

Getting Started: An introduction to four British cohort studies

27 November 2025

Centre for Longitudinal Studies, UCL Social Research Institute

CENTRE FOR LONGITUDINAL STUDIES



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Today's schedule

Session	Time	Topics covered	Speaker
1.	12.30 – 12.45	Introduction	Prof. Morag Henderson
2.	12.45 –13.05	Content by 'subject area'	Prof. Morag Henderson
3.	13.05 – 13.25	Overview of the type of analysis	Prof. Richard Silverwood
4.	13.25 – 13.45	Getting started with the data And where to go for more information	Prof. Richard Silverwood
5.	13.45 – 14.00	General Q&A	All

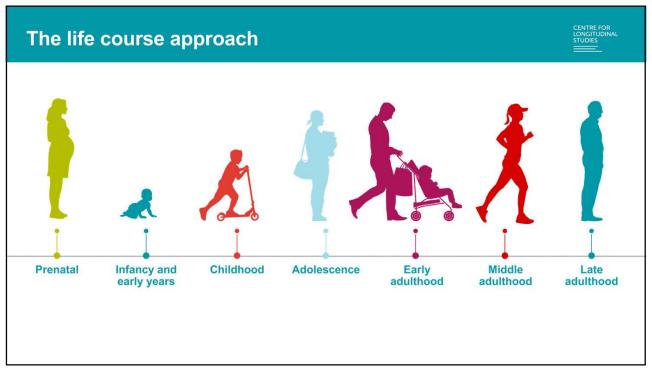
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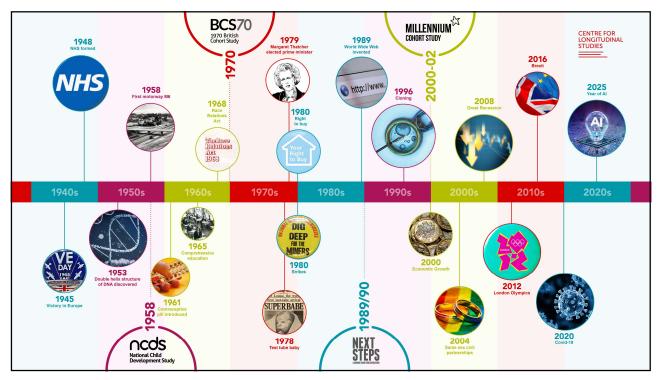
Birth cohort studies

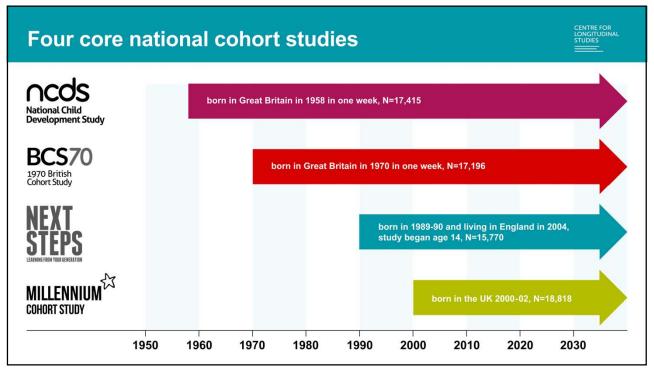
- Cohort studies are a type of longitudinal study—an approach that follows participants over a period of time (often many years)
- Participants share a common characteristic, i.e. birth cohorts follow individuals born in a particular period - a day, week, month, year
- It follows these people throughout their lives, and collects information from them at particular ages
- This design allows researchers to observe how early-life factors shape later-life outcomes

