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# Is there scope for Harmonisation of the National Child Development Study and the English Longitudinal Study of Ageing?

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## Overview and key lessons

The growth of the older age population in the UK has sparked increased research interest on health and socioeconomic inequalities in later life. This is evident through the creation of longitudinal studies of older age samples and the renewed investment in the birth cohort studies whose samples are entering later life.

This report explores the potential in harmonising elements of a prospective birth cohort study, the 1958 National Child Development Study (NCDS) and a panel study of older people that includes a retrospective life history module, the English Longitudinal Study of Ageing (ELSA).

The National Child Development Study (NCDS) is a prospective birth cohort study of more than 17,000 individuals who were born in a single week in March 1958 in Great Britain. Data collection began at birth and has taken place periodically throughout childhood and adult life, the latest being at 55 years of age. The English Longitudinal Study of Ageing is an ongoing panel study of a representative sample of individuals living in England aged 50 and over (Stephens, Breeze, Banks, & Nazroo, 2013), with a sample size of approximately 10,000 at each wave.

Both studies offer distinct, valuable resources for the study of ageing. This report compares the design and content of the two studies, aiming to set out:

1. The distinct strategic role of each study in adding to our understanding the determinants of healthy ageing.
2. The key areas where existing data already collected in ELSA and NCDS could be harmonised – for example through the creation of common derived variables - to enable joint research combining both studies.
3. The key areas where harmonisation could be built into the future data collection of one or both studies, in order to magnify the future potential and impact of both.
4. Specific opportunities for biomedical data collection for the NCDS at age 60.

Key lessons to be drawn at this stage are:

- The key strength of NCDS as a study of ageing - relative to ELSA - is the collection of detailed prospective data across the life course, particularly from childhood; the fact that it has a large sample size of its particular age group; and its coverage throughout adult life in certain question domains (e.g. cognitive and behavioural indices in childhood; lifetime measures of weight and height, alcohol intake).

This makes it especially strong for addressing research questions relating to the long-term outcomes in older life of experiences and decisions in early life; the links throughout adult life between different life domains (e.g. health, employment, fertility, poverty); and the intergenerational transmission of advantage and disadvantage and the processes involved.

- The key strength of ELSA - relative to NCDS - as a study of ageing is its coverage of the entire older population rather than one specific birth year, relatively frequent follow-

up (including repeated biomedical data), the inclusion of partners, and more detailed information, particularly on indices of well-being, physical functioning, and socio-economic status (especially pensions, inheritances, expenditure and wealth).

This makes it particularly strong for answering research questions relating to interrelated dynamic processes later in life (e.g. health, well-being, and wealth), and processes that are jointly determined within couples (e.g. retirement, psychological well-being), issues relating to the oldest old (around social care, social isolation, etc.); and individual responses to financial incentives and shocks (such as recession).

- The next stage of research will be to construct common measures of circumstances in early life and later life outcomes in both datasets and to explore how different models linking these perform.
- Priorities for future data collection in NCDS include adding direct measures of **physical functioning** as part of a new biomedical sweep; the introduction of questions about **health conditions relating to older age** (e.g. stroke, dementia); repeating **cognitive testing**, again in alignment with ELSA, and strengthening **socio-economic indicators**, especially pensions and wealth; further contact with cohort members' **partners** should also be considered carefully.

The report is structured as follows:

Section 2 describes the designs of the two datasets in question, drawing high-level conclusions about their similarities and differences.

Section 3 compares later life measures collected in NCDS (at age 50 and 55) with measures collected across ELSA survey waves.

Section 4 provides a comparison of the adult biomedical data collected in each study.

Section 5 briefly discusses consent for record linkage in each study.

Section 6 compares retrospective life history data collected in ELSA with contemporaneous and retrospective data collected across adult sweeps of NCDS.

Section 7 compares retrospective life history data collected in ELSA with data collected across childhood sweeps of NCDS.

Section 8 sets out recommendations for the creation of a set of harmonised variables based on existing data, and makes recommendations for future data collections of NCDS and ELSA.

## 2 Study designs

### 2.1 Overview of findings from this section

The studies are both longitudinal but have fundamentally different designs. For example:

- NCDS is representative of a single birth cohort, whereas ELSA covers multiple cohorts aged 50+.
- Prospective data collection in NCDS began at birth, but from age 50 onwards in ELSA.
- Partners of study members are routinely included in ELSA, but not in NCDS.
- NCDS covers Great Britain, whereas ELSA is representative of the England only.
- Data collection occurs every two years in ELSA and every five years going forward in NCDS.

## 2.2 National Child Development Study

NCDS began as a survey of the mothers of 17,000 births in England, Wales and Scotland in a week of March 1958 (Power & Elliott, 2006). The cohort was retraced at age 7 and again during childhood at ages 11 and 16 when data were collected from parents, school, cognitive tests, a medical exam and the cohort member. Additional cohort members were added during the childhood sweeps who had immigrated to Britain and who were born in the target week in 1958. The study asked about various aspects of health, educational and social development in childhood.

The cohort has been interviewed seven times during adulthood, at ages 23 (1981), age 33 (1991) and age 42, (2000), 44/5 (2002/3), 46 (2004), 50 (2008) and 55 (2013). The adult sweeps have tracked transitions over the life course including employment, residential and partnership histories as well as changes in health and social activity. Information has only been collected from the cohort member in adulthood, except at sweep 5 (1991) when a random sample of 1-in-3 children, partners and mothers were interviewed. The age 44/45 (2003) sweep was a dedicated biomedical sweep in which cohort members provided blood and saliva samples and a number of objective health measures were taken. Most sweeps have involved face-to-face interviews in the cohort members' homes. However the age 46 (2004) sweep was conducted by telephone, and at age 55 (2013) a mixed mode web-to-telephone approach was taken.

Table 1 shows the sample size of the cohort achieved at each 'sweep' of NCDS. The main reason for non-response in later sweeps is due to cohort members moving to a new address and the difficulty of tracing them. Nonetheless, non-response rates have remained low over time with fewer than 22% of cohort members who were contacted at each sweep not completing an interview.

**Table 1. The 1958 birth cohort study sample sizes**

Survey	Year	Age	Data collected from	Achieved sample
PMS	1958	Birth	Mother and medical records	17,416
Sweep 1	1965	7	Parents, school, cognitive tests, medical exam, cohort member	15,425
Sweep 2	1969	11	Parents, school, tests, medical exam, cohort member	15,337
Sweep 3	1974	16	Parents, school, tests, medical exam, cohort member, census	14,647
Exams	1978	20	Schools attended when cohort member aged 16	14,331
Sweep 4	1981	23	Cohort member, census	12,537
Sweep 5	1991	33	Cohort member, spouse/partner, children, children's mother	11,407
Sweep 6	2000	42	Cohort member	11,419
Biomedical	2003	45	Cohort member	9,534
Sweep 7	2004	46	Cohort member	9,534
Sweep 8	2008	50	Cohort member	9,790

Sweep 9	2013	55	Cohort member	9,125
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### 2.3 English Longitudinal Study of Ageing

ELSA is a panel study of a representative sample of men and women living in England aged 50 and over (Steptoe et al, Breeze, Banks, & Nazroo, 2013). It was developed as a sister study to the Health and Retirement Study in the USA and has been used, along with HRS, as a model for a number of longitudinal ageing studies in other countries. Data from these studies have been brought together in the RAND Survey Meta Data Repository to enable comparison of ageing studies in the USA, Europe and a number of other selected countries (RAND, 2012).

ELSA has collected data on economic circumstances, social status, physical and mental health, social relationships and cognitive function every 2 years since 2002. Data are collected using computer-assisted personal interviews and self-completion questionnaires. Every four years ELSA has a nurse visit that collects objective biological information and measures of physical functioning.

In 2007, the majority of ELSA sample members completed a life history interview which captured information about their life experiences using an life history calendar, which is designed to help people remember past events more accurately (Ward, Medina, Mo, & Cox, 2009). The life history interview collected data on respondents' children, fertility, relationships, housing and geographical mobility, and living situation when 10 years old, jobs and earnings, health in childhood and adulthood, relationship with parents in childhood and other important life events.

Table 2 shows the sample size across each 'wave' of ELSA. For wave 1, core members were recruited from the HSE in 1998, 1999 and 2001 for those who were a member of an HSE household where at least one person had agreed to follow-up, born before 1 March 1952 and living in private household in England at the time of first wave of fieldwork. The initial sample was selected to give adequate representation of men and women in 5-year age bands. The initial response rate was 67%. Response rates have been above 70% for the target sample in every wave since.

Partners who were younger than 50 and those who had joined a sample members' household were also invited for interview. Although partners who are not core members are often not included in analysis of the ELSA dataset, the fact that many have completed a main interview means that the characteristics of partners and joint income and wealth can be taken into account when assessing outcomes for core members. Partners who stopped living with a core member were interviewed once following departure from the sample household to determine their circumstances post separation.

The core member sample was refreshed at wave 3 to maintain representation of people aged 50-53. A further refreshment sample was added at wave 4 of individuals aged 50-75, and a refreshment of aged 50-55 was added in wave 6. The refreshment sample members were selected on the basis of age from the later collections of HSE.

The crossover in cohorts in ELSA and NCDS is negligible with no ELSA core members and only 54 partners born in 1958 who completed a life history interview at wave 3. A small number

of core members born in 1958 were added as part of the refreshment sample at wave 4 (13 respondents) and at wave 6 (134 respondents).

**Table 2. ELSA sample size by age group and member status**

Survey	Year	Achieved sample					
		Core members				Partners <sup>1</sup>	Total
		Age 50-54	Aged 55-59	Aged 60+	All		
Wave 1	2002/03	1,981	2,185	7,225	11,391	708	12,099
Wave 2	2004/05	744	1,853	6,183	8,780	652	9,432
Nurse visit	2004/05	624	1,665	5,377	7,666	0	7,666
Wave 3 <sup>2</sup>	2006/07	1,388	1,658	5,764	8,810	961	9,771
Life history	2007	925	1,291	4,929	7,145	710	7,855
Wave 4 <sup>3</sup>	2008/09	1,040	1,855	6,991	9,886	1,164	11,050
Nurse visit	2008/09	772	1,486	5,960	8,218	425	8,643
Wave 5	2010/11	215	1,753	7,122	9,090	1,184	10,274
Wave 6	2012/13	635	1,427	7,107	9,169	1,432	10,601
Nurse visit	2012/13	503	1,192	6,035	7,730	324	8,054

<sup>1</sup> Includes core partners who were eligible for inclusion but were not interviewed when they were first approach to join ELSA, younger partners who did not meet the age criterion to be classified as a core member, new partners joining the household since the original HSE interview, older partners who did not meet the age criterion for refreshment samples at wave 3, 4 and 6.

<sup>2</sup> Refreshment sample from HSE 2001/02/03/04 – age 50-52 on 1 March 2006.

<sup>3</sup> Refreshment sample from HSE 2006 age 50-74 on 1 March 2008.



### 3. Comparing later life measures at ages 50 and 55 in NCDS and ELSA

#### 3.1 Overview of findings from this section

The studies broadly overlap in their coverage of later life, but there are some key *differences*:

- Health
  - NCDS does not include typically older age conditions, e.g stroke, arthritis, dementia
  - Self-reported functioning: ELSA more extensive than NCDS
  - Depression symptoms: not comparable, ELSA uses CES-D, and GHQ-12; NCDS uses Malaise scale
  - Psychological well-being: Small overlap (CASP-19); other measures not comparable
  - Height, weight: Self-report in NCDS adult sweeps, nurse measured in ELSA
  
- Cognitive tests:
  - NCDS cognition at 50 uses some of the same instruments as ELSA: word-list recall test, verbal fluency test, letter cancellation
  - ELSA additionally has included orientation in time prospective memory test, fluid intelligence
  
- Pensions and expectations: Small overlap in comparable questions on retirement expectations. ELSA has much more detail, on a wider set of expectations. ELSA has more detail on pensions
  
- Household income, wealth, expenditure
  - Assets and debts: housing wealth collected in NCDS, ELSA contains fuller measure
  - ELSA collects household expenditure, NCDS does not collect spending
  - ELSA collects information on intra-familial transfers and inheritances, not included in NCDS
  - In ELSA, couples can separately reports; NCDS cohort member reports both own and partner's income and family wealth
  
- Housing:
  - ELSA includes housing costs, housing problems and whether any adaptations have been made to the property, these are not included in NCDS.
  
- Social participation and support:
  - Similar but not comparable measures of membership of organisations, and social activities, e.g. voting, voluntary work, and visits to cinema, concerts.
  - Both studies contain questions on friendships and partnerships: including frequency of contact and quality of relationships, but these are not closely comparable. ELSA contains a measure of loneliness, not included in NCDS
  - ELSA asks about access and usage of public transport, this is not in NCDS

Table A1 provides a summary of prospective measures collected when NCDS cohort members were aged 50 and 55 (sweeps 8-9) and in ELSA during waves 1-6. The table indicates whether these measures of 'later life' are comparable in the two datasets. This section discusses each broad group of measures in turn.

