

An Introduction to the National Child Development Study (NCDS, or the 1958 British birth cohort study)

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Brian Dodgeon

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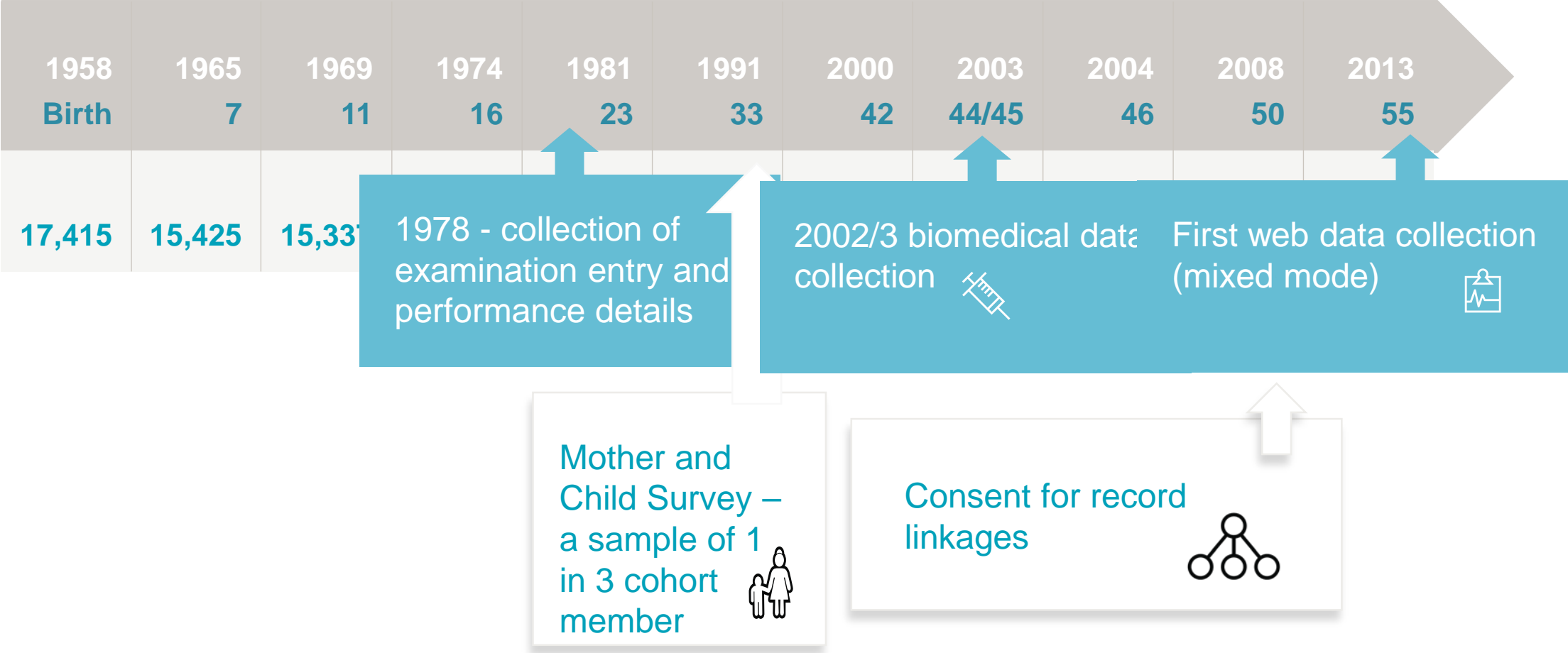


Brief overview of NCDS

- Longitudinal birth cohort study of all babies born in a single week in GB, N=17,415
- 98.1% of all babies took part in the first birth survey
- High retention, >9k in recent sweeps (study in touch with 12.5k of original 18k)
- Multidisciplinary content spanning social and biomedical
- Outstanding contribution to science and policy across many areas



NCDS study timeline




NCDS 58 A study of everyone born in one week in 1958

	1958	1965	1969	1974	1981	1991	2000	2003	2004	2008	2013
	Birth	7	11	16	23	33	42	45	46	50	55
main respondent	mother	parents	parents	cohort member / parents	subject	subject	subject	subject	subject	subject	subject
secondary respondent						partner mother children					
survey instruments										cognitive assessments	
linked data					of (nce us)						
response rate	17,415	15,425	15,337	14,654	12,537	11,469	11,419	9,377	9,534	9,790	9,137

In 1965, 1969 and 1974 the cohort was augmented by the addition of immigrants to Britain who were born in the target week in 1958

Topics covered by life stage

 Birth	 School years	 Adult
<p>Family</p> <p>Parental employment</p> <p>Obstetric history</p> <p>Smoking in pregnancy</p> <p>Pregnancy (problems, antenatal care)</p> <p>Labour (length, pain relief, problems)</p> <p>Birth (problems, sex, weight, length)</p>	<p>Family</p> <p>Parental employment</p> <p>Financial circumstances</p> <p>Housing</p> <p>Health</p> <p>Behaviour</p> <p>School</p> <p>Views and expectations</p> <p>Attainment</p>	<p>Family (partners, children)</p> <p>Employment</p> <p>Income</p> <p>Housing</p> <p>Health</p> <p>Health-related behaviour</p> <p>Courses and qualifications</p> <p>Basic skills</p> <p>Cognitive ability</p> <p>Views and expectations</p>