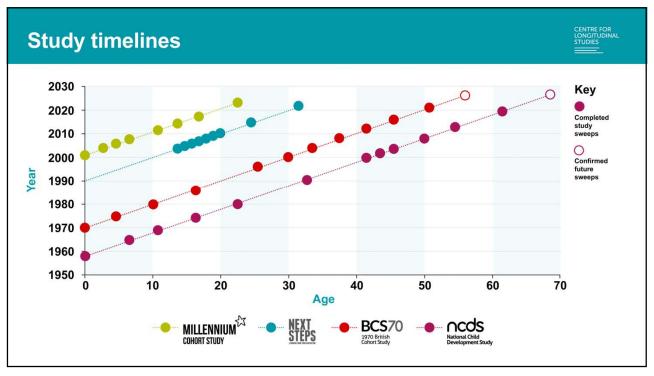
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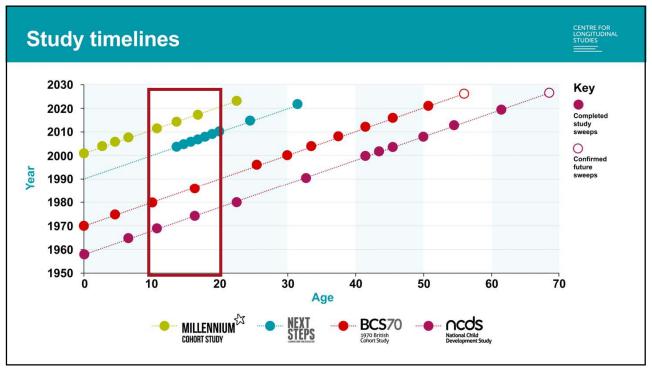
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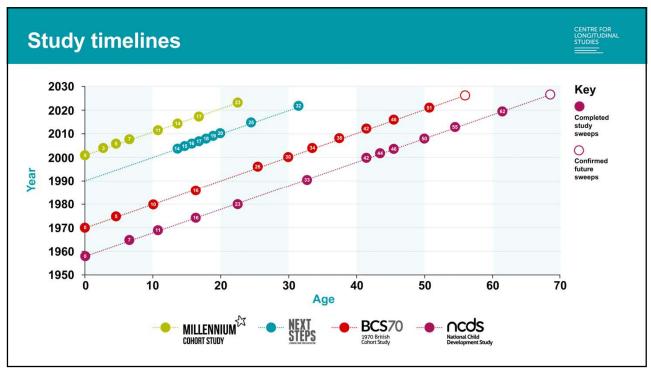


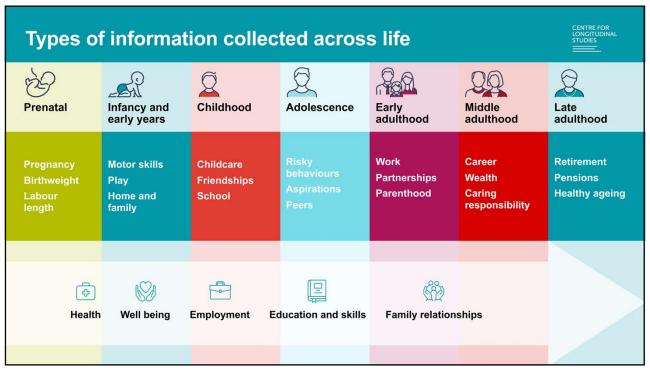












NCI	NCDS A study of everyone born in one week in 1958 (GB)												
	1958		1969	1974	1981	1991		2003			2013	2020/3	
	Birth	7	11	16	23	33	42	44	46 🕽	50	□ 55 ③	62/65	
Do main respondent	mother	parent cohort member	parent cohort member	parent cohort member	cohort member	cohort member	cohort member	cohort member	cohort member	cohort member	cohort member	cohort member	
Do others		school	school	school	exam results [16/18]	children (1 in 3) partner							
(S)	medical birthweight	medical height/ weight conditions illnesses accidents vaccinations	medical height/ weight conditions illnesses accidents vaccinations puberty	medical height/ weight conditions, illnesses, accidents vaccinations puberty smoking alcohol	height/ weight conditions illnesses accidents smoking alcohol exercise	height/ weight conditions illnesses accidents smoking alcohol exercise	height/ weight conditions, illnesses, accidents diet smoking alcohol drugs exercise	biomedical height/ weight blood - DNA	conditions, illnesses smoking alcohol exercise	height/ weight conditions, illnesses smoking alcohol exercise	height/ weight conditions, illnesses smoking alcohol	biomedical height/ weight blood - DNA	
Survey instruments		cognitive mental h.	cognitive mental h. motor coord essays	cognitive mental h. motor coord	mental h.	cognitive [c]* mental h. *c=children	mental h.			cognitive mental h.		cognitive mental h.	
linked data				area of residence (census)	area of residence (census)		Linked health data (HES)	Linked health data (HES)	Linked health data (HES)	consent for economic records Linked HES	Linked health data (HES)	consent for health & economic records	
rate	17,415	15,425	15,337	14,654	12,537	11,469	11,419	9,377	9,534	9,790	9,137	8,405	

