36 Role-limitations due to physical health**
B10Q4A	Past 4 weeks CM's emo probs: cut down time spent on work/other activities
B10Q4B	Past 4 weeks CM's emo probs: meant they accomplished less than would like to
B10Q4C	Past 4 weeks CM's emo probs: meant not done work/activities carefully as usual
BD10RLME	**(Derived) SF-36 Role-limitations due to emotional problems**
B10Q8A	Past 4 weeks how much time CM: felt full of life
B10Q8E	Past 4 weeks how much time CM: had a lot of energy
B10Q8G	Past 4 weeks how much time CM: felt worn out
B10Q8I	Past 4 weeks how much time CM: felt tired
BD10ENFA	**(Derived) SF-36 Energy/fatigue score**
B10Q8B	Past 4 weeks how much time CM: been a very nervous person
B10Q8C	Past 4 weeks how much time CM: felt so down nothing could cheer them up
B10Q8D	Past 4 weeks how much time CM: felt calm and cheerful
B10Q8F	Past 4 weeks how much time CM: felt downhearted and low
B10Q8H	Past 4 weeks how much time CM: been a happy person
BD10EMWB	**(Derived) SF-36 Emotional Well-Being score**
B10Q5	Past 4 weeks extent CM's phys or emo probs interfered with social activities
B10Q8J	Past 4 weeks how much time CM: health limited social activities
BD10SOCF	**(Derived) SF-36 Social Functioning score**
B10Q6	Past 4 weeks how much bodily pain CM has had
B10Q7	Past 4 weeks how much did pain interfere with CM's normal work in/out of home
BD10PAIN	**(Derived) SF-36 Pain score**
B10HLTHGN	General state of health

B10Q9A	Whether CM feels: they seem to get ill a little easier than other people
B10Q9B	Whether CM feels: they are as healthy as anybody they know
B10Q9C	Whether CM feels: they expect their health to get worse
B10Q9D	Whether CM feels: their health is excellent
BD10GENH	**(Derived) General health score**
B10KHLSTT	General health compared to one year ago
BD10RPHT	**(Derived) Reported health transition**

3.3 Biomeasures

The biomeasures were obtained in a nurse visit that lasted 50 minutes on average. Nurses recorded results and contextual information about each measurement in their CAPI laptop.

Overview of content of nurse visit

Nurse visit	Anthropometry: Height, weight, body-fat, waist/hip circumference
	Medication coding
	Blood pressure
	Grip strength
	Leg raise
	Collection of blood sample
	Placement of accelerometer
	Placement of online diet questionnaire

A summary of each measurement and associated key variables is provided below. Full protocols for all measurements can be found in Appendix B of the Technical Report.

3.3.1 Anthropometry

Height is measured in centimetres using a portable Leicester stadiometer. Participants are asked to remove shoes and loosen hair accessories. The nurse positions the participants' head in the Frankfort Plane before lowering the

stadiometer's head plate. The measurement is taken to the nearest even millimetre. Participants also self-reported their height.

Weight is measured in kilograms using Tanita BF - 522W scales. The scales can accurately measure up to 130 kilograms and those whose weight likely exceeded this were not weighed. Body fat percentage is the total weight of the person's fat divided by the person's weight and is measured using the same scales by sending a weak electrical current around the body from one foot to the other. Respondent's age, gender and height is entered into the scales prior to measurement, so as to ensure the accuracy of the body fat measurements4. Participants also self-reported their weight. ensure the accuracy of the body fat measurements5. Participants also self-reported their weight.

Body Mass Index (body mass divided by the square of body height) has been derived based both on objective measures of height and weight and also self-reports.

Waist and hip measurements were taken using a SECA tape measure. Measurements are taken to the nearest even millimetre. A first measure of waist circumference is taken followed by a first measurement of hip circumference. Second measures of each are taken. If the first and second measurements of either waist or hip circumference differed by 3 cm or more a third measurement was taken.

Variable name	**Variable label**
B10HEIGHTCM	Respondent's height (cm) - nurse measurement
BD10HGHTM	(Derived) Self-reported height in metres
BD10MWGTK	(Derived) Nurse measured weight in kilograms (all measured)
BD10WGHTK	(Derived) Self-reported weight in kilograms
BD10BMI	(Derived) Body mass index (based on self-reported data)
BD10MBMI	(Derived) Body mass index (based on nurse measurement)

[4] Nurses were also required to enter body type into the TANITA scales – normal or athletic. Nurses entered 'normal' in all cases.
[5] Nurses were also required to enter body type into the TANITA scales – normal or athletic. Nurses entered 'normal' in all cases.

BD10BMIC	(Derived) Body mass index - classification (based on self-reported data)
BD10MBMIC	(Derived) Body mass index - classification (based on nurse measurement)
B10BFPC	Body fat percentage measurement
B10WHWST1	First waist measurement: Waist measurement
B10WHWST2	Second waist measurement: Waist measurement
B10WHWST3	Third waist measurement: Waist measurement
B10WHHIP1	First hip measurement: Hip measurements
B10WHHIP2	Second hip measurement: Hip measurements
B10WHHIP3	Third hip measurement: Hip measurements
B10WAISTCT	(Derived in CAPI) Number of valid waist measurements.
B10WAISTAV	(Derived in CAPI) Average waist measurement.
B10HIPCT	(Derived in CAPI) Number of valid hip measurements.
B10HIPAV	(Derived in CAPI) Average hip measurement.

3.3.2 Medication coding

Participants were asked ‘Are you taking or using any medicines, pills, syrups, ointments, puffers or injections prescribed for you by a doctor or nurse?’ and also about any long-acting medications. The name of each medication was recorded and where possible nurses asked to see the medication packaging to increase accuracy.

Nurses then coded each medication to sub-chapter level (4 digits) of the British National Formulary (BNF) edition 69 (see Appendix Table 1). To ensure accurate coding, for some types of medication nurses needed to know the purpose of the medication e.g. aspirin which could be taken for a variety of reasons including pain relief and prevention of CVD. Drug-coding usually took place during the period when participants were resting prior to blood pressure being measured.

3.3.3 Blood Pressure

Seated blood pressure is measured using an Omron HEM 907 blood pressure monitor. The nurse fits a cuff of the appropriate size (standard or large) to the respondent’s right arm (where possible) and the respondent then rests for 5 minutes.

Three measurements of diastolic blood pressure, systolic blood pressure and pulse are then taken at one minute intervals.