Childhood cognition

Age 7	Age 11	Age 16
Southgate Reading Test Copying Designs Test Draw-a-man Test Problem Arithmetic Test	Reading comprehension test Mathematics comprehension Test NFER General Ability Test (Douglas, 1964) Copying-designs Test	Reading comprehension Mathematics comprehension

Age 44/5 biomedical sweep



Approximately 9,000 study members took part at age 44/5 (2002/3)

- Biosamples: blood, saliva
- Blood pressure, pulse
- Standing and sitting height
- Weight, waist and hip circumferences
- Respiratory symptoms, ventilatory function (FEV1 and FVC)
- Visual acuity (near and distant), refractive error
- Hearing thresholds
- Depression and anxiety disorder (CIS-R)
- Chronic widespread pain
- Use of medications
- Alcohol use (AUDIT)
- Food frequency questionnaire, exercise habits

Early & late morning
saliva cortisol

Glycosylated haemoglobin
fibrinogen

Tissue plasminogen
activator

Von Willebrand factor
C-reactive protein

Triglycerides

Total and HDL cholesterol

Total and allergen-specific
immunoglobulin E

Insulin-like growth factor 1

Vitamin D

DNA

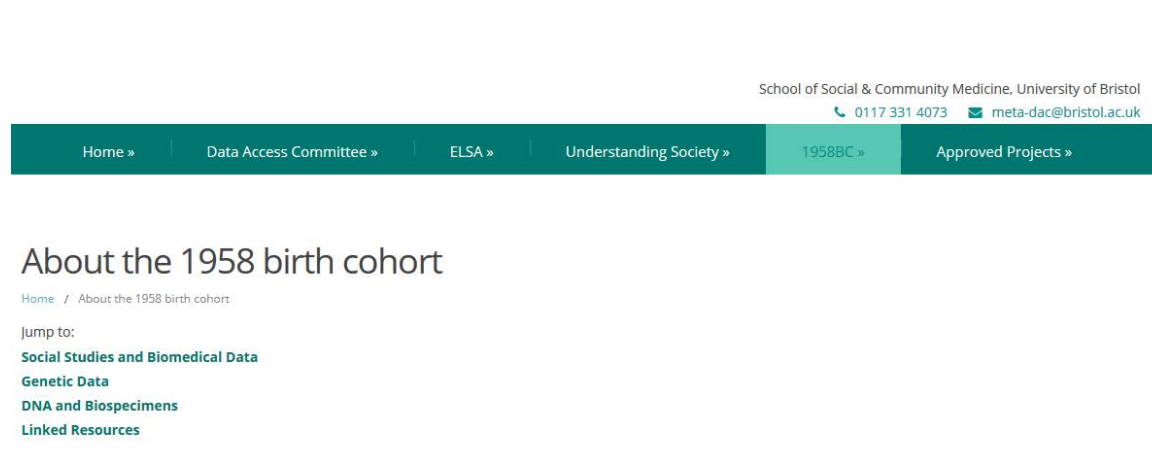
Lymphoblastoid cell lines

Genetic data

Epigenetic data
(N=240+300 underway)

Access to genetic data and biological samples via META-DAC

METADAC



metadac.ac.uk/1958bc-resource-types/

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Genetic data:
use in
phenotype/genotype
linkage (eg, GWAS,
Mendelian
randomisation).

Biological samples:
apply to further assay
whole blood, serum,
saliva at 44/45y

Record linkages in NCDS

Cohort member and partner consent (age 50)

- Economic records
- Health records

Parents of cohort members flagged on NHS register
(via Section 251 support)

Geographical identifiers and associated linked data

HMRC annual earnings,
self-assessment (from
1999),
HMRC National insurance
contributions (from 1974)
DWP benefits records

Health
Hospital episodes
Deaths
Cancer registrations
(England, Wales and
Scotland)

Age 55 Survey (2013, web/telephone) - Content

- Updating event histories (household composition, children, housing, economic activity, qualifications)
- Help and care provided to parents and grandchildren
- Earnings/income/ housing wealth
- Retirement plans / pensions
- Self-reported health and health conditions – disability (Equality Act 2010)
- Smoking and drinking

Scientific contribution of NCDS



2,481

publications

974

publications from
biomedical sweep



1,172

average downloads per year
from UKDS

2,429

applications for genetic
data from WTCCC



Scientific questions and contribution of NCDS

- Long term effects of early life circumstances
- Intergenerational transmission of advantage and disadvantage and the processes involved
- Returns to choices and investments made across the life course
- Drivers and consequences of individual life trajectories – careers, health, relationships, fertility, poverty and disadvantage
- The changing experiences of different cohorts

NCDS actively planning for age 60 sweep (2018)



Finances and employment: work, income, wealth, retirement plans and education



Family, relationships and identity: social networks, relationships, neighbourhood, social capital, social and political participation, attitudes and values, and religion