### **3.2 Demographics**

Demographic characteristics including household membership, living parents, children and grandchildren, marital status and ethnic group are comparable between NCDS8-9 and ELSA. ELSA has not asked about national identity or language, which were both included in the census of population for the first time in 2011.<sup>4</sup>

### **3.3 Physical health and health behaviours**

NCDS8-9 and ELSA have comparable measures of self-rated health and limiting long-standing illness. Health conditions, however, are recorded using different questions in the two datasets and only include a few identical items. NCDS asks cohort members whether they suffer from the conditions and have seen a doctor in the last 12 months, whereas ELSA asks whether the condition has ever been diagnosed. There are a number of conditions more common in older ages that are missing from NCDS8-9, including stroke, arthritis, Alzheimer's disease and dementia. Health conditions such as a stroke and arthritis have been shown to predict mobility disability in the ELSA sample (Melzer, Gardener, & Guralnik, 2005) and are likely to become increasingly prevalent in the NCDS cohort in the future.

ELSA has continually asked about self-reported eyesight and hearing, mobility limitations, falls, functional aids and incontinence. These are all missing from NCDS8-9. Mobility limitations (Chou 2007) and poor vision and hearing (Chou 2008) have each been shown to independently predict depression in the ELSA sample. NCDS8-9 include reports of specific eye and hearing conditions.

NCDS8 asked cohort members about hospital visits, which are not recorded in ELSA. ELSA has recently begun to ask panel members about sleep quality and menopause, both of which are measured in NCDS, as well as sexual functioning and cancer screening, which are not in NCDS.

NCDS has repeatedly asked cohort members their self-reported height and weight. These measures have only been collected in ELSA during a nurse visit in waves 2, 4 and 6.

Whether a respondent smokes and drinks alcohol and the frequency are included in NCDS8-9 and ELSA. Broadly comparable measures of physical exercise and activity at work are also available in both datasets. Since wave 3, ELSA has asked about fruit and vegetable consumption, which has not been asked in NCDS since cohort members were age 42 (2000).

### **3.4 Psychological wellbeing and cognition**

The only comparable measure of wellbeing in NCDS8-9 and ELSA is a shortened version of CASP-19, which is a quality of life scale specifically developed for older age samples (Hyde, Wiggins, Higgs, & Blane, 2003). A revised 14-item scale was included in NCDS8 and 6 items comprising the 'control' and 'self-realisation' domains of CASP were included in NCDS9. Vanhoutte (2012) has shown that CASP-19 includes items that form different dimensions, which are not related to wellbeing, and therefore suggests a revised 15-item version. 11 of these 15 items were asked in NCDS8.

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<sup>4</sup> The 2011 Census data on language shows that greater proportions of the older age population (50+) in England, whose first language is not English, cannot speak English well compared with younger populations.

ELSA has tested a range of social and psychological wellbeing measures across waves 1-6, including the Satisfaction With Life Scale since wave 2 and the Office for National Statistics personal wellbeing questions since wave 6. NCDS8 includes a single item measure of life satisfaction, the Warwick Edinburgh Mental Well-Being Scale, and an IPIP personality inventory. Each of these is conceptually similar to the measures used in ELSA, but comprise differently worded items.

Symptomatic depression is measured in all waves of ELSA using the 8-item shortened Center for Epidemiological Studies Depression Scale (CES-D) which is widely used in other ageing studies. The General Health Questionnaire (GHQ-12) is measured in waves 1 and 3. Both of these scales measure mental health and are conceptually similar to the Malaise scale used in NCDS8, but not directly comparable.

There are a wide range of cognition tests that have been collected in ELSA across survey waves on memory, executive function, and basic numeracy and literacy skills. Memory tests in ELSA comprise orientation in time, immediate and delayed word list recall and a prospective memory test where respondents had to remind the interviewer to do two specific tasks later in the interview. NCDS8 has used a comparable word list recall test, but did not measure orientation in time or prospective memory. Executive function is measured in both ELSA and NCDS8 using a verbal fluency task where participants are asked to name as many different animals as possible within 1 minute and a letter-cancellation test of attention, mental speed and visual scanning performance.

Numeracy and literacy test have been included in consecutively different waves of ELSA. The numerical test asks five questions which require successively more complex numerical calculations. The literacy test requires respondents to interpret a fictitious medicine label to determine whether they had understood its instructions. Analysis using ELSA shows that numerical literacy is related to knowledge and understanding of pension arrangements, and perceived financial security (Banks & Oldfield, 2007) and the likelihood of being unemployed during the life course and pay whilst in work (Jenkins, Ackerman, Frumkin, Salter, & Vorhaus, 2011). NCDS does not collected measures of adult numerical or literacy ability, or measure of fluid intelligence, the latter collected for the first time in ELSA in wave 6.

### **3.5 Qualifications, employment**

Both NCDS and ELSA record detailed information about academic and vocational qualifications obtained as well as the age at which a respondent left full time education. Measures of employment, including derived economic activity, socioeconomic classification, pay and hours worked are comparable between the two datasets as is whether a respondents' partner is working and how much they get paid.

### **3.6 Pensions and expectations**

There were questions about plans for retirement in NCDS8-9, including membership of a pension scheme by type and likelihood of working after contemporary state retirement age. NCDS8 also asked about worries about retirement income and inability to save for retirement. ELSA has asked a wider range of questions about knowledge and plans for retirement, such age at and reason for retirement, knowledge of state pension age, pension provision, expected pension returns and why a respondent is not a member of a pension scheme.

Respondents are asked in ELSA about a range of other expectations about their future: chance of living to a certain age, inheritance, moving house and house value change.

### **3.7 Household income and assets**

Income of a respondent and their partner over a defined period is recorded by broadly equivalent sources (i.e. paid work, pension, benefits, investments, other income) in NCDS and ELSA, as is a personal assessment of a respondent's financial situation. In ELSA, partners are asked separately for their income if they keep their finances separate, whereas NCDS cohort members are asked to provide this information about their partner. There is no data collected on financial assets (except for housing) or liabilities in NCDS. These have all been routinely collected in ELSA and can provide a measure of net wealth which has been shown to be strongly related to health (Banks, Karlsen, & Oldfield, 2003). ELSA also asks about financial transfers to family and other people.

### **3.8 Housing and consumption**

Details of current housing arrangements are included in NCDS8-9 and ELSA, including tenure, household, size, year moved, reason for move and difficulties paying for accommodation. NCDS9 asked about housing value, which is measured in ELSA. ELSA also asks about cost of rent, durables owned by the household, housing problems and whether any adaptations have been made to the property. The amount spent on durables, food, energy, leisure and clothing by the household are recorded in ELSA, but are not available in NCDS.

Access to a car and the number of vehicles in the household are recorded in NCDS8-9 and ELSA. NCDS does not ask about access and usage of public transport unlike ELSA. There are comparable measures of neighbourhood or area satisfaction in NCDS8 and ELSA waves 1 and 3.

### **3.9 Social participation and support**

The measures of social participation are subtly different in NCDS8-9 and ELSA. NCDS8 asked about lifetime and current membership of organisations and how often cohort members take part in these groups. ELSA only asks whether a respondent is a member of a range of social organisations, which are not the same as those included in NCDS8. Both datasets include selected measures of participation in social activities and contact with parents, children, other family and friends and measure whether a respondent does voluntary work and the frequency of visits to a cinema, concert and restaurant. However, many of the types of social activity are not directly comparable in NCDS and ELSA because of the differences in the wording of specific survey items. This would make it difficult to derive a comparable composite indicator of social activity in NCDS and ELSA.

Loneliness is related to the lack of social activity in that it reflects an individual's subjective assessment of the frequency and quality of the social contact they experience. Social isolation and loneliness are related to health, wellbeing and mortality, although the direct effect of social isolation has been shown to be clearer (Shankar, McMunn, Banks, & Steptoe, 2011; Steptoe, Shankar, Demakakos, & Wardle, 2013b). ELSA has included items that form a revised version of the UCLA Loneliness scale since wave 2. There is not a comparable measure in NCDS. Both NCDS and ELSA, however, ask about closeness of relationships with other people, including partner, children, parents, other family and friends, and level of support that can be

relied upon from these people. Nonetheless, the measures in the two datasets are not directly comparable.

## 4 Biomedical data in adult life

### 4.1 Overview of findings from this section

- NCDS had a single dedicated biomedical sweep at age 44/5; ELSA has repeated nurse visits every 4 years
- Physical examination: NCDS and ELSA collected comparable measures of height, weight, waist and hip measurement, blood pressure, resting pulse rate and lung function
- Blood analytes: NCDS and ELSA have comparable measures of: triglycerides, total and HDL-cholesterol, C-reactive protein, fibrinogen, glycated haemoglobin, cortisol, IGF-1 and DNA extraction and storage. Vitamin D extracted from whole blood
- Physical **performance** data were not measured in NCDS. The physical performance tests assessed in ELSA and other international longitudinal studies on ageing that could be added to NCDS are:
  - Walking speed performance test
  - Grip Strength
  - Balance
  - Leg raise
  - Chair rises
- ELSA currently collects cortisol from hair samples; NCDS has measures of cortisol from early and late morning saliva.

The collection of biomarkers provide an important source of information, helping us to understand the possible connections of physical health, mental health and social patterns among older adults. Within ageing studies, biomedical data provide measures of clinical (or preclinical) conditions (e.g. fasting glucose and diabetes); markers of processes involved in disease and disability (e.g. inflammatory markers and cardiovascular disease); and non-specific indices of adaptation and resistance to future illness (e.g. cortisol levels and stress). Some of the biomarkers are risk factors that are associated with adverse health outcomes, while others protect against ill health and may promote well-being.

NCDS has so far undertaken just one adult biomedical collection (at age 45), whereas ELSA nurse visits have been repeated every 4 years.

In terms of content, it is encouraging to note that both NCDS (at age 45) and ELSA collect comparable biomedical data on physical examination (height, weight, waist and hip measurement, blood pressure, resting pulse rate and lung function).

Both datasets have comparable measures of the following blood analytes: triglycerides, total and HDL-cholesterol, C-reactive protein, fibrinogen, glycated haemoglobin, cortisol, IGF-1 and DNA extraction and storage. ELSA has started measuring Vitamin D at wave 6, while Vitamin D has also been analysed from the NCDS blood samples given at age 44/45.

Other blood analytes measures that are not currently included in NCDS, which could be added to provide comparable measures with ELSA, either from the frozen NCDS samples from age 45 and also in the new blood collection at age 60, include: haemoglobin, white blood cell count. On the other hand, ELSA did not collect t-PA, vWF and IgE which were measured in NCDS. These are specialist biological measures that may not be repeated in future NCDS sweeps.

Physical **performance** data, which will be important as NCDS cohort members enter later life, are not currently measured in NCDS. The physical performance tests assessed are:

- Walking speed performance test (associated with general health and mortality)
- Grip Strength (measure of upper body strength and good marker of muscle strength generally)
- Balance (important function for locomotion and prevention of fall)
- Leg raise (important function for locomotion and prevention of fall)
- Chair rises (measure of lower body strength)

Each of these physical performance tests are measured at the nurse interview every four years, except for walking speed which is measured in the main interview every two years.

ELSA began collecting cortisol from hair samples at wave 6 (2012/13) having used saliva at wave 2 (2004/05) and wave 4 (2008/09). This decision was based on most recent evidence that suggests that hormones are incorporated and trapped inside the growing hair. This has led to the hypothesis that cortisol measurement of distinct hair segments could provide a retrospective calendar of cortisol production for the individual. Thus, cortisol measured in human hair can be a valid reflection of increased cortisol production for a period of up to six months. In NCDS, cortisol was measured from saliva samples collected at age 44/45.

**Table 3. Comparable biomarkers from ELSA nurse visit interviews and the NCDS biomedical interview**

	Wave 0	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6	NCDS age 45
<b>Blood Analytes</b>								
Triglycerides	✓		✓		✓		✓	✓
Total and HDL-cholesterol	✓		✓		✓		✓	✓
LDL Cholesterol			✓		✓		✓	-
C-reactive protein	✓		✓		✓		✓	✓
Fibrinogen	✓		✓		✓		✓	✓
Haemoglobin and ferritin	✓		✓		✓		✓	-
White blood cell count					✓		✓	-
Fasting glucose <sup>5</sup>			✓		✓		✓	-
Glycated haemoglobin (HbA1c)			✓		✓		✓	✓
Cortisol (from saliva)			✓					✓
Cortisol (from hair)							✓	
Tissue plasminogen activator antigen (t-PA)								✓
von Willebrand factor antigen (vWF)								✓
IgE / DHM IgE	✓							✓ <sup>6</sup>
<b>Physical examination and performance</b>								
Walking speed performance test (not part of nurse visit/ part of main interview)		✓	✓	✓	✓	✓	✓	-

<sup>5</sup> Fasting glucose, subset only - ELSA

<sup>6</sup> IgE only - NCDS

	Wave 0	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6	NCDS age 45
Height (standing and sitting)	✓		✓		✓		✓	✓
Weight	✓		✓		✓		✓	✓
Waist and hip measurement	✓		✓		✓		✓	✓
Blood pressure (diastolic and systolic), resting pulse rate	✓		✓		✓		✓	✓
Lung function (FEV, FVC, PEF)	✓		✓		✓		✓	✓ <sup>7</sup>
Chair rises			✓		✓		✓	-
Balance (side by side, semi tandem, full tandem)			✓		✓		✓	-
Grip Strength			✓		✓		✓	-
Leg raise (eyes open and closed)	✓		✓		✓		✓	-

<sup>7</sup> Lung function (FEV1 and FVC) – NCDS

## **4.2 Consent to record linkage**

Longitudinal data become even more valuable when linked to administrative records. Both studies have collected consents from their study members for linkages to health records and economic records (from both HMRC and DWP).