Variable name	Variable label
B10BPSYSR1	First systolic blood pressure reading (mmHg)
B10BPDIAR1	First diastolic blood pressure reading (mmHg)
B10BPPLSR1	First pulse reading (bpm)
B10BPSYSR2	Second systolic blood pressure reading (mmHg)
B10BPDIAR2	Second diastolic blood pressure reading (mmHg)
B10BPPLSR2	Second pulse reading (bpm)
B10BPSYSR3	Third systolic blood pressure reading (mmHg)
B10BPDIAR3	Third diastolic blood pressure reading (mmHg)
B10BPPLSR3	Third pulse reading (bpm)

3.3.4 Grip Strength

Grip strength is measured in kilograms using a Smedley spring-gauge dynamometer. The dynamometer is adjusted to fit the participant's hand. The measurement is taken while the participant is standing. Respondents must squeeze the dynamometer as hard as they can. Three measurements are taken in each hand, starting with the non-dominant hand and alternating between hands. A single practice can be conducted with the dominant hand before the measurements begin.

Variable name	Variable label
B10MMGSN1	Non-dominant hand, first measurement
B10MMGSD1	Dominant hand, first measurement
B10MMGSN2	Non-dominant hand, second measurement
B10MMGSD2	Dominant hand, second measurement
B10MMGSN3	Non-dominant hand, third measurement
B10MMGSD3	Dominant hand, third measurement
BD10MMGSNV	(Derived) Average grip strength- Non-dominant hand
BD10MMGSDV	(Derived) Average grip strength- Dominant hand

3.3.5 Leg raise

Respondents are asked to raise one foot off the ground a few inches and balance on their other leg. Respondents can choose which leg they wish to balance on. They are first asked to attempt this with their eyes open. They are asked to hold the position as long as possible up to a maximum of 30 seconds. If respondents successfully balanced for 30 seconds with their eyes open they are asked to repeat the exercise with their eyes closed. While balancing they may use their arms, bend their knee, or move their body to maintain their balance, but must not move their standing foot.

Variable name	**Variable label**
B10MMLORE	Outcome of leg raise (eyes open)
B10MMLOTI	Number of seconds leg was raised (eyes open) - if less than 30
B10MMLSRE	Outcome of leg raise test (eyes closed)
B10MMLSTI	Number of seconds leg was raised (eyes closed) - if less than 30

3.3.6 Collection of blood sample

If consent was provided, nurses collected three tubes of blood (2 EDTA and 1 Serum) using standard venepuncture. Participants were not required to be in a fasted state as nurses made visits at any time in the day. The serum tube and one EDTA tube was posted to RVI laboratory in Newcastle who conducted a range of assays (described below). The second EDTA tube was posted to the Bristol Bioresource Laboratory (BBL) at University of Bristol where it was centrifuged to separate the plasma. Up to 5 aliquots of plasma have been frozen and stored at BBL for future use. Buffy coats were extracted and stored by BBL for future DNA extraction.

Assays of cholesterol (total and HDL) and glycated haemoglobin (Hba1C) were conducted throughout fieldwork. Additional funding obtained mid-way through fieldwork allowed the number of assays conducted to be increased such that blood collected in the latter half of fieldwork was also analysed for triglycerides, insulin-like growth factor 1, ferritin, cytomegalovirus (CMV) and red blood cell count. A positive CMV IgG result indicates a CMV infection at some point in time, while a negative CMV IgG indicates that the participant has never been exposed to, or been infected

with, CMV. A positive Immunoglobulin M (IgM) indicates a recent or current infection. Indeterminate CMV occurs during current or acute infection or may be due to non-specific binding. For those people who had a positive IgM test or whose result was indeterminate, an additional test (CMV avidity) was performed to confirm recent CMV infection.

Variable name	Variable label
B10CHOL	Total cholesterol (mmol/L)
B10HDL	HDL cholesterol (mmol/L)
B10HBA1C	Glycated haemoglobin (mmol/mol)
B10TRIG	Triglycerides (mmol/L)
B10IGF1	Insulin-like growth factor 1 (IDS Method) (nmol/L)
B10RTIN	Ferritin (ug/L)
B10USCMG	CMV IgG result
B10USCMM	CMV IgM result
B10CMVAVC	CMV avidity result
B10RBC	Red Blood Cell count g/L

Methods used to conduct blood assays at RVI, Newcastle

Assay	Method principle	Manufacturer
Cholesterol(Total)	Enzymatic colourimetric: cholesterol esterase/cholesterol oxidase/peroxidase	Roche Cobas c702, generation 2 assay
HDL Cholesterol	Enzymatic colourimetric: dextran sulphate/PEG-cholesterol esterase/PEG-cholesterol oxidase/peroxidase	Roche Cobas c702, generation 3 assay
HbA1c	Ion exchange HPLC	Tosoh G8
C Reactive Protein (High Sens)	Immunoturbidimetry	Roche Cobas c702
Insulin-like growth factor 1	Chemiluminescence sandwich immunoassay	IDS iSYS
Ferritin	Electrochemiluminescence sandwich immunoassay	Roche Cobas e602, generation 4 assay
Triglycerides	Enzymatic colourimetric: lipoprotein lipase/glycerol	Roche Cobas c702

	kinase/glycerol phosphate oxidase/peroxidase	
CMV IgG	Electrochemiluminescence immunoassay	Roche Cobas e602
CMV IgM	Electrochemiluminescence immunoassay	Roche Cobas e602
Red blood cell (RBC) count	Impedance count	Sysmex XN
CMV Avidity Confirmation	Enzyme linked fluorescence	bioMérieux Vidas

Internal Quality Control (IQC) was carried out to ensure the reliability of each analytical run. For each analyte the laboratory used quality control materials at more than one concentration. The coefficient of variation (CV), a measure of precision, is used to assess the reliability of each analytical run. The mean concentration range for each analyte along with the %CV range are presented in the table below. Note that mean concentration ranges are used as the quality control material changed throughout the fieldwork period

Coefficients of variation (CVs) for each assay at different mean concentration ranges

Assay	**Mean concentration range**	**%CV range**
Total cholesterol	3.10-3.64	0.8-2.6
Total cholesterol	6.56-7.47	0.7-2.1
HDL cholesterol	1.44-1.79	0.9-2.6
HDL cholesterol	2.57-3.16	0.7-2.8
HbA1c	31.4-35.1	1.7-3.3
HbA1c	77.6-82.7	0.6-1.4
Triglycerides	1.37-1.59	1.3-2.4
Triglycerides	3.53-4.00	0.8-2.1
HS-CRP	0.91-1.27	5.1-10.5
HS-CRP	5.36-5.89	2.3-5.7
IGF-1	3.73-8.09	2.7-15.1
IGF-1	29.09-32.84	1.2-4.6
IGF-1	94.24-121.34	1.9-4.2
Ferritin	19.3-21.31	1.7-4.9

Ferritin	395.57-433.34	1.5-4.2
CMV IgG	1.236-1.450	2.3-9.4
CMV IgG	22.420-26.320	2.0-9.7
CMV IgM	0.168-0.212	1.6-9.4
CMV IgM	2.214-25.160	2.7-8.9
RBC	2.270-2.370	0.7-1.8
RBC	4.480-4.240	0.6-2.1
RBC	5.080-5.440	0.6-1.5

3.4 Online diet questionnaire

During the nurse visit, cohort members were asked by the nurse to complete an online dietary questionnaire about two randomly selected days, one weekday and one weekend day, over the seven day period following their nurse visit. The questionnaire used was the Oxford WebQ (Liu et al, 2011) developed by the Cancer Epidemiology Unit at the University of Oxford.