Health, wellbeing and cognition: physical health, mental health, medical care, health behaviours, cognitive function

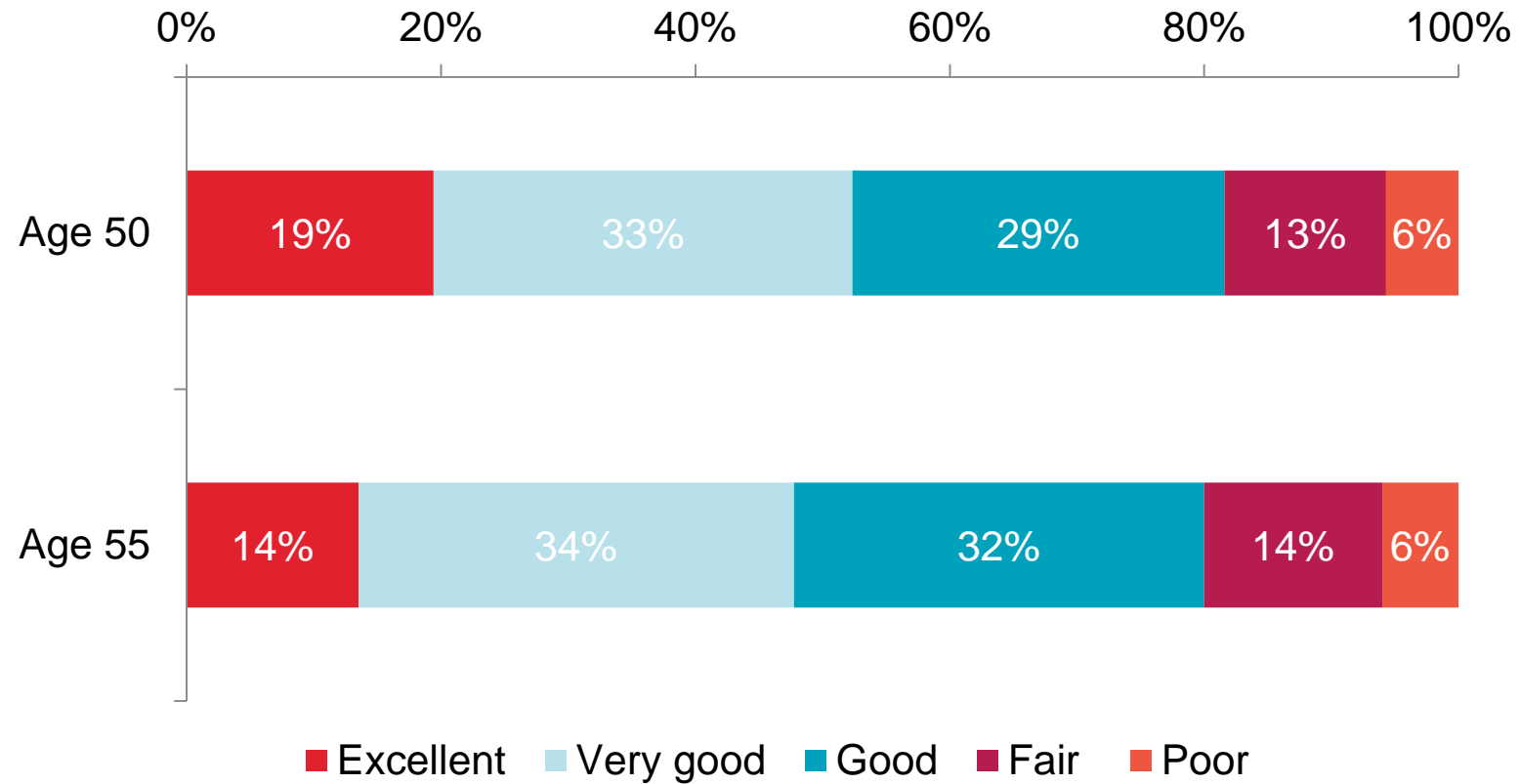


Online consultation and consultative conference held in summer 2016

Possible biomedical enhancement, subject to outcome of co-funding applications

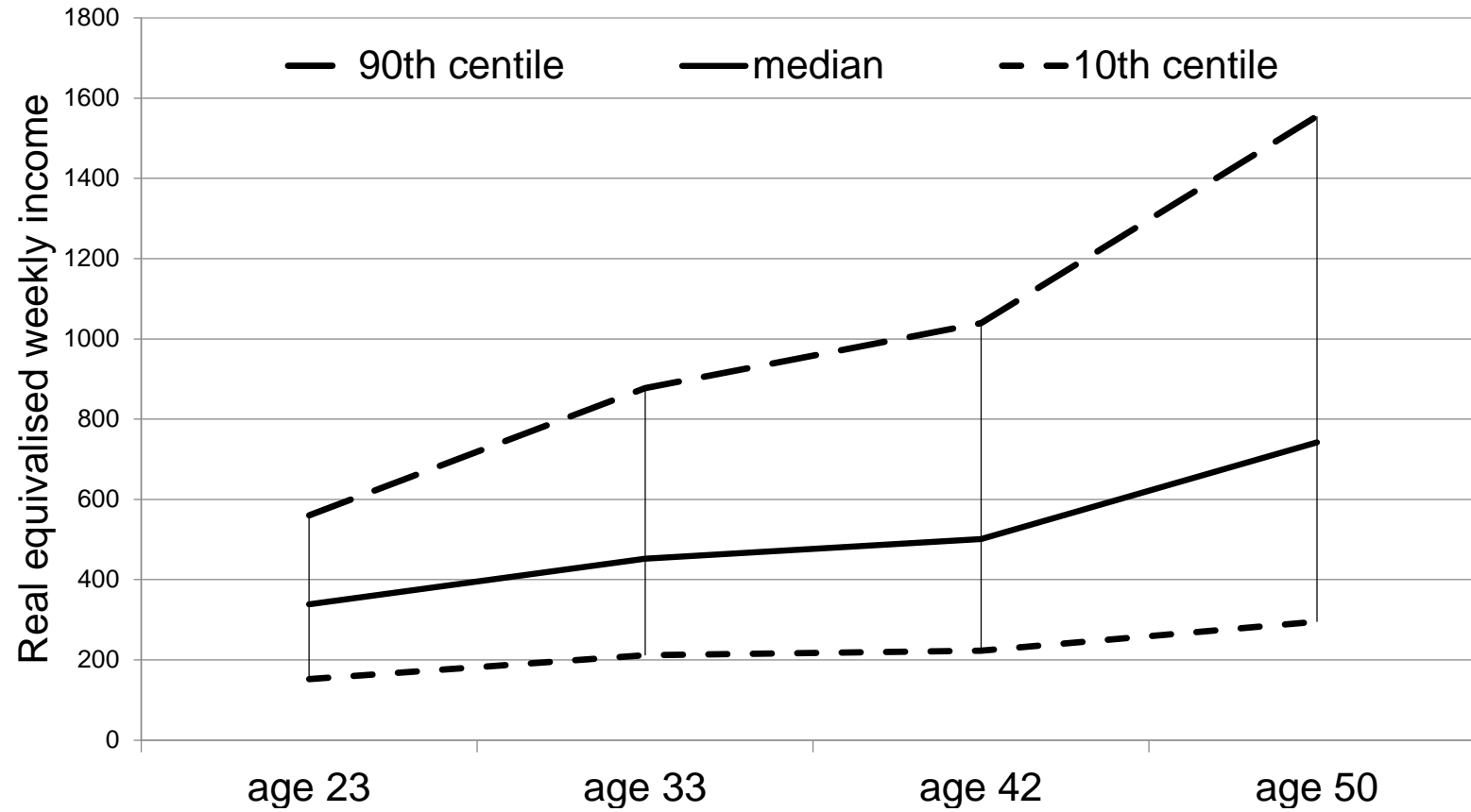


Health: most of the cohort still in good self-rated health





Net family income across a working lifetime



The homepage features a dark blue header with the logo and navigation links. Below the header, there are several sections: a 'Homepage' section with a list of studies (1958 National Child Development Study, 1970 British Cohort Study, etc.), a 'Blog' section with a featured article 'Social Inequalities - the report card', and a 'News' section with a headline about childhood abuse and neglect. The layout is clean and professional, with a focus on research and public engagement.

www.cls.ioe.ac.uk

The search interface is a dark-themed sidebar with a search bar and filters for 'Item Type', 'Study', 'Life Stage', and 'Topic'. The main content area shows a search bar, a 'Tour this Page' button, and a search query input field. The interface is user-friendly and designed for easy navigation of the data archive.

www.discovery.closer.ac.uk/search

The UK Data Service website features a dark header with a search bar and a navigation menu. The main content area is divided into sections for 'About the UK Data Service', 'Guides and resources', and 'See data from all over the world'. The site is visually appealing and provides a wealth of information for researchers and the public.

www.data-archive.ac.uk

Accessing data

Merging data: see syntax in Appendix
(same principles in each cohort)

Thank you
Any questions?

Appendix

Thanks to our funders and host institution



Institute of Education

Funded by

www.esrc.ac.uk

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www.ioe.ac.uk

Example findings

- Poor school attendance and truancy is associated with problems in adult employment and marital breakdown.
- Being bullied at school has long term psychological and other effects.
- A key predictor of children's educational attainment is interest shown by parents.
- There are substantive lifetime wage returns for men and women to attending higher education.
- Youth unemployment exerts a long-term wage 'scar'.