Based on these consents, ELSA has already enacted linkages to individual level hospital episodes statistics, and national insurance contributions, with linkage to DWP records currently under negotiation. NCDS is currently applying for these linkages to happen.

Both studies routinely link to study members' death records.

## **5. Life history data – adult life circumstances**

### **5.1 Overview of findings from this section**

- The coverage of topics in the ELSA life histories and that collected in NCDS sweeps throughout adult life is very similar, but NCDS often includes greater detail, and the period of recall for any retrospective questions in NCDS is much shorter.
- Children and fertility: both studies contain information about all children born to study members, adoptive and foster children but NCDS includes more details, e.g. birth weights, and ages left full-time education.
- Relationships: live-in partnerships histories across the whole of adult life can be constructed from both studies, but NCDS records slightly more detail (e.g. the age of each live-in partner).
- Work: both studies collect work and non-work histories, but NCDS records more detail, e.g. it includes all job-spells of 1 month or more (vs 6 months in ELSA life history);
- Socio-economic status, financial hardship: NCDS contains subjective measures of financial hardship at most sweeps; ELSA includes whether experienced financial hardship and the age it first happened
- Education and lifelong learning: the age left full-time education is available in both studies as well as educational qualifications obtained between survey interviews. NCDS can provide a complete history of when qualifications were obtained and whether attended other formal training courses at each sweep.
- Accommodation: both studies collect residential histories, but NCDS records more detail, e.g. NCDS contains a record of all residences lived in for at least one month (vs 6 months in ELSA). NCDS collects reasons for moves at some adult sweeps, which is not collectively retrospectively in ELSA.
- Health: both studies collect information about health conditions throughout adult life but differences in the way that these are asked will make it difficult to compare lifetime prevalence of health conditions – e.g. ELSA life histories only cover conditions that were experienced for a year or more.
- Other life event: ELSA life histories ask whether respondents have experienced a range of other life events that are not covered in NCDS, including natural disasters and had a partner addicted to drugs or alcohol.

Life course research has shown how certain events and circumstances experienced in earlier life can affect a range of social, economic and health outcomes in later life. This section will compare the life history data in NCDS0-9 and ELSA wave 3 to highlight the particular strengths of having prospective data since birth compared with retrospective life history data. The



comparison will provide the basis for possibility of using these data to test whether it matters how information is collected (i.e. retrospectively or contemporaneously) when determining the effect of earlier life circumstances on later life outcomes. Table A2 shows the life history measures available in the two datasets.

## **5.2 Children and fertility**

NCDS has asked about children born since the first adult sweep when cohort members were 23, including the sex, year of birth, birth weight, year died, age left full time education and whether the cohort member lived with the child.<sup>8</sup> The ELSA life history interview determined the same characteristics of children born to respondents, except for birth weight and year left education. Both NCDS and ELSA include information about grandchildren, adopted children and whether respondents have fostered children.

## **5.3 Relationships**

A partnership histories file has been created for NCDS using data on live-in relationships lasting a month or more from data collected in NCDS5 onwards (Hancock, Johnson, & Bukodi, 2011b). At NCDS5, cohort members were asked to recall people they lived with as a couple since the age of 16. Since sweep 5, cohort members have been asked about new statuses since their last interview.

The partnership histories file includes the start and end date of relationship, reason it ended, whether married and date, and partner's age. The ELSA life history interview collected the same information, except for age of previous partners. ELSA asked whether marriages were marked by a religious or civil ceremony to ensure marriages were legal (Ward et al., 2009). Both NCDS and the ELSA life history include information about any non-cohabiting relationships. Current non-residential relationships were asked about for the first time in NCDS at sweep 7 (2004).

At periodic sweeps information is also collected in NCDS on partnership relationship quality that is not available before age 50 in ELSA.

## **5.4 Work and education**

An activity histories file has been created which includes all work and non-work activities lasting a month or longer (Hancock, Johnson, & Bukodi, 2011a). Work activities since leaving school were asked in NCDS4 (i.e. recall from 1981 back to 1974) and work and non-work activities since leaving school were asked in NCDS5 (i.e. recall from 1991 back to 1974). All work and non-work activities since at least the last interview have been asked from NCDS6 onwards. The activities file includes the start and end date on an activity, whether it was part-time or fulltime, whether employed or self-employed and a socioeconomic class of each activity. The reason for leaving a work activity has been asked since NCDS6.

The ELSA life history interview asked about all paid work periods of 6 months or more and includes the same associated measures as NCDS, except for a derivation of socioeconomic class of work activities because there was not sufficient detail for coding (Ward et al., 2009). ELSA does, however, include the starting pay and final income of main career, except for self-employed respondents. This measure could be derived contemporaneously at each NCDS

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<sup>8</sup> A subsample of the children of NCDS cohort members completed ability tests in 1991 when the cohort members were 33.

sweep assuming cohort members reached their earning potential at the time they were interviewed. NCDS also asked about the number of employees, hours worked, number of employees at workplace, time to travel to work, job satisfaction and job security in most adult sweeps, none of which are measured in the ELSA life history.

The age left full-time education can be derived in ELSA and NCDS. NCDS includes more detailed information on the type of qualifications obtained and year obtain as well as how studies were financed. Highest educational qualification is available in the main ELSA questionnaire at wave 1 as well as qualifications obtained since the first interviewed in HSE in every subsequent wave. NCDS includes information about work-related training at each sweep, whereas ELSA only asks whether taken part in formal training courses in last 12 months.

### **5.5 Accommodation**

The ELSA life history interview asked for a list of all the residences lived at for a period of at least 6 months since birth and includes the year started living there, whether in the UK, tenure, type of non-private residence (if applicable) and year moved out. The full address of each residence was collected, however, this data has not been deposited as part of the UK Data Service release of ELSA.

It is not possible to build a complete residential history of NCDS cohort members before the age of 16, except for their place of residence and tenure at each interview, and the number of moves they made since birth. However, from the life grid completed at sweep 5 when the cohort members were 33, it is possible to build a history of places lived since age 16, including the year started, type of accommodation and tenure. In each sweep after NCDS5 the places lived at for at least a month can be derived along with the moving dates and tenure at each residence. The reason for each move was recorded at NCDS6, 8 and 9. The town of each previous residence was recorded, as was the postcode of each current address. These data have not been deposited in the UK Data Service release of NCDS.

Whether a respondents ever lived in a children's home, foster care, prison, TB institution, psychiatric hospital, or had been homeless or lived abroad for more than 6 months were each recorded in the ELSA life history. Whether a NCDS cohort member lived in care can be determined from each childhood sweep. A question also asked whether they ever lived in care at NCDS4. From NCDS5 onwards, cohort members were asked if they were in prison or a psychiatric hospital at the time of the survey and whether they had been homeless since the last sweep they were interviewed in.

### **5.6 Adult health**

The ELSA life history interview asked about the number of periods of ill health in adulthood that lasted more than a year and went onto ask what conditions were experienced from a list (e.g. diabetes). Most of the same conditions are recorded in each of the NCDS adult sweeps, except for NCDS7 when only a few questions were asked about health. NCDS has asked about health conditions using a list of conditions but without a primer that asks about the length of an illness first. The different way questions on adult health were asked in the ELSA life history and NCDS will make it difficult to compare lifetime prevalence of health conditions. The ELSA life history did ask how ill health affected work, family life and social life, which are not asked in the same way in any sweep of NCDS.

Whether a respondent smoked and the year they started smoking daily and stopped (if applicable) is recorded in the ELSA life history. Comparable information could be derived from each wave of NCDS, except for exact year when a cohort member started smoking daily and the number of years they smoke daily. NCDS has asked about alcohol consumption since age 16 and exercise since age 33. Comparable measures are only available in ELSA prospectively in later life from the main questionnaire.

The year a woman started her menstruations is asked in the ELSA life history and was asked in NCDS2-3 when cohort members were aged 11 and 16. The NCDS biomedical interview at age 45 included a self-completion questionnaire module on gynaecology. This was repeated in the main interview at age 50 (NCDS8) and included questions on year of hysterectomy, year of last period, year started HRT, whether period had stopped before started HRT and whether taking HRT now. These measures are comparable with data collected in the ELSA life history interview.

### **5.7 Other life events**

The ELSA life history interview asked whether respondents have experienced a range of other life events and the age they first happened, including natural disasters and had a partner addicted to drugs or alcohol. There are no comparative measures recorded in NCDS, except for whether a cohort member has ever experienced financial hardship which is similar to a question on personal perceived financial position included in NCDS6-9.

## **6 Life history data – childhood circumstances**

### **6.1 Overview of findings from this section**

- There is considerable overlap in topics covered in the ELSA life histories and NCDS childhood sweeps, but NCDS has much more detailed information in most domains where there is overlap. For example:
  - Accommodation and household composition: NCDS collected detailed information about the household, housing and amenities at each of the childhood sweeps. The ELSA life history asked about a number of characteristics at age 10 that could be compared to NCDS at age 11.
  - Parental socio-economic status: NCDS collected repeated information from birth and throughout childhood on the social class and parental education; and at age 16, a banded measure of parental income, and whether or not the family was in receipt of means tested benefits. The The ELSA main interview includes a retrospective recall of father's occupation at age 14, while the ELSA life history asks about the number of books in the home at age 10 and whether a parent was unemployed before age 16. ELSA respondents are also asked to recall periods of financial hardship in their lives, and this may include during childhood.

- Parental separation and divorce, and relationship quality: both studies captured whether parents had separated or divorced by the time the child was 16, or whether the child was ever separated from his/her mother before 16.
- Childhood health: ELSA contains a small set of summary health measures in childhood including self-reported health in childhood. NCDS collected much more detailed childhood health measures from parents and doctors at each of the childhood sweeps.
- NCDS collected data in some domains that *cannot* be collected retrospectively e.g.
  - NCDS has repeated measures of parents' height and weight, childhood cognitive testing, and behavioural and emotional indices, which are typically powerful predictors of a wide range of later life outcomes.
  - NCDS has detailed information about schools, attitudes and leisure, and contact with services, including welfare clinics and social services, while there is no comparable information in ELSA.

Respondents to the ELSA life history interview were asked about a number of characteristics of the place they lived when they were aged 10: number of bedrooms, number of people living in the residence, relationship with people lived with, amenities and the number of books in the home. Each of these measures were asked in NCDS during the age 11 sweep, except for number of books in the home and the presence of central heating. Central heating was recorded at age 16. NCDS3 also includes a number of other amenities in the home at 16 that are not asked in the ELSA life history including TV, telephone and car. NCDS3 also include bands and source of family income and the language spoken at home when aged 16.

NCDS collected information about a cohort member's parents in selected childhood sweeps including mother's marital status, mother's employment status, mother's father social class, mother and father's social class, school leaving age and net pay, region of origin, height and weight, and mother's usual language. The ELSA life history cannot provide a direct measure of social class in childhood, however, it did ask whether a parent was unemployed for 6 months or more before the age of 16 and the ELSA main questionnaire include the father's main occupation at age 14.

The ELSA life history interview determined whether respondents' parents separated or divorced and whether they were ever separated from their mother before the age of 16. The former was asked in NCDS3 at age 16. Both NCDS and the ELSA prospective questionnaire have asked whether respondents have returned to live with parents or whether they have come to live with respondents in later life and whether their parents are living.

The ELSA life history includes a number of statements about the relationship between a respondent and their parents during childhood. There are few comparable measures collected prospectively in NCDS, except for whether the family had mental illness or alcohol issues. However, a range of similar but not directly comparable retrospective questions about childhood were asked in a retrospective life history self-completion questionnaire given to NCDS cohort members who completed a biomedical interview at age 45.

Childhood general health is measured in the ELSA life history by asking for a self-reported health in childhood and asking whether a respondent missed school, was confined to a bed or was hospitalised for over a month, had a physical limitation for more than 3 months, or had more than 3 inpatient stays in one year. NCDS did not ask self-rated health during the childhood sweeps, but did include a measure that can determine whether a cohort member was confined to a bed. NCDS recorded a number of other health characteristics reported by the mother during childhood including, weight, height, whether breast fed, number health visits and incontinence. The ELSA life history also asked about specific childhood health conditions, each of which have been measured at selected childhood sweeps of NCDS, except for leukaemia and cancers. NCDS asked about a range of less serious conditions (e.g. hay fever) in childhood. There were medical examinations during the child sweeps of NCDS which made direct assessments of height, weight, vision, hearing and balance assessments and reported diagnosis of respiratory, heart, skin, abdomen, urogenital, orthopaedic, neurological, psychiatric or epileptic conditions.