The Oxford WebQ asks about consumption of 206 foods and 32 beverages during the previous 24 hours. The quantity of each food or drink consumed during the reference period is calculated by multiplying the assigned portion of each food or beverage by the amount consumed.

The Oxford WebQ was developed for repeated implementation in large prospective studies and has been used in the UK Biobank and the Million Women Study.

The online questionnaire was hosted by the University of Oxford. Cohort members were provided with a leaflet containing a link to the questionnaire and a unique login code.

At the time of data collection, nutritional intake variables were derived in the Oxford WebQ using the food composition table from the UK McCance and Widdowson's "The Composition of Foods 6th edition (2002) and its supplements. Variables derived using this approach can be found in dataset bcs_age46_dietary_questionnaire.

The Oxford WebQ has subsequently updated its approach to deriving nutritional intake variables and now uses the food composition table from the UK Nutrient Databank (UKNDB) (2013), which provides more recent food composition data. Data in the UKNDB are very similar to the UK McCance and Widdowson's food composition table but includes a larger range of processed foods and composite dishes. In addition, missing values have been reviewed and replaced with plausible values. Other changes have also been applied including some changes in portion sizes, personalisation of fats used in cooking, and updates to the underlying program code for the nutrient calculation. New dietary variables such as energy density, and animal and plant fats and proteins, have also been incorporated. Variables derived using this approach can be found in dataset bcs_age46_nutrients.

Researchers are recommended to use the newly derived variables as they are considered more accurate. However, it should be noted a small number of records from the original dietary data were not analysed using this method so are unavailable in this dataset. Six cases are absent entirely and four further cases are missing individual days recorded in the dietary questionnaire.

The Oxford WebQ is currently being administered in the NCDS Age 62 Survey and the BCS70 Age 50 Survey – and derived nutritional intake variables will only be created using this new method.

Perez-Cornago, A (2021) provide an account of the development of the new derivation method and describe the differences between the old and new approach. Derived nutritional intake variables are listed in Appendix 2.

3.5 Accelerometry

At the end of the nurse visit, participants were asked to wear an activPAL device on their thigh for the seven days following their nurse visit. Devices were placed by nurses at the end of the nurse visit and fixed to the thigh using a medical dressing. The activPal device measures physical activity and time spent in different sedentary postures (standing, sitting, lying) (Grant et al, 2006). Devices were water-proofed to allow for continuous wear.

Cohort members were asked to complete a sleep diary for each day that they wore the monitor. The diary recorded some key information including the time they went to bed, the time they woke up, and how many times they got up in the night.

The activPAL data is deposited separately at the UK Data Service (SN 8611): https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=8611#!/details and a separate User Guide is available:

4. Age 46 Survey Research Data

4.1 Licensing and data access

All datasets are available from the UK Data Service (UKDS).

All users of the data need to be registered with the UKDS. Details of how to do this are available at https://www.ukdataservice.ac.uk/get-data/how-to-access/registration.

The majority of the BCS70 Age 46 survey data are available as safeguarded data at the UKDS. These datasets can be downloaded once the End User Licence access conditions have been accepted by the user.

Due to the sensitive and potentially disclosivity nature of some BCS70 data, detailed responses on child mortality and unwanted pregnancies are now available as controlled data via the UKD SecureLab, which governed by the under the UKDS Secure Access licence. This deposit will contain sensitive variables across all past and future sweeps of BCS70.

All users of the data need to be registered with the UKDS. Details of how to do this are available at https://www.ukdataservice.ac.uk/get-data/how-to-access/registration.

Access to the UKDS SecureLab can take place via the researcher's own institutional desktop PC, using a Safe Pod or at the Safe Room at the UK Data Archive. Applicants wishing to access this data need to abide by the terms and conditions of the UKDS Secure Access licence. Before gaining access, researchers must make an application detailing the intended analysis and provide a justification as to why this data is requested. Application guidance can be found at https://ukdataservice.ac.uk/find-data/access-conditions/secure-application-requirements/apply-to-access-non-ons-data/

Information about the variable names, labelling of variables and about CASI variables, vocabulary test variables, paper self-completion variables, identifiers and derived variables is given below. Information about the variable names, labelling of variables and about CASI variables, vocabulary test variables, paper self-completion variables, identifiers and derived variables is given below.

4.2 Datasets

The Age 46 Survey deposit currently consists of the following 14 datasets. The majority of the data is provided in bcs_age46_main which is a wide format file with one record per case. The remaining research datasets are all hierarchical files which may include multiple records per case. Datasets are End User Licence unless specified otherwise.

Dataset name	Dataset contents	Format
bcs_age46_main	The majority of the core interview, paper-self-completion and nurse administered measurements.	Wide
bcs_age46_relationships	Relationship histories since last sweep / 2004	Hierarchical
bcs_age46_persongrid	Details of persons living with respondent (past and present) and absent children	Hierarchical
bcs_age46_housing	Housing histories since last sweep / 2008	Hierarchical
bcs_age46_employment	Employment histories since last sweep / 2008	Hierarchical
bcs_age46_qualifications	Details of each qualification recorded by respondent	Hierarchical
bcs_age46_medication	BNF codes for medication prescribed by doctor/nurse	Hierarchical
bcs_age46_long_acting_medication	BNF codes for long-acting medication (e.g. injections/implants) prescribed by doctor/nurse	Hierarchical
bcs_age46_dietary_questionnaire	Details of food/drinks/supplements consumed on a particular day(s) and calculated nutritional data	Hierarchical
bcs_age46_nutrients	Updated nutrient data derived from the dietary questionnaire, calculated across 93 food groups	Hierarchical
bcs_age46_unfolding	Data relating to a series of questions which aim to get an approximate answer to income and payment questions where participants are unable or unwilling to answer precisely.	Wide
bcs_age46_child_died (Secure Access)	Details of any children of the respondent, born alive but since died and not already recorded in the person grids	Hierarchical
bcs_age46_unsucessful_pregnancies (Secure Access)	Details of any pregnancies which resulted in a still-birth, miscarriage or termination (female respondents only)	Hierarchical
bcs_age46_geographical_identifiers (Secure Access)	A series of geographical variables derived from respondent postcode	Wide

Section 5.3 describes the structure of all datasets.