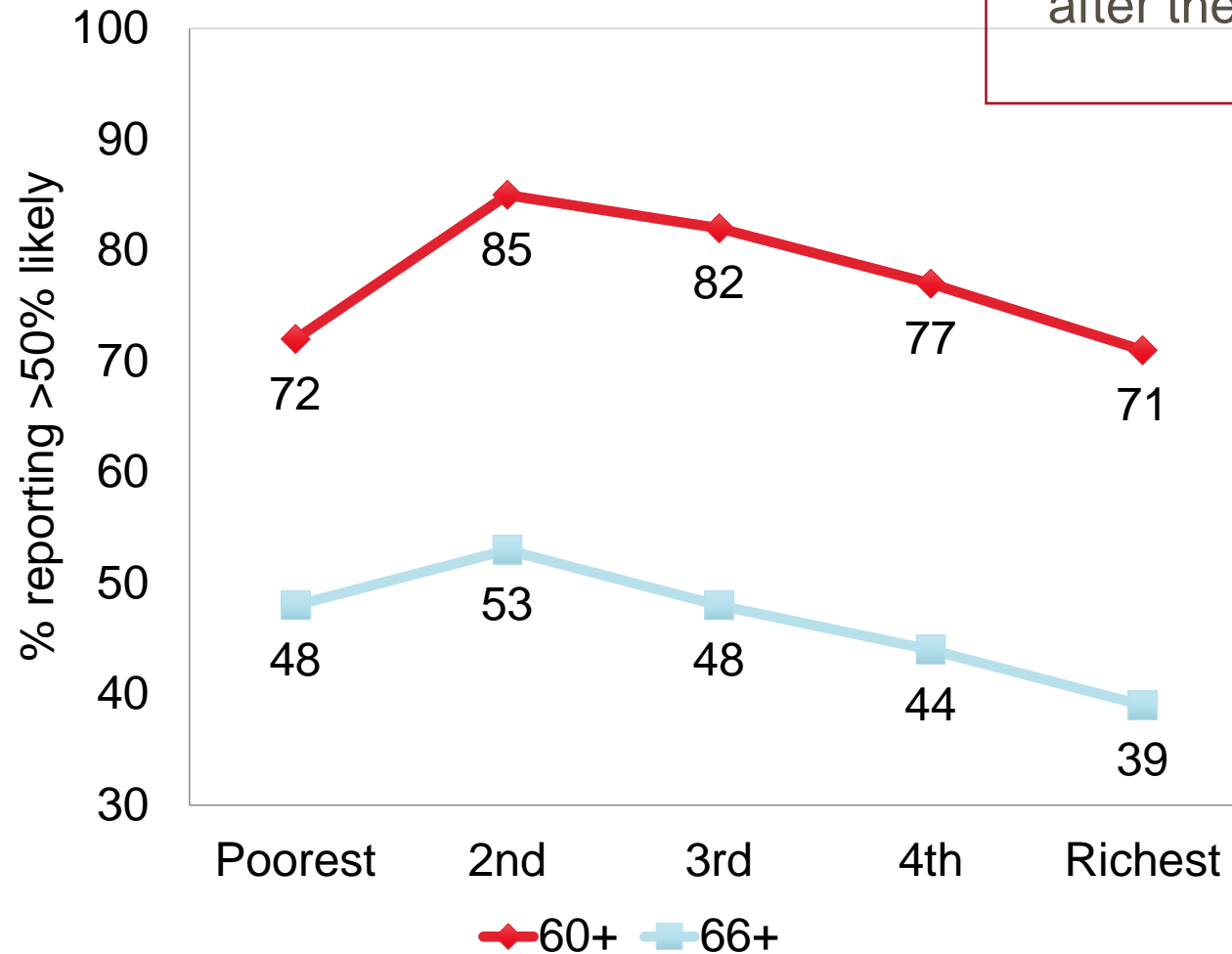
Example findings (2)

- Psychological problems in childhood can have substantial long-term economic and social consequences.
- Mothers who smoke during pregnancy are more likely to have children with low birth weight and, by age 16, reduced height and lower reading and mathematics attainment.
- Breast feeding is associated with reduced risk of heart disease in adult life.
- Chronic lower respiratory tract illness in adults is associated with poor home circumstances in early life