The NCDS childhood sweeps include extensive information about the school a cohort member attended, whether they enjoyed going to school, performance in a range of cognitive tests, teacher and parent<sup>9</sup> assessments at age 7, 11 and 16, and school attainment at age 16. These measures can provide trajectories in cognitive, behavioural and emotional development which would not be possible to measure retrospectively using a life history instrument, such as the one used in ELSA. For example, the Bristol Social Adjustment Guide (BSAG) provides a measure of behaviour in the school setting taken by the teachers of cohort members at age 7 and 11 (Shepherd, 2013).

NCDS2-3 asked about how cohort members spend their spare time, how satisfied they are with the area that they live, whether their family had contact with social services and whether the cohort member received free school meals. The ELSA life history does not include any information about a respondent's school experience, social activity or interaction with social services in childhood.

## **7 Recommendations for the future**

### **7.1 Creation of a set of harmonised NCDS and ELSA variables**

Table 5 provides a list of variables from the main questionnaires in NCDS8-9 and ELSA and the life history interview in ELSA that could be fully harmonised to provide comparative data on later life characteristics. Our next stage of research will be to create a harmonised NCDS-ELSA dataset that would allow researchers to test whether the size of these effects are different when using contemporaneous and retrospective methods to collect information about earlier life circumstances, as well as to test the importance of the childhood information collected in NCDS that it has not been possible to collect retrospectively in ELSA.

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<sup>9</sup> Almost exclusively the mother.

## 8.2 Recommendations for future data collection in NCDS and ELSA

Table 6 provides a list of measures that are included in either NCDS or ELSA, but not in both datasets. When considering future data collections of each study these measures could be added to provide not only comparable data in NCDS and ELSA, but also measures that researchers may find useful when using each dataset independently. Measures which have been collected during the life course in NCDS, which would be appropriate for a future ELSA life history interview, are listed in a separate column from those that could be included in the ELSA main questionnaire.

Many of the measures missing from NCDS that are included in ELSA are specific to older age samples. These measures will become more important in the 1958 birth cohort as they enter later life. For example, old-age specific health conditions, mobility limitations, balance, grip strength, walking speed, reasons for retirement, amount spent on heating, access to public transport and loneliness.

It will also be important for NCDS to collect more comprehensive measures of wealth and other financial indicators relevant to older populations – careful consideration needs to be given as to whether cohort members can give reliable information about their partners. In ELSA, these measures are obtained by interviewing partners.

Measures of wellbeing are notably different in NCDS and ELSA reflecting the point in time that the scales included in each study were devised. ELSA has been able to take advantage of the recent developments in the measurement of wellbeing, whereas NCDS is restricted to earlier measures to maintain a longitudinal record. It will require careful consideration whether NCDS should adopt wellbeing measures covered in ELSA, certainly these should be collected in addition to, rather than at the expense of conceptually similar measures collected in earlier NCDS sweeps.

Continual refreshment samples of ELSA are likely to contain increasing number of ethnic minorities whose first language may not be English. The ELSA main questionnaire could therefore add a question on language. The language spoken in childhood could also be added to any future life history interviews in ELSA.

Other measures that are not currently included in ELSA, which could be added to provide comparable data to NCDS, include hospital visits and the frequency with which people engage in a larger range of social activities, such as sport, evening classes and community groups. ELSA already asks about frequency of meetings with friends and family and going to the cinema, restaurants, museums, theatre and concerts.

The ELSA life history interview asked about smoking history, but there was no other information collected about other health behaviours, such as drinking alcohol or exercise. NCDS has a more complete life long record of these measures. When the ELSA respondents were asked about amenities in the household in childhood, they were not asked whether they had a colour TV, telephone or car, all of which will have been durables which would highlight deprivation within young cohorts in ELSA. These indicators, combined with the amenities included in the ELSA life history, could provide a more complete measure of socioeconomic status than the proxy measure of the number of books in the household.

**Table 5. Comparable measures of later life and life course characteristics**

<b>Later life measures – NCDS8-9/ELSAw1-6</b>	<b>Life course measure NCDS0-9/ELSA life history</b>
<b>Demographic</b>	
Living relatives	Number of natural children
Marital status	Whether had a miscarriage Whether ever married/ separated/ or divorced Number of live in partners Lived in children’s home
<b>Health</b>	
Self-rated health	Whether had chronic conditions in childhood: asthma, headache, diabetes, Epilepsy, fits or seizures, heart trouble
Limiting illness	Smoking history Age menstruation started Started menopause
<b>Health behaviours</b>	
Smoking status	Smoking history
Alcohol consumption	
Exercise frequency	
<b>Psychological wellbeing and cognition</b>	
CASP	
Memory cognition	
Executive cognitive function	
<b>Qualification and employment</b>	
Age left FT education	Time spent in employment
Whether has qualifications	Number of jobs
Economic activity	Whether left a job due to ill health or company closure
Socioeconomic class	Ever experience financial hardship
Pay	
Hours worked	
Job satisfaction/ security	
Pension scheme membership	
Income	
Whether received benefits	
<b>Housing</b>	
Number of times moved	Number of times moved house
Overcrowding	Ever owned a house
Housing tenure	People per room when aged 10/11
Cars in household	Lack of household amenities in childhood Whether parents divorced or separated in childhood
<b>Social participation</b>	
Volunteering	
Cinema, concert, theatre attendance	

**Table 6. Measures that could be added to future data collections of NCDS and ELSA**

<b>NCDS – main questionnaire/ biomedical interview</b>	<b>ELSA – main questionnaire</b>	<b>ELSA – life history</b>
<b>Demographics</b>	<ul style="list-style-type: none"> <li>• National identity</li> <li>• Language</li> </ul>	<ul style="list-style-type: none"> <li>• Language in childhood</li> </ul>
<b>Health</b>	<ul style="list-style-type: none"> <li>• Chronic conditions specific to later age</li> <li>• Mobility limitations</li> <li>• Self-reported eyesight and hearing</li> </ul>	
<b>Health behaviours</b>	<ul style="list-style-type: none"> <li>• Hospital visits</li> </ul>	<ul style="list-style-type: none"> <li>• Life long alcohol consumption</li> <li>• Life long exercise</li> </ul>
<b>Physical examination</b>		
<ul style="list-style-type: none"> <li>• Chair stands</li> <li>• Balance</li> <li>• Grip strength</li> <li>• Leg raise</li> <li>• Walking speed</li> </ul>		
<b>Psychological wellbeing and cognition</b>		
<ul style="list-style-type: none"> <li>• CES-D depression</li> </ul>		
<b>Socioeconomic status</b>		
<ul style="list-style-type: none"> <li>• Reason for retirement</li> <li>• Financial wealth</li> <li>• Financial transfers</li> <li>• Expectations</li> <li>• Starting and final pay of previous jobs</li> </ul>		<ul style="list-style-type: none"> <li>• Type of school attended</li> </ul>
<b>Housing and consumption</b>		
<ul style="list-style-type: none"> <li>• Housing satisfaction</li> <li>• Heating and fuel bills</li> <li>• Food, clothing and leisure expenditure</li> <li>• Durables owned and recently purchased</li> <li>• Health insurance</li> </ul>		<ul style="list-style-type: none"> <li>• HH amenities in childhood (TV, phone, car)</li> </ul>
<b>Social participation</b>		
<ul style="list-style-type: none"> <li>• Access to public transport</li> <li>• UCLA loneliness scale</li> </ul>	<ul style="list-style-type: none"> <li>• Leisure activity frequency</li> </ul>	



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## Appendix Tables

**Table A1. Comparison of NCDS8-9 and ELSA wave 1-6 later life measures**

	NCDS8	NCDS9	ELSA w1-6	Comments
<b>Demographics</b>				
Household membership	✓	✓	✓	
Living parents, siblings, children, grandchildren	✓	✓	✓	NCDS – no information on living siblings
Cause of death of parents	-	-	✓	NCDS – on-going project to link to death registrations
Marital status/ cohabiting	✓	✓	✓	
Non-residential relationships	✓	-	-	ELSA – included in life history
Ethnic group	✓	-	✓	
Country of birth/ year of arrival	-	-	✓	
National identity	✓	-	-	
Home language	✓	-	-	
<b>Physical health</b>				
Self-assessed health	✓	✓	✓	ELSA – HSE categories only in w3
Limiting illness	✓	✓	✓	
Self-assessed eyesight & hearing	-	-	✓	NCDS8-9 – include eye/hearing conditions
Dental health	-	-	✓	ELSA w3&5
Asthma, diabetes, cancer, hypertension,	✓	✓	✓	ELSA – diagnosed; NCDS – self-reported.
Heart problems	-	✓	✓	
Stroke, arthritis, Alzheimer's Disease, dementia,	-	-	✓	
Hayfever, convulsion, backache, chronic fatigue, period, stomach, cough	✓	-	-	
blood, skin condition, bladder or kidney, back,				
Whether taking medication	-	-	✓	ELSA w3 asks if taking medication for high blood pressure, diabetes, high cholesterol and lung condition. ELSA w6 collected polypharmacy data. NCDS biomedical interview includes medication
Location and severity of pain	-	-	✓	
Hospital visits/ days in hospital	✓	-	-	ELSA to be linked to HES
Mobility limitations, ADLs, IADLs	-	-	✓	NCDS –includes SF-36 physical functioning scale
Help with mobility limitations and treatment	-	-	✓	

	NCDS8	NCDS9	ELSA w1-6	Comments
Falls, fractures & replacements	-	-	✓	
Functional aids	-	-	✓	
Incontinence	-	-	✓	
Frequency of use of lunch clubs/ day centres/ meals on wheels	-	-	✓	
Sleep quality	✓	-	✓	ELSA w4 onwards
Menopause	✓	✓	✓	ELSA w4 onwards
Sexual functioning and attitude	-	-	✓	ELSA w6
Cancer screening	-	-	✓	ELSA w5 onwards
SF-36 General health score	✓	-	-	
<b>Health behaviours</b>				
Smoking ever/ frequency	✓	✓	✓	ELSA – asks per weekday and weekend day separately
Whether ever regular smoker	✓	-	-	
Alcohol consumption	✓	✓	✓	
AUDIT scale	✓	-	-	
Frequency of exercise	✓	✓	✓	
Type of physical activity at work	✓	✓	✓	
Fruit and veg consumption	-	-	✓	ELSA w3 onwards
<b>Physical examination</b>				
Self assessment of weight	✓	-	-	
Height and weight	✓	✓	✓	ELSA – only available at nurse visit waves when objectively measured: 2, 4 & 6. NCDS biomedical interview: weight, waist and hip measurements, lung function, visual acuity, hearing thresholds
Waist and hip measurement, blood pressure, lung function, chair stands, balance, grip strength, leg raise	-	-	✓	
Walking speed	-	-	✓	ELSA all waves
<b>Psychological and social wellbeing</b>				
Psychiatric problems	✓	✓	✓	
CES-D scale	-	-	✓	
GHQ-12	-	-	✓	ELSA w1, 3
Malaise scale	✓	-	-	
Warwick Edinburgh Mental Well-Being Scale	✓	-	-	
Life satisfaction (11-point scale)	✓	-	-	
Subjective social status	-	-	✓	
Positive affect	-	-	✓	ELSA w5 onwards
Day construction	-	-	✓	ELSA w6

	NCDS8	NCDS9	ELSA w1-6	Comments
ONS personal wellbeing	-	-	✓	ELSA w6
Age middle age ends/ old age starts	-	-	✓	ELSA w1, 3
Satisfaction With Life Scale	-	-	✓	ELSA w2 onwards
Control and demand	-	-	✓	
Effort-reward balance	-	-	✓	
CASP-19	✓	✓	✓	NCDS8 includes 14 items and NCDS9 includes 6 items.
IPIP personality inventory	✓	-	-	
<b>Cognitive function</b>				
<b>Memory</b>				
Self-rated memory	-	-	✓	
Orientation in time	-	-	✓	
Word list learning	✓	-	✓	
Prospective memory	-	-	✓	
<b>Executive function</b>				
Word-finding	✓	-	✓	ELSA w1-5
Letter cancellation	✓	-	✓	
<b>Basic cognitive skills</b>				
Numerical ability	-	-	✓	ELSA w1, 4, and 6 if not answered before
Literacy	-	-	✓	ELSA w2, 5, and 6 if not answered before
Fluid intelligence	-	-	✓	ELSA w6
<b>Qualifications</b>				
Age left/ finished FT education	✓	-	✓	
Whether has any qualifications/ type/ history	✓	✓	✓	
Derived highest qualifications	✓	✓	✓	ELSA – variable not derived in deposited dataset
Work related training	✓	✓	-	
<b>Employment</b>				
Economic activity	✓	✓	✓	
Main reason stopping job	✓	✓	✓	
Number of jobs	✓	✓	-	
Supervision duties	✓	✓	✓	
Number of employees at work	✓	✓	✓	
SOC 2000	✓	✓	✓	
NS-SEC	✓	✓	✓	
Take-home pay/ gross pay	✓	✓	✓	
Hours worked	✓	✓	✓	ELSA – includes overtime
Reason start work/ taking job	-	-	✓	
Whether job is permanent	✓	✓	✓	
Whether has employees/ number	✓	✓	✓	