4.3 Identifiers

All datasets are primarily identified with the same research identifier (BCSID) used for all BCS70 cohort data available at the UKDS.

4.4 Hierarchical datasets

The main survey dataset (bcs_age46_main) contains data in wide format, i.e., one row per participant. All other data files are hierarchical (long format) in nature as they may have more than one record for each cohort member, or loops.

Each hierarchical dataset contains a 'record number' variable, which is unique within each case. The main survey dataset will contain responses to questions that initiate entry of the loop and, if it suits the data, the current status of the respondent.

4.4.1 Housing, relationships and employment

Housing, relationships and employment loops are only populated in the event of change in circumstance/status. If someone declares they have been in the same residence/relationship/job continuously since the last time they were interviewed (B10TENCK, B10SNGLCK, B10NRANY2, B10CJCONT), then their current status will be checked and then only recorded in the main survey file. Conversely, those whose situation has changed will be asked about each change until their current status is recorded, which is also added to the current data in the main survey file. In these cases, loops are also entered if the respondent has not been interviewed in the last 3 sweeps.

4.4.2 Person grid

The person grid is comprised of five separate loops within the CAPI questionnaire; partner grid, two child grids (children reported at last sweep and additional children not previously mentioned), and two 'other' household members grids (household members that are not partners or children reported at last sweep and anyone not reported in the four other grids). Together these cover all possible household members at the time of interview as well as previous household members who have since left. In order to obtain all the same key information these loops are structurally

similar. The information is supplemented with feed-forward information from prior sweeps where questions were unasked.

4.4.3 Medication

B10MEDCN (whether taking any medicines) and B10MEDLN (whether taking long-acting medication) facilitate entry to the loops in the bcs_age46_medication and bcs_age46_long_acting_medication datasets respectively. It was necessary to split the information into two files as they correspond to different loops in the questionnaire and have different variables.

4.4.4 Online dietary questionnaire

The online dietary questionnaire, 'bcs_age46_dietary_questionnaire' could be completed more than once so has multiple records for many participants who have data for multiple days.

The derived 'bcs_age46_nutrients' data includes a row for each distinct food group, of which there are 93, and a row containing cumulative total of all food consumed, for each recorded day in the diary per respondent. In order to make the data more manageable, the deposited data only includes rows with values above 0. Variable 'dietno' can be used to match corresponding days in both diet diary datasets.

4.4.5 Qualifications

Qualifications (bcs_age46_qualifications) are recorded as one row for each awarded qualification

4.4.6 Secure access data

The 'bcs_age46_unsucessful_pregnancies' dataset includes 1 record for each pregnancy to match the response to CAPI question PREGMANY ('bcs_age46_main' variable B10PGSBMY, number of pregnancies resulting in a still birth etc).

'bcs_age46_child_died' is entered from B10DCHMNY (number of children that have died) and has one record for each child.

4.5 Variable description

4.5.1 Variable order

The order in which variables appear in the datasets broadly follows the order of sections, and of questions within sections, of the survey instruments. However, due to the repeating loop nature of some sections of the survey instruments, for example 'pregnancies leading to stillbirths' and 'qualifications', the order is determined by the structure of the CAPI program, which does not necessarily hold each question in the order in which they are put to the respondent. As a result, a number of variables have been re-ordered so similar variables are together.

4.5.2 Variable names

The variable names are based on those used in the CAPI program and are documented in the questionnaire and self-completion questionnaire documentation. The variable names are all prefixed by 'B10'. For ease of tracking variables longitudinally, other than the prefix, variable names are consistent with those used the prior sweep (where the prefix was B9). To facilitate matching between dataset variables and CAPI questions, a variable lookup excel spreadsheet has been included in the deposit (bcs_2016_variable_lookup_table.xlsx).

Variables from the paper self-completion questionnaire have names derived from the question numbers as they appear on the printed questionnaire and prefixed with "B10Q". They have the following form: B10Q1A, B10Q1B, B10Q1C etc. These variables are included in the dataset 'bcs_age46_main'.

4.5.3 Variable labels

The variable labels included in the dataset are based on the question wording that can be found in the core interview and self-completion questionnaire documentation. Where necessary, labels have been modified in an effort to ensure they are comprehensible and accurate.

In situations where the respondent's details from the last interview/sweep were missing or incorrect (confirmed by the respondent through checks), they were asked by the interviewer to provide or correct this information. The labels for variables containing this information all begin 'Incorrect/missing data from last int'. These

variables only contain data for a small amount of cases and as such should not be used on their own, but with equivalent variables from the previous sweep.

A number of variables were automatically derived in the CAPI. Usually this was for processes and checks, but those containing useful information have been included in these data. These variables derived within the CAPI program all have '(Derived in CAPI)' in their labels to identify them. These are distinct from the main set of derived variables, which have labels simply beginning with '(Derived)'. For more information on this main set of derived variables see section 5.12.

4.5.4 Value labels

The value labels are similarly based on question as documented in the core interview and self-completion questionnaire documentation. Value labels have been individually reviewed and amended, where necessary.

4.5.5 Missing values

Missing values are consistently labelled as follows (unless otherwise stated):

-9 = Refusal

-8 = Don't Know

-1 = Item not applicable

For derived variables -8 is typically reserved for 'Not codeable' values, where there is insufficient data for the variable to be derived.

4.6 Dress rehearsal data

The deposited datasets include data for cases interviewed at both the main stage and dress rehearsal data collection. Variable B10MAINDR in dataset 'bcs_age46_main' is set to 1 for main stage cases and 2 for dress rehearsal cases.

The deposited datasets include data for 131 cases interviewed as part of the dress rehearsal.

4.7 CASI Self-completion

The CASI self-completion was administered towards the end of the core interview. The labels of variables which hold the data from the CASI self-completion are all prefixed by 'CASI:'.

4.8 Paper self-completion

The variables which hold the data for the paper self-completion questionnaire are distinguished from CAPI and CASI variables by the question number appearing in the variable name (e.g. B10Q1A).

4.9 Relationship histories

The relationship history module sought to collect a complete record of all cohabiting relationships within the appropriate reference period. It should be noted that researchers wishing to examine cohort members' relationships are advised to use the BCS70 Partnership Histories dataset deposited at the UK Data Archive. This dataset currently contains data for the cohort members' partnerships for the period 1974 to 2012 and will be updated soon to include partnerships collected up to the Age 46 Survey.

The deposit dataset 'bcs_age46_relationships' contains 1 record for each period of cohabitation reported by the cohort member in the relationship history loop in the questionnaire (CAPI questions NRANY to CRDIVWH). The first question, NRANY, asks whether they have lived with anyone else since the last sweep / last cohabitation as appropriate. Where the cohort member responds 'No' to this questions the remainder of the questions in that relationship history loop are set to -1 (Not applicable). For completeness these records are included in the 'bcs_age46_relationships' dataset.