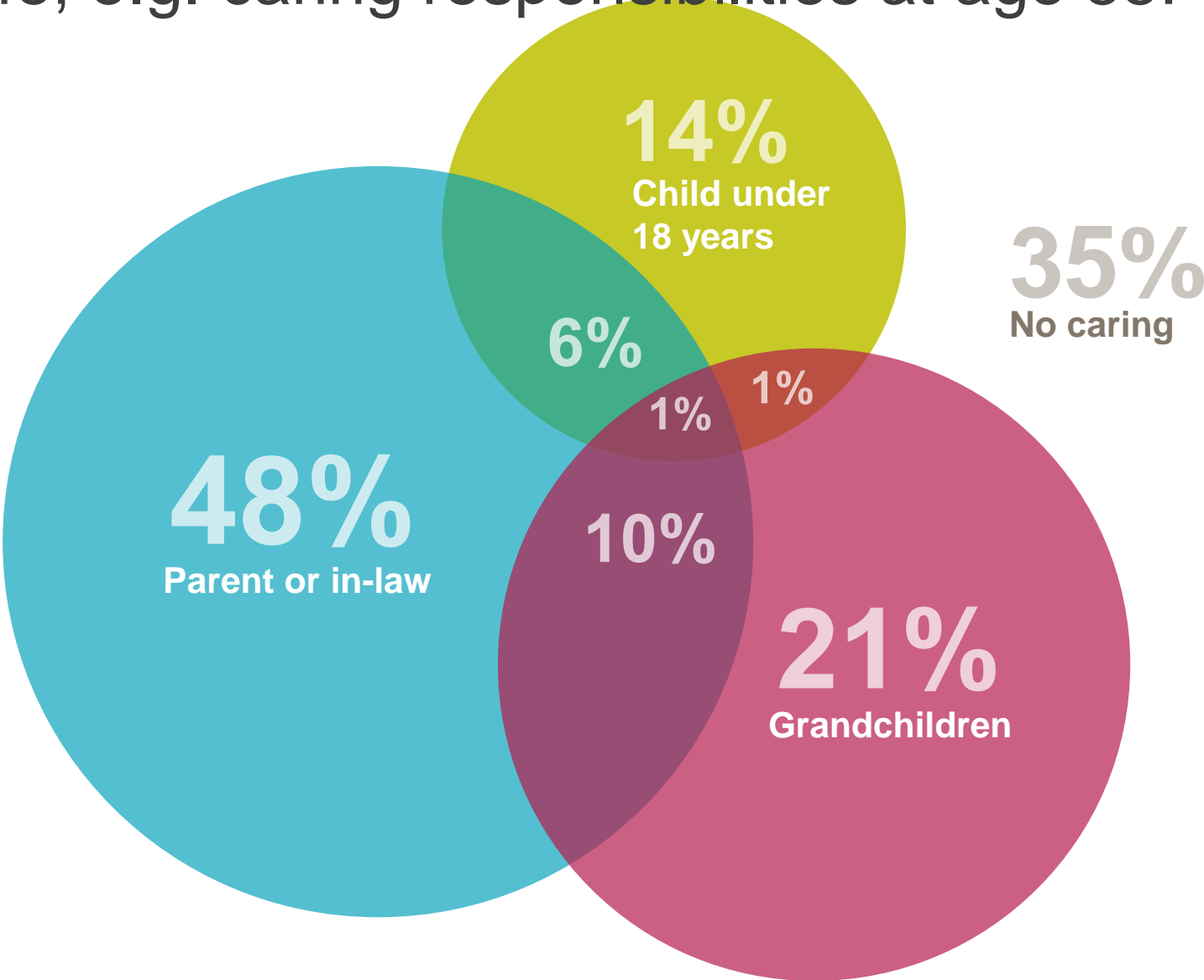


Expectation of working past 60/66 By lifetime income

How likely – on a scale of 0-100 – is it that you will be working at the age of 60, and after the age of 66?”



Family life, e.g. caring responsibilities at age 55:

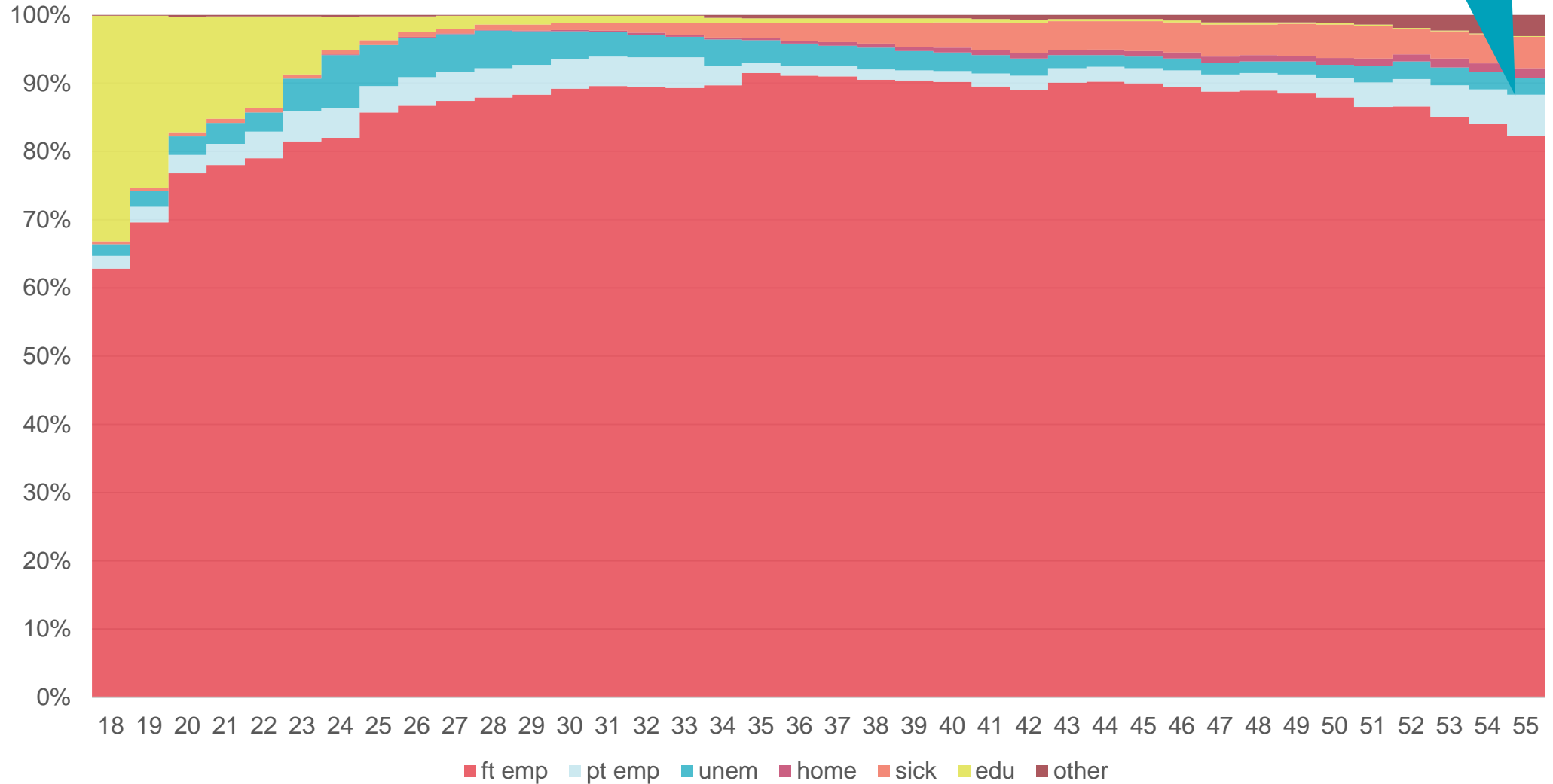




Employment: relatively few exits by age 55

Men

Of those in work at age 50, 8.2% not in work by 55

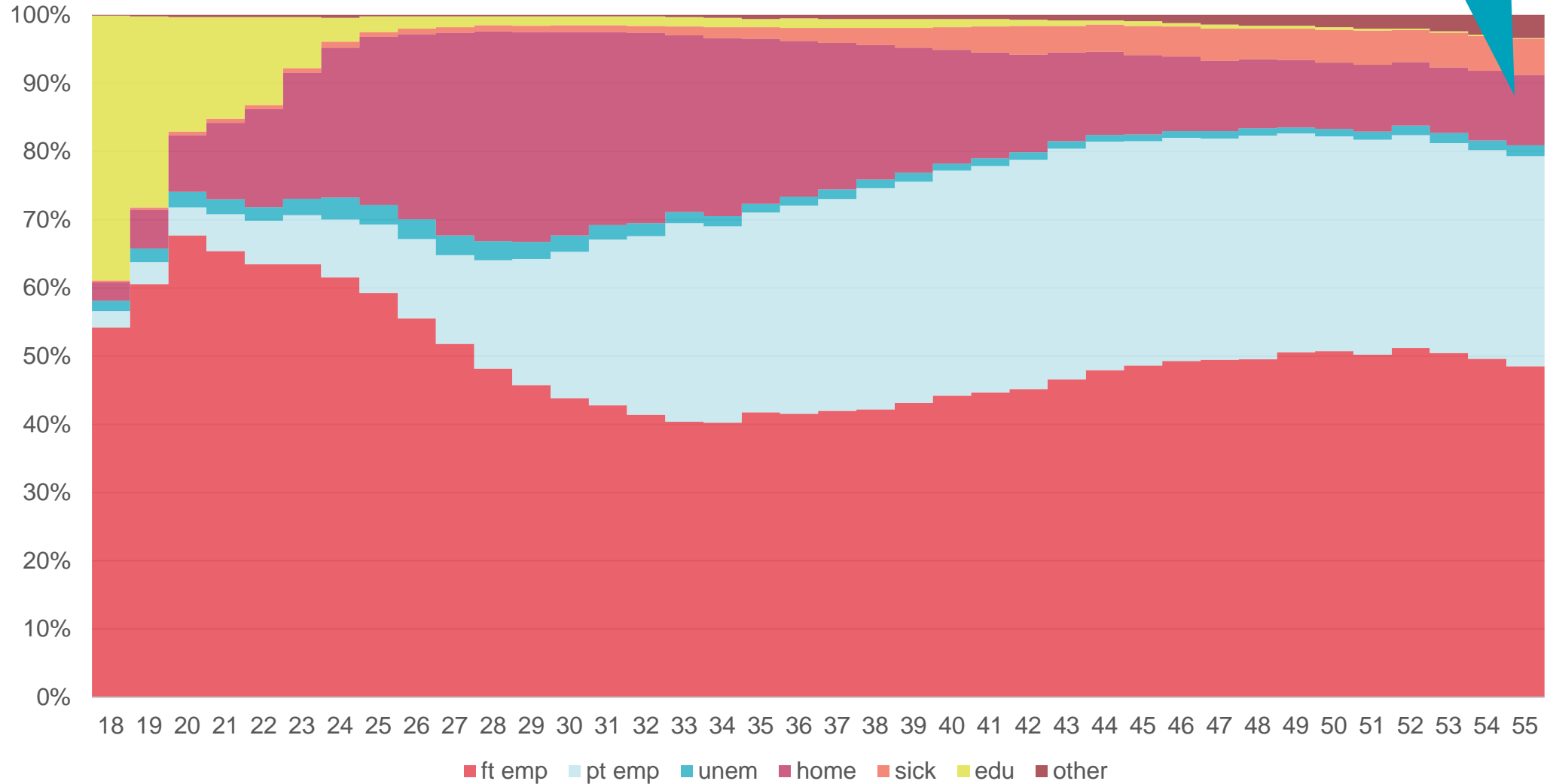


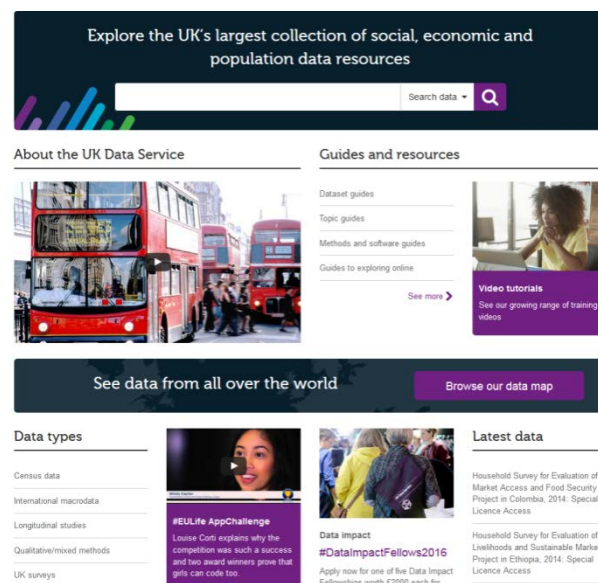


Employment: relatively few exits by age 55

Women

Of those in work at age 50, 10.6% not in work by 55





Main NCDS Datasets available for download:

Childhood dataset	1958-1974
(Birth survey & NCDS1/2/3 combined)	
NCDS4 dataset: Age 23 follow-up	1981
NCDS5 dataset: Age 33	1991
NCDS6 dataset: Age 42	1999/2000
Biomedical dataset: Age 44/45	2002/3
NCDS7 dataset: Age 46	2004
NCDS8 dataset: Age 50	2008
NCDS9 dataset: Age 55	2013

NCDS Datasets – How do I download them?

- Register with UK Data Service
 - <http://www.ukdataservice.ac.uk/>
 - Give details of research use
- Types of access
 - End User Licence (normal access to anonymised data)
 - Special Licence – sensitive and disclosive data (including area data)
 - Secure access (very disclosive data) - cannot be downloaded, instead accessed remotely
- Choice of formats for download:
 - SPSS
 - STATA
 - TAB-delimited

NCDS Datasets – How do I merge them for longitudinal analysis?

Initial questions one may worry about

- How can I be sure we attribute repeated measures at different time-points to the same individual?
 - The case-identifier variable NCDSID is present at every sweep, to ensure the ‘matching’ over time is correct
- Do I have to worry about measures from different time-points having the same name (e.g SOCLASS)?
 - No! All 16,000 NCDS variables have distinct names, except for NCDSID
- Do I have to worry about there being different numbers present at each sweep?
(e.g. what happens when we merge a dataset with 17,000 cases with another that just has 11,000?)
 - No problem! Because each sweep has a different set of variable names, the merge process results in all the variables in the second sweep having ‘missing’ values for each of those 6,000 cases not present