	NCDS8	NCDS9	ELSA w1-6	Comments
Self employed net profit	✓	-	✓	
Whether has fixed place of work	✓	-	-	
How long take to travel to work	✓	-	-	
Job satisfaction	✓	-	✓	NCDS 5-points; ELSA 4-point
Job security	✓	✓	✓	NCDS 3-points; ELSA 4-point
Work life balance	✓	-	-	
Age would like to retire	-	-	✓	
Expect to working for same employer in yr	✓	-	-	
Reason for being unemployed/ no job	✓	-	✓	ELSA ask reason for being away from work in last month and reason for leaving previous job
Other job: income & hours	✓	-	✓	
Reason for starting work/ taking job	-	-	✓	
Job history: start and end of last job(s)	✓	✓	✓	
Partner's: economic activity, supervision duties, number of employees, take-home pay, SOC2000, NS-SEC	✓	✓	✓	ELSA only asks whether working & income
<b>Pensions and retirement</b>				
Employer pension	✓	✓	✓	Not sure if NCDS only ask about current employer
Private pension	✓	✓	✓	
Compulsory employer retirement age	-	-	✓	
Why not a member of pension schemes	-	-	✓	NCDS – asks if can't afford or considers to far off
Pension forecast/ expected returns	-	-	✓	
Knowledge of state pension age	-	-	✓	
Age of retirement; early retirement; reason for retirement;	-	-	✓	NCDS - retirement age can be derived from activity history
Whether will have enough money when retire	✓	-	-	
<b>Household income &amp; assets</b>				
State benefits/ type	✓	✓	✓	ELSA ask in last year and now; NCDS9 doesn't provide benefit type
Pensions	✓	✓	✓	
Investments	✓	✓	✓	NCDS more specific about source
Other income	✓	✓	✓	

	NCDS8	NCDS9	ELSA w1-6	Comments
Savings	✓	-	✓	NCDS9 - income
Personal assessment of financial situation	✓	✓	✓	
Better or worse off than a year ago	✓	-	-	
Expects to be better/worse off in a year	✓	-	-	
Assets	-	-	✓	
Lump sums received	-	-	✓	
Debt	-	-	✓	
Net wealth	-	-	✓	
Financial transfer to other people/ orgs	-	-	✓	ELSA w2, w4 onwards
<b>Expectations</b>				
Live to certain age	-	-	✓	
Working after certain age	-	✓	✓	NCDS9 chances working after 60 & 65
Ability to work before reach 65	-	-	✓	
Income adequacy	-	-	✓	
Inheritance	-	-	✓	
House value	-	-	✓	
Move house/ into nursing home	-	-	✓	ELSA w2 & w6 only
Perceived financial position relative to neighbours/ friends/ work colleagues	-	-	✓	
Whether have too little money to do things	-	-	✓	
<b>Housing and consumption</b>				
Year(s) moved/ main reason for move	✓	✓	✓	
Type of accommodation	✓	✓	-	
Number of rooms	✓	✓	✓	
Tenure	✓	✓	✓	
Householder	✓	✓	✓	
Cost of rent	-	-	✓	
Purchased accommodation: year, price paid, from who, ever mortgaged, expected value, outstanding mortgage, year built	-	✓	✓	NCSD9 – value/ mortgage of all property owned
Difficulties paying for accommodation	-	✓	✓	
Adaptions to property	-	-	✓	
Problems with accommodation	-	-	✓	

	NCDS8	NCDS9	ELSA w1-6	Comments
Durables owned in HH, amount spent on durables in last 2 yrs	-	-	✓	Spending since w2
HH spending on groceries/ food outside the home/ clothes and leisure in last 4 weeks	-	-	✓	
Heating system, method of payment for heating/ winter and summer bills	-	-	✓	ELSA w2 onwards
Clothing and Health insurance contributions	-	-	✓	
Transfer (inc charity)	-	-	✓	ELSA w2, 4, 6
<b>Transport</b>				
Cars in HH	✓	✓	✓	ELSA – includes car, van or motorbike
Public transport usage	-	-	✓	
<b>Caring</b>				
Whether cared for someone/ hours spent: spouse; child; grandchild; relative; friend/neighbour; other	✓	✓	✓	NCDS8 – parent or parent in-law only; ELSA asks in last week/ NCDS9- includes grandchildren
Reason for/ satisfaction with caring	-	✓	✓	
Volunteering	✓	✓	✓	
Reason for/ satisfaction with voluntary work	-	✓	✓	
<b>Social and civic participation</b>				
Religion	✓	-	✓	ELSA – w5 only
Voting	✓	✓	✓	NCDS8-9 asks who you voted for
Reads newspaper	-	-	✓	
Hobby	-	-	✓	
Holiday in UK/ abroad	-	-	✓	
Uses internet	✓	✓	✓	NCDS8 – specifies for other than work; ELSA w6 onwards asks how and why use internet
TV watching	-	-	✓	ELSA w4 onwards
Work in the garden	✓	-	-	
DIY	✓	-	-	
Ever member/ currently member/ how often takes part of a organisations, club or societies	✓	-	✓	ELSA – only indicates current membership and not frequency
Attend meetings for orgs	✓	✓	✓	ELSA – ask number meeting attend in last year



	NCDS8	NCDS9	ELSA w1-6	Comments
How often goes/ like to go more often:				NCDS – only asks how often
Watch sport	✓	-	-	
Play sport	✓	✓	-	ELSA asks whether member of sport club
Cinema	✓	✓	✓	
Restaurant	✓	✓	✓	
Concert or live performance	✓	✓	✓	
Art gallery or museum	-	-	✓	
Evening class, keep fit, yoga	✓	✓	-	
Drink in a pub	✓	-	-	
Meet/ phone/ write parents/ children outside HH/ other family/ friends	✓	-	✓	ELSA – children, family, friends NCDS8 – meet and phone parents/ meet absent children/ meet, phone, write friends in last 2 weeks
Social support				
Revised UCLA loneliness scale	-	-	✓	
Area satisfaction	✓	-	✓	NCDS – neighbourhood; ELSA – area (w1 only)
Provision of unpaid help	-	-	✓	ELSA w4 onwards
Support from other people	✓	-	✓	Question wording differences in NCDS and ELSA
Close relationships with partner/ parents/ children/ other family friends	✓	-	✓	ELSA asks about partner, children, other family and friends NCDS – only asks about parents and how happy relationship is with partner
Who prepares meals/ shops/ looks after bills/ children	✓	-	✓	
Trust in people	✓	-	-	

**Table A2. Comparison of ELSA Life history measures and NCDS contemporaneous and retrospective measures**

		ELSA	NCDS (✓ = comparable) (✓ ✓ = could be derived) (* = available from history file)										
Wave/ sweep		3	0	1	2	3	4	5	6	Bio	7	8	9
Year		2006	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013
Age		50+	Birth	Age 7	Age 11	Age 16	Age 23	Age 33	Age 42	Age 45	Age 46	Age 50	Age 55
<b>Children &amp; fertility</b>													
	How many children ever had (natural, adopted, step son/daughter, fostered)	✓	-	-	-	-	✓ ✓ <sup>10</sup>	✓ ✓ <sup>9</sup>	✓ ✓ <sup>9</sup>	✓ <sup>9</sup>	✓ ✓ <sup>9</sup>	✓ ✓ <sup>9</sup>	✓ ✓
	Sex	✓	-	-	-	-	✓	✓	✓	-	✓	✓	✓
	Year of birth <sup>11</sup>	✓	-	-	-	-	✓	✓	✓	-	✓	✓	✓
	Birth weight	-	-	-	-	-	✓	✓	✓ <sup>12</sup>	-	✓ <sup>11</sup>	✓ <sup>11</sup>	-
	Year adopted (if applicable)	✓	-	-	-	-	-	-	✓ <sup>12</sup>	-	✓ <sup>12</sup>	✓ <sup>13</sup>	✓ <sup>12</sup>
	Whether present for most of child's childhood	✓	-	-	-	-	✓ ✓ <sup>14</sup>	✓ ✓ <sup>13</sup>	✓ ✓ <sup>13</sup>	-	✓ ✓ <sup>13</sup>	✓ ✓ <sup>13</sup>	✓ ✓ <sup>13</sup>
	Year died (if applicable)	✓	-	-	-	-	✓ ✓	✓	-	-	-	✓ <sup>15</sup>	✓
	Age left FT education	-	-	-	-	-	-	-	✓	-	✓	✓	-
	Whether fostered & number of years	✓	-	-	-	-	-	✓ ✓ <sup>16</sup>	✓ ✓ <sup>15</sup>	-	✓ ✓ <sup>15</sup>	✓ ✓ <sup>15</sup>	✓ ✓
	Miscarriages: number, year, months pregnant, how pregnancy ended	✓	-	-	-	-	✓ <sup>17</sup>	✓	✓ <sup>16</sup>	-	✓ <sup>16</sup>	✓ <sup>16</sup>	-
	Grandchildren	✓ <sup>18</sup>	-	-	-	-	-	-	✓	-	✓	✓	✓

<sup>10</sup> NCDS4-8 own, adopted, foster children in HH can be derived from relationship to cohort member. 2003 Biomedical self-completion asks how many children ever had. NCDS7-9 asks number of own children, adopted children, partner's children, foster children and grandchildren that left HH since last sweep. Also asks about absent children.

<sup>11</sup> NCDS includes month of birth

<sup>12</sup> New borns only

<sup>13</sup> Age adopted children began living with CM

<sup>14</sup> NCDS4 asks whether lives with child and how long child has lived away; NCDS5 ask whether lives with child. NCDS6 asks whether lives, ever, and last lived with CM. NCDS7 asks when last lived with absent child and whether new borns lives in household. NCDS8 whether new borns live with CM.

<sup>15</sup> Whether new born still alive

<sup>16</sup> Cannot derive number of years in NCDS

<sup>17</sup> Only includes number of miscarriages and how ended

<sup>18</sup> ELSA - in the main questionnaire.

	ELSA	NCDS (✓ = comparable) (✓ ✓ = could be derived) (* = available from history file)											
Wave/ sweep	3	0	1	2	3	4	5	6	Bio	7	8	9	
Year	2006	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013	
Age	50+	Birth	Age 7	Age 11	Age 16	Age 23	Age 33	Age 42	Age 45	Age 46	Age 50	Age 55	
<b>Partners</b>													
<b><i>Cohabiting partner(s)</i><sup>19</sup></b>													
Year started living together	✓	-	-	-	-	✓ *	✓ *	✓ *	-	✓ *	✓ *	✓ *	
Whether married (year, timing compared with cohabitation)	✓	-	-	-	-	✓ *	✓ *	✓ *	-	✓ *	✓ *	✓ *	
Whether religious or civil ceremony	✓	-	-	-	-	-	-	-	-	-	-	-	
Reason relationship ended (relationship breakdown, partner died, partner moved into nursing home, other)	✓	-	-	-	-	-	-	-	-	-	-	-	
Year widow/partner died	✓	-	-	-	-	-	✓ *	✓ *	-	✓ *	✓ *	✓ *	
Year cohabitation ended	✓	-	-	-	-	✓ *	✓ *	✓ *	-	✓ *	✓ *	✓ *	
Year of divorce	✓	-	-	-	-	✓ *	✓ *	✓ *	-	✓ *	✓ *	✓ *	
<b><i>Non-cohabiting 'long-term' partner</i></b>													
Year started/ ended relationship	✓	-	-	-	-	-	-	-	-	✓	✓ 20	-	
<b>Accommodation</b>													
Whether had spell in a children's home	✓	-	✓ 21	✓ 20	✓ 20	✓ 20	-	-	-	-	-	-	
Whether had spell in a foster care	✓	-	✓	-	-	-	-	-	-	-	-	-	
Whether had spell in a prison	✓	-	-	-	-	✓ 22	✓ 21	✓ 21	-	✓ 21	✓ 21	✓ 21	
Whether had spell in a tb institution	✓	-	-	-	-	-	-	-	-	-	-	-	
Whether had spell in a psychiatric hospital	✓	-	-	-	-	✓ 21	✓ 21	✓ 21	-	✓ 21	✓ 21	✓ 21	

<sup>19</sup> Partnership histories file (1974-2008) includes all live-in relationships lasting 1 month or more – asked for all previous relationships in NCDS5 and compared to previous sweep thereafter. NCDS4 only asks for details about the last two cohabitations/marriages. All NCDS partnership data have month and year of relationship.