4.10 Unfolding brackets

A feature of income or payment questions in the Age 46 Survey is the use of unfolding brackets for those cases where a respondent refuses or is unable to provide an exact answer. As these questions relate to a minority of respondents, they have been placed in separate dataset.

The unfolding bracket variables associated with variables deposited in main survey dataset 'bcs_age46_main' can be found in the dataset 'bcs_age46_unfolding'.

The unfolding brackets questions are designed to elicit a minimum and maximum value that define a range or "closed band" within which the actual value lies.

On entering the unfolding brackets, respondents are asked to say whether they have more, less or about the same as a particular value. This question is repeated using different values (which will be a lower or higher value depending on the answer to the preceding question). The procedure stops at the point when either: an upper and lower bound is provided; the respondent refuses or says “don’t know”; or the respondent places themselves in the top or bottom bracket.

The unfolding bracket questions are randomly ordered for each respondent. This will average any possible 'anchoring' effects (i.e. where people use the suggested figure as a reference point and make adjustments to it to reach their answer) from the procedure across the distribution. The bracket values are selected on the basis of the density of the underlying financial variable.

A list of the questions featuring unfolding brackets is provided below:

Question	**CAPI question**	**Variable name**	**Number of cohort members (including refusals at first or subsequent brackets)**
Self-employed take home income	SEPA	B10SEPA	65
Estimated gross pay	GROA	B10GROA	131
Estimated net pay	NETA	B10NETA	131
Usual net pay (if net pay is not usual)	USLA	B10USLA	19
Total take-home income (household)	INCAMT	B10INCAMT	536
Total savings	SAVTOT	B10SAVT	474
Amount of debt	DEBTAM	B10DEBT	207

4.11 Geographical variables

A series of geographical variables have been derived from the addresses at which participants were interviewed (see below). Country of interview, Government Office Region, Index of Multiple Deprivation Rank and Urban/Rural indicator are available in the main file. The remaining variables are provided in ‘bcs_age46_geographical_identifiers’ which is available via secure access due to the potentially disclosive nature of the information. Further information about the

derivation of these variables is provided in the document: BCS70 Age 46 Derived Variables User Guide.

Variable name	Derived variable label	Dataset
BD10CNTRY	Country of interview	bcs_age46_main
BD10GOR	2010 Government Office Region of residence	bcs_age46_main
BD10IMD	2015 Index of Multiple Deprivation rank	bcs_age46_main
BD10UR01IND	2001 Urban/rural indicator	bcs_age46_main
B10OSWARD	2017 Ward	bcs_age46_geographical_identifiers
B10CASWARD	2003 CAS ward	bcs_age46_geographical_identifiers
B10OA11	2011 OA Code	bcs_age46_geographical_identifiers
B10LSOA11	2011 Lower Layer SOA (LSOA)	bcs_age46_geographical_identifiers
B10MSOA11	2011 Middle Layer SOA (MSOA)	bcs_age46_geographical_identifiers
B10OSLAUA	2016 LA District/UA	bcs_age46_geographical_identifiers
B10PCON	2014 Parliamentary Constituency	bcs_age46_geographical_identifiers
B10WZ11	2011 Workplace Zone	bcs_age46_geographical_identifiers

4.12 Reference dates for retrospective data/histories

The Age 46 Survey collected ‘histories’ of housing situation, relationships and economic activity.

If participants had taken part in any of the three previous surveys (Age 34, Age 38, Age 42) the reference period for the relationship history was the date of last interview.

If participants had not taken part in any of these surveys the reference period was the time since 1st January 2004.

For housing and economic activity history, those who had taken part in any of the two previous surveys were asked about the time since their last interview, and for those who had not the reference period was the time since 1st January 2008.

4.13 Derived variables

A number of derived variables (including the overall scores from the various scales used in the questionnaires) have been included in the dataset. The variable names all have the prefix ‘BD10’ and the variable labels are endorsed ‘(Derived)’.

Information on the derived variables in this deposit is provided in the document: BCS70 Age 46 Derived Variables User Guide.

This guide only includes variables following the naming convention described above and not those labelled '(Derived in CAPI)', which are generally straightforward derivations.

4.14 Disclosive data

Research data are considered disclosive if there are concerns over the re-identification of individuals using one or more variables of the dataset in combination with other variables publicly available.

A small number of questions asked during the Age 46 Survey led to data that could potentially be disclosive. Therefore, the variables representing these questions have been recoded to reduce the risk of disclosivity. This has been done via top-coding (where outliers are merged into the same category) or truncation (where the values have a reduced precision).

The variables that have been treated as disclosive and recoded accordingly are as follows:

Question	Variable name	Variable label	Recode
Home rooms	B10NUMRMS	Number of rooms in home	12 or more in single
Previous SOC	B10JSOC3	Incorrect/missing data from last int: soc2010.99: SOC CODE	Truncated from 4-digit broad occupation to 3-digit residual minor group
Loop SOC	B10LSOC3	soc2010.0: SOC CODE	Truncated from 4-digit broad occupation to 3-digit residual minor group
Current SOC	B10SOC3	soc2010.0: SOC CODE	Truncated from 4-digit broad occupation to 3-digit residual minor group
Current SIC	B10SIC3	sic2010.0: SIC CODE	Truncated to 3-digit residual minor group
BNF	B10DRC4	BNF code subchapter	Sub-chapters with counts lower than 10 recoded to chapter (2 digits)

4.15 Data errors and inconsistencies during data collection

For a number of questions values of 0 for some cases were incorrectly set to missing during data collection. This was corrected subsequently by imputing values of 0 for these cases, so inaccuracies are highly unlikely to exist in the deposited data. The affected variables are as follows:

Variable name	Variable label
B10INCAMT	Total take home income after tax and deductions: amount
B10NMGCS2	Since last interview/Jan 2008, number of GCSEs at Grades D or E obtained
B10NMGCE2	Since last interview/Jan 2008, number of A Levels at Grades D or E obtained
B10BRKFST	Number of days per week eats breakfast
B10EXERSE	Number of days in a typical week does 30 mins or more of exercise
B10HTINES	Height without shoes in inches
B10WTPOD	Weight without clothes in pounds
B10CFLISD	Number of words the respondent recalls in delayed task

B10SAVT included a number of negative values for savings, which were not set to missing when recorded. These have been set to 0.

In addition, the routing in the CAPI for B10MEN12M was incorrectly formatted so a small number of cases may have been asked the question when they were not supposed to be. This was checked during cleaning and for BD10WP12M which incorporated it in its derivation.