NCDS Datasets – How do I merge them?

In SPSS: two ways – drop-down menus or syntax

1 Drop-down menus

- First make sure data files are sorted on the link variable NCDSID (they normally would be already)
- Open one of the datafiles, as the ‘Active File’
- Click Data > Merge Files > Add Variables
- In dialogue box, enter name of the next file you want to merge
- Check ‘Match cases on key variables in sorted files’, and enter name of link variable NCDSID in box
- Click OK, then repeat the process for any further datasets you’d like to merge

2 Syntax

- Match files file='C:\NCDS_childhood_data.sav'/file='C:\NCDS4.sav'/by=ncdsid.
- Save outfile='C:\NCDS_childhood_plus_NCDS4.sav'.

NCDS Datasets – How do I merge them?

In STATA, use syntax:

- use `ncds0123.dta`, `clear`
- `sort ncdsid`
- `merge 1:1 ncsid using ncds4.dta`

- This merges the childhood dataset with the NCDS4 dataset.

- If you want to save just a subset of variables (eg `lifesat1` and `n622_4`), you can use syntax:

- `merge 1:1 ncdsid using ncds4.dta, keepusing (lifesat1 n622_4)`

STATA automatically creates a variable name `_merge` containing numeric codes concerning the source & contents of each observation in the merged dataset. Need to drop this before proceeding to merge any more datasets:

```
drop _merge
```

What documentation is available?

- User Guide
 - Survey details, making sense of the variables available, conventions used
- Full Questionnaire
 - Online and telephone versions
 - Index of variable names linked to questions
- Technical Report
 - Sample design, development work
 - Conduct of fieldwork, survey response
 - Coding, editing and data preparation
- Explore variables at UK Data Service
 - NESSTAR software
 - Shows frequency counts of all variables on request
 - Create user account to explore variables further:
 - Cross-tabulations
 - Charts