<sup>20</sup> NCDS asks whether in non-residential relationship and it's length or longest been in non-residential relationship, but not start and end date

<sup>21</sup> NCDS1 duration in care (6 months or less) and age placed in care. NCDS2-3 in LA care or voluntary service care (ever and now). NCDS4 ask whether ever in care as child and age first entered and left.

<sup>22</sup> NCDS4-9 ask residence, including prison or hostel or hospital and separately whether ever been homeless. NCDS6 ask whether been homeless since X, no. times, month/year began and why moved out of last residence. NCDS8 ask whether moved to current address after period of homelessness. NCDS9 ask whether been permanently homeless since 2004.

	ELSA	NCDS (✓ = comparable) (✓ ✓ = could be derived) (* = available from history file)											
Wave/ sweep	3	0	1	2	3	4	5	6	Bio	7	8	9	
Year	2006	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013	
Age	50+	Birth	Age 7	Age 11	Age 16	Age 23	Age 33	Age 42	Age 45	Age 46	Age 50	Age 55	
Whether been homeless for more than a month	✓	-	-	-	-	✓ 21	✓ 21	✓ 21	-	-	✓ 21	✓ 21	
Whether evacuated or prisoner of wars	✓	-	-	-	-	-	-	-	-	-	-	-	
Whether lived outside UK for 6 months or more	✓	-	-	-	-	-	-	-	-	✓ 23	-	✓ 22	
Places lived for > 6 months (year started, in UK, tenure, type of non-private residence, year stopped, address/town)	✓	-	✓ 24	✓ 23	✓ 23	✓ 23	✓ 23	✓ 23	✓ 23	✓ 23	✓ 23	✓ 23	
<b>House characteristics when aged 10</b>													
Number of bedrooms	✓	✓	✓ 25	✓ 24	✓ 24	-	-	-	-	-	✓ 24	-	
Number of people lived in residence	✓	-	✓	✓	✓	-	-	-	-	-	✓ 24	-	
Relationship with people lived with: mother/ father/ siblings/ grandparents/ other relative/ other	✓	-	-	✓ ✓ 26	✓ ✓	-	-	-	-	-	-	-	
Bath	✓	-	✓ 27	✓ 26	✓ 26	-	-	-	-	-	-	-	
Running water	✓	-	-	-	-	-	-	-	-	-	-	-	
Hot water	✓	-	✓	✓	✓	-	-	-	-	-	-	-	
Inside toilet	✓	-	✓	-	✓	-	-	-	-	-	-	-	
Outside toilet	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Cooking facilities	-	-	✓	✓	-	-	-	-	-	-	-	-	
Garden	-	-	✓	-	-	-	-	-	-	-	-	-	
Central heating	✓	-	-	-	✓	-	-	-	-	-	-	-	
Colour TV	-	-	-	-	✓	-	-	-	-	-	-	-	

<sup>23</sup> Returned from abroad. Whether living abroad since 2004.

<sup>24</sup> NCDS1 asked whether moves out of local area (tenure at time). NCDS2-3 asked no. family moves since birth (tenure and floor at NCDS2-3). NCDS4 asked date leaving home, current tenure and tenure on first move from home and who living with at up to 6 last addresses. NCDS5 ask number of address since 16, date move in and out, type (e.g. terraced), tenure and who living with. NCDS6 places lived for 1 month+ since date X: year/month moved in and out, tenure and reason moved out. NCDS7 year/month moved in and out and current tenure. NCDS8-9 ask year/month moved in and out, and reason moved out.

<sup>25</sup> NCDS0 ask number people per room. NCDS1-3 asks number of rooms. NCDS8 asked number of people living in house and no. rooms at age 11.

<sup>26</sup> NCDS2 ask about mother & father figure. NCDS1-3 should be able determine whether mother or father present

<sup>27</sup> NCDS1-3 ask about bathroom

		ELSA	NCDS (✓ = comparable) (✓ ✓ = could be derived) (* = available from history file)										
	Wave/ sweep	3	0	1	2	3	4	5	6	Bio	7	8	9
	Year	2006	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013
	Age	50+	Birth	Age 7	Age 11	Age 16	Age 23	Age 33	Age 42	Age 45	Age 46	Age 50	Age 55
Fridge		-	-	-	-	✓	-	-	-	-	-	-	-
Freezer		-	-	-	-	✓	-	-	-	-	-	-	-
Telephone		-	-	-	-	✓	-	-	-	-	-	-	-
A Car		-	-	-	-	✓	-	-	-	-	-	-	-
Source of family income		-	-	-	✓	✓	-	-	-	-	-	-	-
Number of books in home <sup>28</sup>		✓	-	-	-	-	-	-	-	-	-	-	-
Language spoken at home		-	-	-	-	✓	-	-	-	-	-	-	-
<b>Parents</b>													
Mother's age		✓ 15	✓	-	-	-	-	-	-	-	-	-	-
Mother's husband's age		-	✓	-	-	-	-	-	-	-	-	-	-
Mother's marital status		-	✓	-	-	-	-	-	-	-	-	-	-
Mother employment status		-	✓	✓	✓ 29	✓	-	-	-	-	-	-	-
Mother's social class (GRO 1970)		-	-	-	-	✓	-	-	-	-	-	-	-
Mother's fathers social class (GRO 1951)		-	✓	-	-	-	-	-	-	-	-	-	-
Father's or male head social class		✓ 29	✓ 29	✓ 30	✓ 29	✓ 29	-	-	-	-	-	-	-
Mother school leaving age		-	✓ 31	-	-	✓	-	-	-	-	-	-	-
Father's school leaving age		-	-	✓ 30	-	✓	-	-	-	-	-	-	-
Mother/ fathers net pay		-	-	-	-	✓	-	-	-	-	-	-	-
Mother's usual language English		-	-	✓	-	-	-	-	-	-	-	-	-
Mother/ fathers GB region/ World region of birth		-	-	-	✓	✓	-	-	-	-	-	-	-
Mother/ fathers height and weight		-	✓ 32	-	✓	-	-	-	-	-	-	-	-

<sup>28</sup> NCDS0-3 asks mother and father's social class.

<sup>29</sup> NCDS2 - currently and since 1965

<sup>30</sup> NCDS0 ask about mother's husband – GRO1951. NCDS1 – GRO 1961, NCDS2- GRO 1966, NCDS GRO 1970. ELSA asks father's main job when aged 14 in main questionnaire.

<sup>31</sup> NCDS0 whether stayed on at school

<sup>32</sup> NCDS0 – mum only.

	ELSA	NCDS (✓ = comparable) (✓ ✓ = could be derived) (* = available from history file)											
Wave/ sweep	3	0	1	2	3	4	5	6	Bio	7	8	9	
Year	2006	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013	
Age	50+	Birth	Age 7	Age 11	Age 16	Age 23	Age 33	Age 42	Age 45	Age 46	Age 50	Age 55	
Births to mother/ child's birth position	-	✓	✓	✓	✓ ✓	-	-	-	-	-	-	-	
Age of mothers 1 <sup>st</sup> menstruation	-	-	-	✓	-	-	-	-	-	-	-	-	
Whether parents permanently separated or divorced before 16	✓	✓ <sup>33</sup>	-	-	✓ <sup>32</sup>	-	✓	-	-	-	-	-	
Year parents separated (if applicable)	✓	-	-	-	-	-	-	-	-	-	-	-	
Whether separated from mother for 6 months or more before 16	✓	-	✓ <sup>34</sup>	✓ <sup>33</sup>	-	-	-	-	-	-	-	-	
Year & reason separated from mother	✓	-	-	✓	-	-	-	-	-	-	-	-	
Year stopped living with parents	✓	-	-	-	-	✓	✓ ✓ <sup>35</sup>	-	-	-	-	-	
Mother/father living with respondent	✓ <sup>15</sup>	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓	-	✓ ✓	✓ ✓	✓ ✓	
Mother/ father living	✓ <sup>15</sup>	✓ ✓	✓ ✓	✓ ✓	✓ ✓	✓	-	✓	-	✓	✓ <sup>35</sup>	✓ <sup>36</sup>	
<b>Self-completion parental questions ask of mother &amp; father describing relationship before age 16</b>													
Let me do the things I like doing	✓	-	-	-	-	-	-	-	-	-	-	-	
Seemed emotionally cold to me	✓	-	-	-	-	-	-	-	✓ <sup>37</sup>	-	-	-	
Appeared to understand my problems and worries	✓	-	-	-	-	-	-	-	-	-	-	-	
Liked me to make my own decision	✓	-	-	-	-	-	-	-	-	-	-	-	
Made me feel I was not wanted	✓	-	-	-	-	-	-	-	✓ <sup>38</sup>	-	-	-	
Tried to make me dependent on her/him	✓	-	-	-	-	-	-	-	-	-	-	-	
Was overprotective of me	✓	-	-	-	-	-	-	-	-	-	-	-	

<sup>33</sup> NCDS0 ask mother current marital status. NCDS1 ask whether family divorced or separation. NCDS3 asked whether both parents at NCDS1-3.

<sup>34</sup> Mother figure (natural or other)

<sup>35</sup> NCDS5 asks year last lived with parents and whether moved so could determined when left.

<sup>36</sup> NCDS8-9 asks whether mother and father live together

<sup>37</sup> 2003 Biomedical CASI asked how affectionate was your mother or father figure (a lot, somewhat, a little, not a lot) up to age of 16

<sup>38</sup> 2003 Biomedical CASI asked whether was neglected in childhood

	ELSA	NCDS (✓ = comparable) (✓ ✓ = could be derived) (* = available from history file)											
Wave/ sweep	3	0	1	2	3	4	5	6	Bio	7	8	9	
Year	2006	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013	
Age	50+	Birth	Age 7	Age 11	Age 16	Age 23	Age 33	Age 42	Age 45	Age 46	Age 50	Age 55	
When under 16 parents drank excessively/took drugs/had mental health problems	✓	-	✓ <sup>39</sup>	✓ <sup>38</sup>	-	-	-	-	✓ <sup>40</sup>	-	-	-	
When under 16 had physical abuse from parents	✓	-	-	-	-	-	-	-	✓ <sup>41</sup>	-	-	-	
When under 16 either parent was unemployed for more than 6 months when wanted to be working	✓	-	✓ <sup>42</sup>	✓ <sup>41</sup>	✓ <sup>41</sup>	-	-	-	-	-	-	-	
When under 16 parents argued or fought very often	✓	-	-	-	✓ <sup>43</sup>	-	-	-	✓ <sup>42</sup>	-	-	-	
Happy childhood	-	-	-	-	-	-	-	-	✓ <sup>44</sup>	-	-	-	
Parents did the best for me	-	-	-	-	-	-	-	-	✓ <sup>43</sup>	-	-	-	
Neglected	-	-	-	-	-	-	-	-	✓ <sup>43</sup>	-	-	-	
Strict, authorities or regimented upbringing	-	-	-	-	-	-	-	-	✓ <sup>43</sup>	-	-	-	
Verbally abused by a parent	-	-	-	-	-	-	-	-	✓ <sup>43</sup>	-	-	-	
Suffered humiliation, ridicule, bullying or mental cruelty from a parent	-	-	-	-	-	-	-	-	✓ <sup>43</sup>	-	-	-	
Witnessed physical or sexual abuse of other in family	-	-	-	-	-	-	-	-	✓ <sup>43</sup>	-	-	-	
Received too much physical punishment/ other mistreatment	-	-	-	-	-	-	-	-	✓ <sup>43</sup>	-	-	-	
Sexually abused by a parent	-	-	-	-	-	-	-	-	✓ <sup>43</sup>	-	-	-	
Received another type of mistreatment by parents	-	-	-	-	-	-	-	-	✓ <sup>43</sup>	-	-	-	
Had a normal upbringing	-	-	-	-	-	-	-	-	✓ <sup>43</sup>	-	-	-	

<sup>39</sup> NCDS1-2 ask whether family has had mental illness or mental subnormality, and alcohol difficulties.

<sup>40</sup> NCDS 2003 Biomedical CASI asked whether mother or father suffered from nervous or emotional problems or depression/ trouble with drinking or drugs up to age of 16

<sup>41</sup> NCDS 2003 Biomedical CASI asked whether was verbally abused/ suffered humiliation or bullying/ physical abused/ sexually abused by parent up to age of 16

<sup>42</sup> NCDS1 whether father was unemployed. NCDS2-3 weeks off work through unemployment.