B10VOTE01 asked about voting in the 2015 general election. The question asked 'Did you vote in the last general election in 2015?' A general election was called mid-way through fieldwork and took place in June 2017. In October 2017 a new variable was added (B10VOTE02) which asked 'Did you vote in the last general election in 2017?' and the wording of B10VOTE01 was changed to 'Did you vote in the previous general election in June 2015?' 574 participants were interviewed between the June 2017 election and the amendment to the questionnaire meaning they were asked about the last election in June 2015, despite this not being the last election. It is possible that this would have caused confusion. A flag variable

B10VOTEFLAG identifies these respondents so they can be excluded from analysis if felt appropriate.

Ten household members of one cohort member were recorded to have the exact same date of birth, which should have triggered pre-1936 softcheck. As no-one in the household was reported to have that date of birth at the 2012 sweep, these have all been set to missing.

Eleven household members, all of different cohort members, were incorrectly incorporated from the feed forward into the other household member loop in addition to, or in place of, the partner or child loops they were supposed to be in. As a result of this for two partners the respondents were not asked the relevant partner-specific questions about marital status. The information was therefore inferred from the marital status question asked outside the loops and whether further partners are mentioned.

For children introduced to the household at the current sweep there is limited information on the current partner's relationship to them (B10GCRLP2) compared to previous sweeps- Only whether or not they are their own child. This issue also applies to new partners and new/existing children (e.g whether they adopted the child).

4.16 Further information

Queries about any aspect of the data should be sent to CLS using the feedback page on the CLS website: https://cls.ucl.ac.uk/contact/

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Appendices

Appendix 1: British National Formulary (BNF) 4 digit codes

Chapter	Subchapter	BNF4	Description
01	**00**	**0100**	**Gastro-Intestinal System**
01	01	0101	Dyspep&Gastro-Oesophageal Reflux Disease
01	02	0102	Antispasmod.&Other Drgs Alt.Gut Motility
01	03	0103	Antisecretory Drugs+Mucosal Protectants
01	04	0104	Acute Diarrhoea
01	05	0105	Chronic Bowel Disorders
01	06	0106	Laxatives
01	07	0107	Local Prepn for Anal & Rectal Disorders
01	08	0108	Stoma Care
01	09	0109	Drugs Affecting Intestinal Secretions
02	**00**	**0200**	**Cardiovascular System**
02	01	0201	Positive Inotropic Drugs
02	02	0202	Diuretics
02	03	0203	Anti-Arrhythmic Drugs
02	04	0204	Beta-Adrenoceptor Blocking Drugs
02	05	0205	Hypertension and Heart Failure
02	06	0206	Nit,Calc Block & Other Antianginal Drugs
02	07	0207	Sympathomimetics
02	08	0208	Anticoagulants And Protamine
02	09	0209	Antiplatelet Drugs
02	10	0210	Stable Angina, Acute/Crnry Synd&Fibrin
02	11	0211	Antifibrinolytic Drugs & Haemostatics
02	12	0212	Lipid-Regulating Drugs

02	13	0213	Local Sclerosants
03	**00**	**0300**	**Respiratory System**
03	01	0301	Bronchodilators
03	02	0302	Corticosteroids (Respiratory)
03	03	0303	Cromoglycate,Rel,Leukotriene Antagonists
03	04	0304	Antihist, Hyposensit & Allergic Emergen
03	05	0305	Resp Stimulants & Pulmonary Surfactants
03	06	0306	Oxygen
03	07	0307	Mucolytics
03	08	0308	Aromatic Inhalations
03	09	0309	Cough Preparations
03	10	0310	Systemic Nasal Decongestants
03	11	0311	Antifibrotics
04	**00**	**0400**	**Central Nervous System**
04	01	0401	Hypnotics And Anxiolytics
04	02	0402	Drugs Used In Psychoses & Rel.Disorders
04	03	0403	Antidepressant Drugs
04	04	0404	CNS Stimulants and drugs used for ADHD
04	05	0405	Obesity
04	06	0406	Drugs Used In Nausea And Vertigo
04	07	0407	Analgesics
04	08	0408	Antiepileptic Drugs
04	09	0409	Drugs Used In Park'ism/Related Disorders
04	10	0410	Drugs Used In Substance Dependence
04	11	0411	Dementia
05	**00**	**0500**	**Infections**
05	01	0501	Antibacterial Drugs
05	02	0502	Antifungal Drugs

05	03	0503	Antiviral Drugs
05	04	0504	Antiprotozoal Drugs
05	05	0505	Anthelmintics
06	**00**	**0600**	**Endocrine System**
06	01	0601	Drugs Used In Diabetes
06	02	0602	Thyroid And Antithyroid Drugs
06	03	0603	Corticosteroids (Endocrine)
06	04	0604	Sex Hormones
06	05	0605	Hypothalamic&Pituitary Hormones&Antioest
06	06	0606	Drugs Affecting Bone Metabolism
06	07	0607	Other Endocrine Drugs
07	**00**	**0700**	**Obstetrics,Gynae+Urinary Tract Disorders**
07	01	0701	Drugs Used In Obstetrics
07	02	0702	Treatment Of Vaginal & Vulval Conditions
07	03	0703	Contraceptives
07	04	0704	Drugs For Genito-Urinary Disorders
08	**00**	**0800**	**Malignant Disease & Immunosuppression**
08	01	0801	Cytotoxic Drugs
08	02	0802	Drugs Affecting The Immune Response
08	03	0803	Sex Hormones & Antag In Malig Disease
09	**00**	**0900**	**Nutrition And Blood**
09	01	0901	Anaemias + Other Blood Disorders
09	02	0902	Fluids And Electrolytes
09	03	0903	Intravenous Nutrition
09	04	0904	Oral Nutrition
09	05	0905	Minerals

09	06	0906	Vitamins
09	07	0907	Bitters And Tonics
09	08	0908	Metabolic Disorders
09	09	0909	Foods
09	10	0910	Compound Vit/Mineral Formulations
09	11	0911	Health Supplements
09	12	0912	Other Health Supplements
10	**00**	**1000**	**Musculoskeletal & Joint Diseases**
10	01	1001	Drugs Used In Rheumatic Diseases & Gout
10	02	1002	Drugs Used In Neuromuscular Disorders
10	03	1003	Soft-Tissue Disorders & Topical Pain Rel
11	**00**	**1100**	**Eye**
11	03	1103	Anti-Infective Eye Preparations
11	04	1104	Corti'roids & Other Anti-Inflamm.Preps.
11	05	1105	Mydriatics And Cycloplegics
11	06	1106	Treatment Of Glaucoma
11	07	1107	Local Anaesthetics
11	08	1108	Miscellaneous Ophthalmic Preparations
12	**00**	**1200**	**Ear, Nose And Oropharynx**
12	01	1201	Drugs Acting On The Ear
12	02	1202	Drugs Acting On The Nose
12	03	1203	Drugs Acting On The Oropharynx
13	**00**	**1300**	**Skin**
13	01	1301	Management of Skin Conditions
13	02	1302	Emollient & Barrier Preparations
13	03	1303	Top Local Anaesthetics & Antipruritics
13	04	1304	Topical Corticosteroids
13	05	1305	Preparations For Eczema And Psoriasis