<sup>43</sup> Argue with parents about friends, dress, bed-time, places visited, homework, smoking, drinking. NCDS 2003 biomedical CASI asks whether conflict in the household while growing up up to age 16

<sup>44</sup> NCDS 2003 Biomedical CASI with yes/no responses

	ELSA	NCDS (✓ = comparable) (✓ ✓ = could be derived) (* = available from history file)											
Wave/ sweep	3	0	1	2	3	4	5	6	Bio	7	8	9	
Year	2006	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013	
Age	50+	Birth	Age 7	Age 11	Age 16	Age 23	Age 33	Age 42	Age 45	Age 46	Age 50	Age 55	
<b>Work history<sup>45</sup></b>													
Age left education (uses feed forward from main interview)	✓	-	-	-	-	✓ <sup>46</sup>	-	✓	-	-	✓	-	
Qualifications, year obtained, funding	✓ <sup>15, 47</sup>	-	-	-	-	✓	✓	✓	-	✓	✓	✓	
Work related training	✓ <sup>15</sup>	-	-	-	-	✓	✓	✓	-	✓	✓	-	
Whether ever done paid work of 6 months or more	✓	-	-	-	-	✓ ✓ *	✓ ✓ *	✓ ✓ *	-	✓ ✓ *	✓ ✓ *	✓	
Time period between education and first job (none, 3 months or more, later before finished education)	✓	-	-	-	-	✓ ✓	✓ ✓	✓ ✓	-	✓ ✓	✓ ✓	-	
Year started job	✓	-	-	-	-	✓ *	✓ *	✓ *	✓	✓ *	✓ *	✓	
Employee or self employed	✓	-	-	-	-	✓ *	✓ *	✓ *	✓	✓ *	✓ *	✓	
Full time/ part time	✓	-	-	-	-	✓ *	✓ *	✓ *	-	✓ *	✓ *	✓	
Starting income (excludes self-employed)	✓	-	-	-	-	✓ <sup>48</sup>	✓ <sup>47</sup>	-	-	-	-	-	
Year ended	✓	-	-	-	-	✓ *	✓ *	✓ *	-	✓ *	✓ *	✓	
Time period to next job (straight after, gap of 3 months or more, started next job before last job ended, never worked again)	✓	-	-	-	-	✓ *	✓ *	✓ *	-	✓ *	✓ *	✓ ✓	
Situation before starting next job (unemployed & looking for work, unemployed & not looking for work, short-term job, sick or disabled, retired, education or training, voluntary work, other)	✓	-	-	-	-	✓ *	✓ *	✓ *	-	✓ *	✓ *	✓	
SEG/Soc90/ Soc2000/NS-SeC code	-	-	-	-	-	✓ *	✓ *	✓ *	-	✓ *	✓ *	✓	

<sup>45</sup> Activity histories file (1974-2008) includes work and non-work activities lasting 1 month or more from NCDS4 onwards. Focus of the questions has changed over time: work activities engaged in since leaving school (sweep 4 aged23); work and non-work activities engaged in since leaving school (sweep 5 aged 33); work and non-work activities engaged in since the last sweep (sweep6 aged 42); work and non-work activities engaged in since the last sweep or aged 16 (sweep7 aged 46) work and non-work activities engaged in since 2000, or 2004 if included in sweep7 (sweep8 aged 50).

<sup>46</sup> Date left school/ 6<sup>th</sup> form college – month and year.

<sup>47</sup> ELSA includes highest qualification and qualifications obtained since HSE interview. NCDS include highest qualification and qualifications obtained between each interview as well as funding source.

<sup>48</sup> Net pay of current and last job



	ELSA	NCDS (✓ = comparable) (✓ ✓ = could be derived) (* = available from history file)											
Wave/ sweep	3	0	1	2	3	4	5	6	Bio	7	8	9	
Year	2006	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013	
Age	50+	Birth	Age 7	Age 11	Age 16	Age 23	Age 33	Age 42	Age 45	Age 46	Age 50	Age 55	
Final income at end of main career (excludes self-employed)	✓	-	-	-	-	✓ <sup>49</sup>	✓ <sup>48</sup>	✓ <sup>48</sup>	-	✓ <sup>48</sup>	✓ <sup>48</sup>	✓ <sup>48</sup>	
Which jobs left due to ill health or disability	✓	-	-	-	-	✓*	✓*	✓*	-	✓*	✓*	✓	
Which jobs left due to company closure	✓	-	-	-	-	✓*	✓*	✓*	-	✓*	✓*	✓	
Reason left (temporary job, firm closed, redundancy; sacked; pregnant [from NCDS5], left of own accord, other)	-	-	-	-	-	✓*	✓*	✓*	-	✓*	✓*	✓	
Business profit	-	-	-	-	-	-	-	✓	-	-	✓	-	
Business assets	-	-	-	-	-	✓	✓	-	-	-	-	-	
No. of employees	-	-	-	-	-	✓	✓	✓	-	✓	✓	✓	
No. of people at workplace	-	-	-	-	-	-	-	✓	-	✓	✓	✓	
Hours worked	-	-	-	-	-	✓	✓	✓	-	✓	✓	✓	
Job satisfaction/ current and last job	-	-	-	-	-	✓	-	✓ <sup>50</sup>	-	✓ <sup>49</sup>	✓ <sup>469</sup>	✓	
Job security	-	-	-	-	-	✓	-	✓	-	-	✓	✓	
Time required to travel to work	-	-	-	-	-	-	✓	✓	-	✓	✓	-	
Ever worked in place with a lot of dust	-	-	-	-	-	-	-	-	✓	-	-	-	
Ever worked in a place that so noisy you had to shout	-	-	-	-	-	-	-	-	✓	-	-	-	
<b>Health history</b>													
Whether had injury which had permanent effect on daily life	✓	-	-	-	-	✓ <sup>51</sup>	✓ <sup>50</sup>	-	-	-	✓ <sup>50</sup>	✓ <sup>50</sup>	
Year received injury	✓	-	-	-	-	✓	✓	-	-	-	-	-	
<b>Childhood health (age &lt; 16)</b>													
Self-reported health (Excellent, very good, good, fair, poor)	✓	-	-	-	-	-	-	-	-	-	-	-	
Missed school for over a month	✓	-	✓ <sup>51</sup>	✓ <sup>52</sup>	✓ <sup>51</sup>	-	-	-	-	-	-	-	

<sup>49</sup> Pay at current job

<sup>50</sup> Current job only

<sup>51</sup> NCDS4-5 ask whether have permanent disability due to any accident and separately asks age at onset and whether it limits daily activities. NCDS8-9 ask whether has eyesight problem due to injury

<sup>52</sup> NCDS1 has % half days attendance & attendance %. NCDS2 has no half days attended/ absent and weeks off in past year. NCDS has attendance as % of maximum. NCDS2-3 asks time off for ill health (< week, week-month, 1-3 months, >3 months).

	ELSA	NCDS (✓ = comparable) (✓ ✓ = could be derived) (* = available from history file)											
Wave/ sweep	3	0	1	2	3	4	5	6	Bio	7	8	9	
Year	2006	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013	
Age	50+	Birth	Age 7	Age 11	Age 16	Age 23	Age 33	Age 42	Age 45	Age 46	Age 50	Age 55	
Physical activities restricted for more than 3 months	✓	-	✓ <sup>53</sup>	✓ <sup>52</sup>	✓ <sup>52</sup>	-	-	-	-	-	-	-	
Confined to bed for more than a month	✓	-	-	-	-	-	-	-	-	-	-	-	
Hospitalised for more than month	✓	-	✓ <sup>54</sup>	✓ <sup>53</sup>	✓ <sup>53</sup>	-	-	-	-	-	-	-	
Had more then 3 inpatient stays in one year	✓	-	-	✓ <sup>55</sup>	✓ <sup>54</sup>	-	-	-	-	-	-	-	
Duration of/ complications in pregnancy	-	✓	-	-	-	-	-	-	-	-	-	-	
Mother's smoking prior/ during pregnancy	-	✓	-	-	-	-	-	-	-	-	-	-	
Breast fed	-	-	✓	-	-	-	-	-	-	-	-	-	
Weight	-	✓	✓	✓	✓	-	-	-	-	-	-	-	
Height	-	-	✓	✓	✓	-	-	-	-	-	-	-	
No. of cigarettes mother/ father smokes	-	-	-	-	✓	-	-	-	-	-	-	-	
Immunisations	-	-	✓	-	✓	-	-	-	-	-	-	-	
Walking by 1.5 years and talking by 2 years	-	-	✓	-	-	-	-	-	-	-	-	-	
Health visits	-	-	✓ <sup>56</sup>	✓	✓	-	-	-	-	-	-	-	
Visited dentist in last year	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Dental gas	-	-	✓	-	-	-	-	-	-	-	-	-	
Incontinence	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Sleeping and eating behaviour	-	-	✓	-	✓	-	-	-	-	-	-	-	
Mothers assessment of behaviour (e.g. sucks thumb)	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Swallowed poison	-	-	-	✓	-	-	-	-	-	-	-	-	
<b>Childhood health conditions age &lt; 16</b>												-	

<sup>53</sup> NCDS1 asks whether has physical disability. NCDS2 asks child has poor physical coordination. NCDS3 ask is child handicapped or disabled and type, and whether has physical abnormality.

<sup>54</sup> NCDS1&3 asks whether had hospital admission by reason. NCDS2-3 ask ever hospitalized overnight and no. of times

<sup>55</sup> NCDS2 asks no. of times hospitalized. NCDS3 asks no. times in last year

<sup>56</sup> NCDS1 – physio, speech therapy, audiology, dentist other

		ELSA	NCDS (✓ = comparable) (✓ ✓ = could be derived) (* = available from history file)										
	Wave/ sweep	3	0	1	2	3	4	5	6	Bio	7	8	9
	Year	2006	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013
	Age	50+	Birth	Age 7	Age 11	Age 16	Age 23	Age 33	Age 42	Age 45	Age 46	Age 50	Age 55
	infectious disease (e.g. measles, chickenpox, mumps, polio, TB)	✓	-	✓ <sup>57</sup>	✓ <sup>56</sup>	-	-	-	-	-	-	-	-
	broken bones, fractures	✓	-	-	✓ <sup>58</sup>	-	-	-	-	-	-	-	-
	Asthma	✓	-	✓	✓	✓	-	-	-	-	-	-	-
	Allergies other than asthma	✓	-	-	-	-	-	-	-	-	-	-	-
	Respiratory problems	✓	-	✓ <sup>59</sup>	-	✓	-	-	-	-	-	-	-
	Chronic ear problems	✓	-	✓ <sup>60</sup>	✓ <sup>59</sup>	✓ <sup>59</sup>	-	-	-	-	-	-	-
	Headache	✓	-	✓ <sup>61</sup>	✓ <sup>60</sup>	✓ <sup>60</sup>	-	-	-	-	-	-	-
	Epilepsy, fits or seizures	✓	-	✓ <sup>62</sup>	✓ <sup>61</sup>	✓ <sup>61</sup>	-	-	-	-	-	-	-
	Emotional problems	✓	-	✓ <sup>63</sup>	✓ <sup>62</sup>	✓ <sup>62</sup>	-	-	-	-	-	-	-
	Appendicitis	✓	-	-	✓ <sup>64</sup>	✓ <sup>63</sup>	-	-	-	-	-	-	-
	Childhood diabetes	✓	-	✓ <sup>65</sup>	-	✓ <sup>64</sup>	-	-	-	-	-	-	-
	Heart trouble	✓	-	✓	✓	✓	-	-	-	-	-	-	-
	Leukaemia or lymphoma	✓	-	-	-	-	-	-	-	-	-	-	-
	Cancer (excluding minor skin cancers)	✓	-	-	-	-	-	-	-	-	-	-	-
	Other serious health condition	✓	-	✓ ✓	✓ ✓	✓ ✓	-	-	-	-	-	-	-

<sup>57</sup> NCDS1-2 mothers report in separate items: measles, whooping cough, chicken pox, mumps, scarlet fever, glandular fever and TB.

<sup>58</sup> NCDS2 ask whether had any fractures.

<sup>59</sup> NCDS1&3 asks whether has abnormal respiratory system

<sup>60</sup> NCDS1 ask whether hearing difficult suspected or confirmed, doctors assessment of hearing (normal, some impairment, impaired. Severe impairment). NCDS2 ask whether good hearing in both ears, age when poor hearing first noted, whether an earing aid worn, and whether affect schooling. NCDS3 ask ever worn hearing aid, doctor assessment of hearing.

<sup>61</sup> NCDS1 ask whether frequent. NCDS2-3 ask any headaches in past year

<sup>62</sup> NCDS1 ask severity and type of epileptic condition. NCDS2 ask whether had an attached, age at first and most recent. NCDS3 asks about severity.

<sup>63</sup> NCDS1&3 asks about mental retardation severity. NCDS2 asks about mental backwardness.

<sup>64</sup> NCDS2 ask whether had appendix removed and age. NCDS3 asks how hold when had appendix out.

<sup>65</sup> NCDS1&3 asks about severity of diabetes.

	ELSA	NCDS (✓ = comparable) (✓ ✓ = could be derived) (* = available from history file)											
Wave/ sweep	3	0	1	2	3	4	5	6	Bio	7	8	9	
Year	2006	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013	
Age	50+	Birth	Age 7	Age 11	Age 16	Age 23	Age 33	Age 42	Age 45	Age 46	Age 50	Age 55	
Year first experienced condition(s)	✓	-	✓ <sup>66</sup>	✓ <sup>65</sup>	✓ <sup>65</sup>	-	-	-	-	-	-	-	
Whether condition(s) lasted more than year	✓	-	✓ <sup>65</sup>	✓ <sup>65</sup>	✓ <sup>65</sup>	-	-	-	-	-	-	-	
Vomiting	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Hayfever	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Abdominal pains	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Tics or habit spasms	-	-	✓	✓		-	-	-	-	-	-	-	
Travel sickness	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Mouth ulcers	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Herina	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Severe acne	-	-	-	-	✓	-	-	-	-	-	-	-	
Psoriasis	-	-	-	✓	✓	-	-	-	-	-	-	-	
Eye problems	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Pneumonia	-	-	✓	-	-	-	-	-	-	-	-	-	
Eczema	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Physical handicap	-	-	✓	✓	✓	-	-	-	-	-	-	-	
<b>Medical examination: conditions, physical attributes age &lt;16</b>													
Conditions, physical tests, hearing threshold	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Prescribed medicine	-	-	-	✓	-	-	-	-	-	-	-	-	
Ever seen specialist for condition	-	-	✓	✓	✓	-	-	-	-	-	-	-	
<b>Adult Health (age 16+)</b>													
Number periods of ill health	✓	-	-	-	✓ <sup>67</sup>	✓ <sup>66</sup>	✓ <sup>66</sup>	✓ <sup>66</sup>	✓ <sup>66</sup>	-	✓ <sup>66</sup>	✓ <sup>66</sup>	✓ <sup>66</sup>
Reason for ill health: osteoporosis, angina, heart disease, diabetes, stroke, asthma, respiratory problems, severe	✓	-	-	-	✓	✓ <sup>68</sup>	✓ <sup>67</sup>	✓ <sup>67</sup>	✓ <sup>67</sup>	-	-	✓ <sup>67</sup>	✓ <sup>67</sup>

<sup>66</sup> NCDS1-3 – time available for selected conditions

<sup>67</sup> NCDS3-9 asks about illness in last 12 months.

<sup>68</sup> NCDS4 asks whether had migraines, asthma, or convulsion, since 16 and whether in last 12 months. Eczema or hay fever in last 12 months. Psychological problems since 16 and age saw specialist. NCDS5-6 & 8 asks ever and in last 12 month had: arthritis, bronchitis, diabetes, hay fever, migraine, epilepsy, heart

	ELSA	NCDS (✓ = comparable) (✓ ✓ = could be derived) (* = available from history file)											
Wave/ sweep	3	0	1	2	3	4	5	6	Bio	7	8	9	
Year	2006	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013	
Age	50+	Birth	Age 7	Age 11	Age 16	Age 23	Age 33	Age 42	Age 45	Age 46	Age 50	Age 55	
headaches, leukaemia, cancer, psychiatric problems, fatigue, gynaecological, eyesight problem, infectious disease, allergies, other													
Age period of ill health (16-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80-89, 90+, all my life)	✓	-	-	-	✓	✓	✓	✓	-	-	✓	✓	
Long-term effects of ill health (limited opportunity for paid work, negative impact on family life, positive effect on family life, made social life difficult, limited leisure activities, determined to get best out of life, opened up new opportunities, other, none)	✓	-	-	-	-	✓ <sup>69</sup>	✓ <sup>68</sup>	✓ <sup>68</sup>	-	✓ <sup>68</sup>	✓ <sup>68</sup>	✓ <sup>68</sup>	
<b>Health risk behaviours</b>													
Whether ever smoked	✓	-	-	-	✓	✓	✓	✓	-	✓	✓	✓	
Year started smoking daily	✓	-	-	-	-	-	-	-	-	-	-	-	
Whether smokes now	✓	-	-	-	✓	✓	✓	✓	-	✓	✓	✓	
Year last smoked	✓	-	-	-	-	✓	✓	✓	-	✓	✓	-	
If ever stopped smoking for 6 months or more	✓	-	-	-	-	✓ ✓	✓ ✓	✓ ✓	-	✓ ✓	✓ ✓	-	
Number of times stopped	✓	-	-	-	-	-	-	-	-	-	-	-	
Number of years smoked daily (< 5, 10-14, 15-19, 20+)	✓	-	-	-	-	-	-	-	-	-	-	-	
Drinking frequency	✓ <sup>15</sup>	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓	
Number of units in last 7 days and type of alcohol	✓ <sup>15</sup>	-	-	-	✓	✓	✓	✓	-	✓	✓	✓	
How often undertakes exercise	✓ <sup>15</sup>	-	-	-	-	-	✓	✓	-	✓	✓	✓	

trouble, hernia, eczema, kidney/ bladder/ stomach, high blood pressure, gum, dizziness, cancer, asthma, back pain, emotional problem. NCDS7 whether had health problems in last 12 months. NCDS9 asks whether had asthma, diabetes, back problem, cancer, hearing problems, high blood pressure, emotional problems since last interview.

<sup>69</sup> NCDS4 asks whether disability limits social life and choice of work. NCDS5 asks whether makes it harder to get job, kind of work and amount paid. NCDS6 illness/disability limits work can do and activities. NCDS7&9 health limits type and amount of work, and daily activities. NCDS8 asks whether limits daily activities and affect on work in last 4 weeks.

		ELSA	NCDS (✓ = comparable) (✓ ✓ = could be derived) (* = available from history file)										
	Wave/ sweep	3	0	1	2	3	4	5	6	Bio	7	8	9
	Year	2006	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013
	Age	50+	Birth	Age 7	Age 11	Age 16	Age 23	Age 33	Age 42	Age 45	Age 46	Age 50	Age 55
<b>Gynaecology</b>													
	How old when periods started	✓	-	-	✓	✓	-	-	-	-	-	-	-
	Problems with period	-	-	-	-	-	-	✓	✓	-	-	✓	-
	Year of hysterectomy	✓	-	-	-	-	-	-	-	-	-	✓	-
	Year had operation to remove both ovaries	✓	-	-	-	-	-	-	-	✓	-	✓	-
	Year last period was	✓	-	-	-	-	-	-	-	✓	-	✓	✓
	If had period in last 12 months	✓	-	-	-	-	-	-	-	✓	-	✓	✓
	Year started HRT	✓	-	-	-	-	-	-	-	✓	-	✓	-
	Whether period had stopped when first started HRT	✓	-	-	-	-	-	-	-	✓	-	✓	-
	Gap between last period and start of HRT	✓	-	-	-	-	-	-	-	✓	-	✓	-
	Whether taking HRT now	✓	-	-	-	-	-	-	-	✓	-	✓	-
	Year last took HRT	✓	-	-	-	-	-	-	-	-	-	-	-
<b>Other life events</b>													
	Experienced major fire/flood/earthquake or natural disaster	✓	-	-	-	-	-	-	-	-	-	-	-
	Had spouse, partner or child been addicted to drugs or alcohol	✓	-	-	-	-	-	-	-	-	-	-	-
	Been victim of serious physical attack or assault	✓	-	-	-	-	-	✓ 69	✓ 69	-	✓ 70	-	-
	Experienced sexual assault (rape or harassment)	✓	-	-	-	-	-	-	-	-	-	-	-
	Had life threatening illness or accident	✓	-	-	-	-	-	-	-	-	-	-	-
	Fired a weapon in combat or been fired upon	✓	-	-	-	-	-	-	-	-	-	-	-
	Witnessed the serious injury or death of someone in war or military action	✓	-	-	-	-	-	-	-	-	-	-	-
	Lost a very close friend or relative in a war or in military service	✓	-	-	-	-	-	-	-	-	-	-	-
	Witnessed an accident or violent act in which someone was killed or seriously wounded	✓	-	-	-	-	-	-	-	-	-	-	-

<sup>70</sup> NCDS5-6 asks whether fights with partner end in physical violence. NCDS7 ask whether been a victim of violence in last 12 months

	ELSA	NCDS (✓ = comparable) (✓ ✓ = could be derived) (* = available from history file)											
Wave/ sweep	3	0	1	2	3	4	5	6	Bio	7	8	9	
Year	2006	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013	
Age	50+	Birth	Age 7	Age 11	Age 16	Age 23	Age 33	Age 42	Age 45	Age 46	Age 50	Age 55	
Had a very close friend or relative who died or was at risk of death due to illness or serious accident	✓	-	-	-	-	-	-	-	-	-	-	-	
Provided long term care to a disabled or impaired relative or friend	✓	-	-	-	-	-	-	-	-	✓ 71	✓ 70	✓ 70	
Experienced severe financial hardship	✓	-	✓	✓	✓	-	-	✓	-	✓ 72	✓	✓	
Ever nearly drowned	-	-	-	✓	-	-	-	-	-	-	-	-	
Age first experienced above event	✓	-	-	-	-	-	-	-	-	-	-	-	
<b>Schooling age &lt; 16</b>													
LA or private nursery	-	-	✓	-	-	-	-	-	-	-	-	-	
LEA school	-	-	✓	✓	✓	-	-	-	-	-	-	-	
School characteristics (e.g. size)	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Number schools attended	-	-	✓ 73	✓ 72	✓ 72	-	-	-	-	-	-	-	
Child kept off school to help at home	-	-	-	-	✓	-	-	-	-	-	-	-	
Happiness at school	-	-	✓	-	✓	-	-	-	-	-	-	-	
Reluctance to go to school	-	-	✓	✓	✓ 74	-	-	-	-	-	-	-	
Mothers/ fathers interest in child education	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Teacher assessment of child abilities	-	-	✓	✓	✓	-	-	-	-	-	-	-	
Sex education taught	-	-	-	-	✓	-	-	-	-	-	-	-	
British Social Adjustment Guide (BSAG)	-	-	✓	✓	-	-	-	-	-	-	-	-	
Copy Designs test score	-	-	✓	✓	-	-	-	-	-	-	-	-	
Draw-a-Man test score	-	-	✓	-	-	-	-	-	-	-	-	-	
Southgate Group Reading test score	-	-	✓	-	-	-	-	-	-	-	-	-	

<sup>71</sup> NCDS7 ask whether looks after sick or disabled person, who that person is, and number hours per week. NCDS8-9 whether cares for parent, partner's parent and total hours.

<sup>72</sup> NCDS 2003 Biomedical CAPI asked whether grew up in poverty or financial hardship up to age of 16

<sup>73</sup> NCDS1-2 since 5 years old. NCDS3 since 11 years old.

<sup>74</sup> NCDS3 asks if plays truant

		ELSA	NCDS (✓ = comparable) (✓ ✓ = could be derived) (* = available from history file)										
	Wave/ sweep	3	0	1	2	3	4	5	6	Bio	7	8	9
	Year	2006	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013
	Age	50+	Birth	Age 7	Age 11	Age 16	Age 23	Age 33	Age 42	Age 45	Age 46	Age 50	Age 55
General ability test score		-	-	-	✓	-	-	-	-	-	-	-	-
Reading comprehension test score		-	-	-	✓	✓	-	-	-	-	-	-	-
Maths score		-	-	-	✓	✓	-	-	-	-	-	-	-
Academic motivation scale		-	-	-	-	✓	-	-	-	-	-	-	-
Mother/ father reads to child		-	-	✓	-	-	-	-	-	-	-	-	-
<b>Social activity age &lt; 16</b>													
Activity		-	-	✓ <sup>75</sup>	-	-	-	-	-	-	-	-	-
Use of parks, swimming pools, cinema, library		-	-	-	✓		-	-	-	-	-	-	-
Hobbies		-	-	-	✓	✓	-	-	-	-	-	-	-
Goes out in evening		-	-	-	-	✓	-	-	-	-	-	-	-
Area satisfaction		-	-	-	-	✓	-	-	-	-	-	-	-
Work in spare time		-	-	-	-	✓	-	-	-	-	-	-	-
Outings with mother/ father		-	-	✓	✓ <sup>76</sup>	-	-	-	-	-	-	-	-
<b>Social services age &lt; 16</b>													
Attended welfare clinic (under 1 or 1-5 years)		-	-	✓	-	-	-	-	-	-	-	-	-
Family contact with service providers		-	-	✓ <sup>77</sup>	✓ <sup>76</sup>	✓ <sup>76</sup>	-	-	-	-	-	-	-
Family difficulties		-	-	✓ <sup>78</sup>	-	-	-	-	-	-	-	-	-
Free school meal status		-	-	-	✓	✓	-	-	-	-	-	-	-

<sup>75</sup> NCDS1 – activity (active, quiet, over-active), meet other children (everyday, quiet often, little, not at all).

<sup>76</sup> NCDS2 asks about walks or visits

<sup>77</sup> NCDS1 – children's department, Banardos, psychiatrist, school officer, NSPCC, probation officer, marriage guidance, health visitor. NCDS2 – children's department, mental health, health, education, material aid, crime. NCDS3 child and family social services, educational welfare, careers office, voluntary agency, probation/police, other.

<sup>78</sup> NCDS1 – housing, financial, physical illness, mental illness, death of father/ mother, domestic tension



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