13	06	1306	Acne and Rosacea
13	07	1307	Preparations For Warts And Calluses
13	08	1308	Sunscreens And Camouflagers
13	09	1309	Shampoo&Other Preps For Scalp&Hair Cond
13	10	1310	Anti-Infective Skin Preparations
13	11	1311	Skin Cleansers,Antiseptics & Desloughing
13	12	1312	Antiperspirants
13	13	1313	Wound Management Products
13	14	1314	Topical Circulatory Preparations
13	15	1315	Miscellaneous Topical Preparations
14	**00**	**1400**	**Immunological Products & Vaccines**
14	03	1403	Diagnostic Vaccines
14	04	1404	Vaccines And Antisera
14	05	1405	Immunoglobulins
15	**00**	**1500**	**Anaesthesia**
15	01	1501	General Anaesthesia
15	02	1502	Local Anaesthesia
18	**00**	**1800**	**Preparations used in Diagnosis**
18	03	1803	X-Ray Contrast Media
19	**00**	**1900**	**Other Drugs And Preparations**
19	01	1901	Alcohol, Wines & Spirits
19	02	1902	Selective Preparations
19	04	1904	Single Substances
19	05	1905	Other Preparations
19	06	1906	Acids
19	07	1907	Base/Dil/Susp Agents/Stabilisers
19	08	1908	Colouring,Flavouring & Sweetening Agents
19	09	1909	Disinfectants,Preserv&Sterilising Agents

19	13	1913	Cordials/Soft Drinks
19	14	1914	Waters
19	15	1915	Other Gases
20	**00**	**2000**	**Dressings**
20	01	2001	Absorbent Cottons
20	02	2002	Arm Sling/Bandages
20	03	2003	Wound Management & Other Dressings
20	04	2004	Gauzes & Gauze Tissue
20	05	2005	Tracheostomy & Laryngectomy Appliances
20	06	2006	Foam
20	07	2007	Lints
20	08	2008	Plasters
20	09	2009	Stockinette
20	10	2010	Surgical Adhesive Tape
20	11	2011	Surgical Sutures
20	12	2012	Swabs
20	13	2013	Unspecified Dressing
20	14	2014	Skin Closure Strips, Sterile
20	15	2015	Skin Adhesive, Sterile
20	16	2016	Tapeless Holders
20	17	2017	Cervical Collar
20	18	2018	Cellulose Wadding BP 1988
20	20	2020	Silk Garments
21	**00**	**2100**	**Appliances**
21	01	2101	Other Appliances
21	02	2102	Catheters
21	03	2103	Chiropody Appliances
21	04	2104	Contraceptive Devices

21	05	2105	Suprapubic Appliances
21	06	2106	Trusses
21	07	2107	Elastic Hosiery
21	08	2108	Oxygen Masks
21	09	2109	Special Sanction Authorisations
21	10	2110	C.A.P.D. Administration Equipment
21	11	2111	Special Authorisation Guernsey
21	12	2112	Peak Flow Meters
21	13	2113	Catheter Maintenance Products
21	14	2114	Lubricant Gels
21	16	2116	Irrigation Solutions
21	17	2117	Nasal Device
21	18	2118	Vacuum Pumps for Erectile Dysfunction
21	19	2119	Oral Film Forming Agents
21	20	2120	Venous Ulcer Compression System
21	21	2121	Dry Mouth Products
21	22	2122	Emollients
21	23	2123	Vaginal Moisturisers
21	24	2124	Nasal Products
21	25	2125	Vaginal Dilators
21	26	2126	Leg Ulcer Wrap
21	27	2127	Lymphoedema Garments
21	28	2128	Anal Irrigation System
21	29	2129	Plantar Pressure Offloading Device
21	30	2130	Eye Products
21	31	2131	Cycloidal Vibration Accessories
21	32	2132	Inhalation Solutions
21	33	2133	Indwelling Pleural Cath Drain System

21	34	2134	Vaginal PH Correction Products
21	35	2135	Acne Treatment
21	36	2136	Adhesive Dressing Remover Ster Silicone
21	37	2137	Pelvic Toning Devices
21	38	2138	Low Friction Products
21	39	2139	Prosthetic Adhesives
21	40	2140	Bacterial Decolonisation Products
21	41	2141	Physical Debridement Device
21	42	2142	Jaw Rehabilitation Device
21	43	2143	Micro-Enema - Sodium Citrate
21	44	2144	Dev For Adjunctive Tt Of Hypertension
21	45	2145	Douches
21	46	2146	Hernia Support Garments
21	47	2147	Dev For Fungal Nail Infections
21	48	2148	Detection Sensor Interstitial Fluid/Gluc
21	49	2149	Pulsed Electromagnetic Stimulator
22	**00**	**2200**	**Incontinence Appliances**
22	02	2202	Anal Plugs
22	05	2205	Catheter Valves
22	10	2210	Drainable Dribbling Appliances
22	15	2215	Faecal Collectors
22	20	2220	Incontinence Belts
22	30	2230	Incontinence Sheaths
22	40	2240	Incontinence Sheath Fixing Strips & Adh
22	50	2250	Leg Bags
22	60	2260	Night Drainage Bags
22	70	2270	Suspensory Systems
22	80	2280	Tubing And Accessories

22	85	2285	Insert For Female Stress Incont
22	90	2290	Urinal Systems
23	**00**	**2300**	**Stoma Appliances**
23	05	2305	Adhesive Discs/Rings/Pads/Plasters
23	10	2310	Adhesive (Pastes/Sprays/Solutions)
23	15	2315	Adhesive Removers (Sprays/Liquids/Wipes)
23	20	2320	Bag Closures
23	25	2325	Bag Covers
23	30	2330	Belts
23	35	2335	Colostomy Bags
23	40	2340	Colostomy Sets
23	45	2345	Deodorants
23	46	2346	Discharge Solidifying Agents
23	50	2350	Filters/Bridges
23	55	2355	Flanges
23	60	2360	Ileostomy Bags
23	65	2365	Ileostomy Sets
23	70	2370	Irrigation Washout Appliances
23	75	2375	Pressure Plates/Shields
23	80	2380	Skin Fillers And Protectives
23	85	2385	Skin Protectors
23	90	2390	Stoma Caps/Dressings
23	92	2392	Tubing & Accessories
23	93	2393	Accessories (Guernsey)
23	94	2394	Two Piece Ostomy Systems
23	96	2396	Urostomy Bags
23	98	2398	Urostomy Sets

23	99	2399	Ostomy Appliances R/Sub Allowed Pre 1985

Appendix 2: Derived Online Dietary Questionnaire Nutrient Variables

Variable Name	Variable Label
foodwt	Food weight (g)
acar	Alpha-carotene (µg)
alco	Alcohol (g)
bcar	Beta-carotene (µg)
bcrypt	Beta cryptoxanthin (µg)
biot	Biotin (µg)
ca	Calcium (mg)
cho	Carbohydrate (g)
chol	Cholesterol (mg)
cl	Chloride (mg)
cmon	Monounsaturated fat (g)
cn3	Polyunsaturated fat n3 (g)
cn6	Polyunsaturated fat n6 (g)
cu	Copper (mg)
engfib	Englyst fibre (g)
fat	Total fat (g)
fe	Iron (mg)
folt	Folate (ug)
fruct	Fructose (g)
gluc	Glucose (g)
hfe	Haem iron (mg)
i	Iodine (µg)
k	Potassium (mg)
kcals	Energy (kcal)
kj	Energy (kJ)
lact	Lactose (g)
malt	Maltose (g)
mg	Magnesium (mg)
milk	Intrinsic and milk sugars (g)
mn	Manganese (mg)
na	Sodium (mg)
nhfe	Non-haem iron (mg)
niacequ	Niacin equivalent (mg)

nmilk	Non-milk extrinsic sugars (g)
osug	Other Sugars (g)
p	Phosphorus (mg)
panto	Pantothenic acid (mg)
prot	Protein (g)
ret	Retinol (ug)
ribo	Riboflavin (mg)
satfa	Saturated fat (g)
se	Selenium (µg)
star	Starch (g)
sucr	Sucrose (g)
thia	Thiamin (mg)
totcar	Carotene (ug)
totnit	Total nitrogen (g)
totsug	Total sugars in (g)
trans	Trans fat (g)
vita	Vitamin A (retinol equivalents) (µg)
vitb12	Vitamin B12 (ug)
vitb6	Vitamin B6 (mg)
vitc	Vitamin C (mg)
vitd	Vitamin D (ug)
vite	Vitamin E (mg)
water	Water (g)
zn	Zinc (mg)
fruit	Weight (g) of Fruit (NDB grouping)
driedfruit	Weight (g) of Dried Fruit (NDB grouping)
fruitjuice	Weight (g) of Fruit Juice (NDB grouping)
smoothiefruit	Weight (g) of Smoothie Fruit (NDB grouping)
tomatoes	Weight (g) of Tomatoes (NDB grouping)
tomatopuree	Weight (g) of Tomato Puree (NDB grouping)
brassicaceae	Weight (g) of Brassicaceae (NDB grouping)
yellowredgreen	Weight (g) of Yellow/Root Vegetables (NDB grouping)
beans	Weight (g) of Beans and Pulses (NDB grouping)
nuts	Weight (g) of Nuts (NDB grouping)
otherveg	Weight (g) of Other Fruit/Veg (NDB grouping)
beef	Weight (g) of Beef (NDB grouping)
lamb	Weight (g) of Lamb (NDB grouping)
pork	Weight (g) of Pork (NDB grouping)
processredmeat	Weight (g) of Processed Red Meat (NDB grouping)
otherredmeat	Weight (g) of Other Red Meat (NDB grouping)
burgers	Weight (g) of Burgers & Grill Steaks (NDB grouping)
sausages	Weight (g) of Sausages (NDB grouping)

offal	Weight (g) of Offal (NDB grouping)
poultry	Weight (g) of Poultry (NDB grouping)
processedpoultry	Weight (g) of Processed Poultry (NDB grouping)
gamebirds	Weight (g) of Game Birds (NDB grouping)
whitefish	Weight (g) of White Fish (NDB grouping)
oilyfish	Weight (g) of Oily Fish (NDB grouping)
cannedtuna	Weight (g) of Canned Tuna (NDB grouping)
shellfish	Weight (g) of Shellfish (NDB grouping)
cottagecheese	Weight (g) of Cottage Cheese (NDB grouping)
cheddarcheese	Weight (g) of Cheddar Cheese (NDB grouping)
othercheese	Weight (g) of Other Cheese (NDB grouping)
bevwt	Total weight of beverages only (g)
bevkj	Energy (kJ) of beverages only
edensity	Energy density (kJ/g): (energy of foods) / (weight of foods)
free_sugar	Free sugar (g)
veg_prot	Vegetable protein (g)
veg_fat	Vegetable fat (g)
ani_prot	Animal protein (g)
ani_fat	Animal fat (g)
nvfc_fa	Number of valid food codes (FA calculation)
foodwt_fa	Total weight of all foods and beverages(g) (FA calculation)
cho_fa	Carbohydrate (g) (FA calculation)
fat_fa	Fat (g) (FA calculation)
kcals_fa	Energy (kcal) (FA calculation)
kj_fa	Energy (kJ) of all foods and beverages (FA calculation)
monofat_fa	Monounsaturated fatty acids (g) (FA calculation)
polyfat_fa	Polyunsaturated fatty acids (g) (FA calculation)
prot_fa	Protein (g) (FA calculation)
satfa_fa	Saturated fatty acids (g) (FA calculation)
totsug_fa	Total sugars (g) (FA calculation)
trans_fa	Trans fatty acids (g) (FA calculation)
fod4_0	Butanoic acid (also butyric acid) (g)
fod6_0	Hexanoic acid (also caproic acid) (g)
fod8_0	Octanoic acid (also caprylic acid) (g)
fod10_0	Decanoic acid (also capric acid) (g)
fod12_0	Dodecanoic acid (also lauric acid) (g)
fod14_0	Tetradecanoic acid (also myristic acid) (g)
fod15_0	Pentadecanoic acid (also pentadecylic acid) (g)
fod16_0	Hexadecanoic acid (also palmitic acid) (g)
fod17_0	Heptadecanoic acid (also margaric acid) (g)

fod18_0	Octadecanoic acid (also stearic acid) (g)
fod16_1	Hexadecenoic acid (also palmitoleic acid) (g)
fod18_1	Octadecenoic acid (also oleic acid) (g)
fod20_1	Eicosenoic acid (g)
fod22_1	Docosenoic acid (also erucic acid) (g)
fod18_2	Octadecadienoic acid (also linoleic acid) (g)
fod18_3	Octadecatrienoic acid (also alpha-linolenic acid) (g)
fod18_4	Octadecatetraenoic acid (also stearidonic acid) (g)
fod20_4	Eicosatetraenoic acid (also arachidonic acid) (g)
fod20_5	Eicosapentaenoic acid (EPA) (g)
fod22_5	Docosapentaenoic acid (DPA) (g)
fod22_6	Docosahexaenoic acid (DHA) (g)