В	BCS70 A study of everyone born in one week in 1970 (GB)										
	1970	1975	1980	1986	1996	2000	2004	2008	2012	2016	2021-24
	Birth	5	10	16	26⊠	30	34	38 🕥	42	46	51-53
odent	mother	parent cohort member	parent cohort member	parent cohort member	cohort member	cohort member	cohort member	cohort member	cohort member	cohort member	cohort member
Eoo main respondent		school	school	school			children (1 in 2)				
others	medical birthweight	medical height/ weight, vaccinations	medical height/ weight vaccinations	medical height/ weight blood pressure	height/ weight	height/ weight	height/ weight		height/ weight	biomedical height/ weight	height/ weight
(S)		conditions illnesses accidents	conditions illnesses accidents	conditions illnesses accidents alcohol smoking	conditions, illnesses, accidents alcohol smoking	conditions, illnesses, accidents alcohol smoking	conditions Illnesses accident alcohol smoking	conditions illnesses smoking	conditions illnesses accidents alcohol smoking	conditions illnesses accidents alcohol smoking	conditions illnesses accidents alcohol smoking
V _				drugs motor coord diet		drugs exercise diet	exercise diet		exercise	exercise blood (DNA) accelerometer	exercise
) ments		cognitive mental h.	cognitive mental h. dyslexia	cognitive mental h.	mental h.	mental h.	cognitive [c]* mental h. dyslexia		cognitive mental h.	cognitive mental h.	cognitive mental h.
Survey instruments				time use diary diet diary			basic skills *c=children			diet diary	
% linked	9				HES	HES	HES	HES	HES, consent to health & econ		consent to health & econ
response	17,196 16,568*	13,135	14,875	11,622	9,003	11,261	9,665	8,874	9,841	8,851	8,016

Ne	ext Ste	ps A s	study c	of peop	le born	in 198	9/90		
		2005	چے 2006	2007					
Ę	Age 14	Age 15	Age 16	Age 17	Age 18	Age 19	Age 20	Age 25	Age 32
M in respondent	Cohort member	Cohort member	Cohort member	Cohort member	Cohort member	Cohort member	Cohort member	Cohort member	Cohort member
	Parents	Parents	Parents	Parents					
Featured	Education	Education, quals	Education, quals	Education, subjects studied, quals, jobs & training, NEET	Education, subjects studied, quals, jobs & training, NEET, social attitudes	Education, subjects studied, quals, jobs & training, NEET	Education, subjects studied, quals, jobs & training, NEET, social attitudes	Education, subjects studied, quals, jobs & training,	Education, subjects studied, quals, jobs and training, NEET, social attitudes
Health 💮	Birth weight, illness, smoking, alc, drugs, exercise	Illness, smoking, alcohol, drugs, exercise	Illness, smoking, alcohol, drugs, exercise	Birth weight, illnesses, alcohol, drugs, exercise		Illness, alcohol, drugs, exercise	Illness, alcohol, drugs, exercise	Height, weight, illness, smoking, alcohol, drugs, exercise	Height, weight, illness, sexual health, vaccinations, smoking, alcohol, drugs, exercise, diet, coronavirus
Survey instruments		Mental health, non- cognitive skills		Mental health, non- cognitive skills			Non-cognitive skills	Mental health, alcohol, non- cognitive skills	Cognition, mental health, personality, alcohol, non-cognitive skills, social provision, & genetic data
Linked data	NPD, HES	NPD, HES	NPD, HES	NPD, ILR, HES	HES	HES	HES	HES, Student Loans Co + consents to econ, health, ed	Consents to econ, health, ed.
Sample & RR	15,770 (74%)	13,539 (86%)	12,439 (92%)	11,801 (92%)	10,430 (89%)	9,799 (87%)	8,682 (90%)	7,707 (51%)	7,279 (53%)

MC	S A study of	people l	born betwee	n 2000-20	002			
	2001-03	2003-05			2012-13	2015-16	2018-19	2023-24
	9 months	3	5	7	11	14	17	23
Do main respondent	Parents	Parents / Cohort member	Parents / Cohort member	Parents / Cohort member	Parents / Cohort member	Parents / Cohort member	Parents /Cohort member	Cohort member
De orthers		Older siblings (England)	Teachers, Siblings	Teachers	Teachers		Parents	Parents (Ongoing)
Health	Birth weight	Height, weight, conditions, illnesses, accidents, vaccinations	Height, weight, waist size, conditions, illnesses, accidents, vaccinations	Height, weight, waist size, body fat, conditions, illnesses, accidents, vaccinations	Height, weight, body fat conditions, illnesses, accidents, diet, puberty	Height, weight, body fat, puberty, diet, sleep, conditions, illnesses, vaccinations, alcohol, smoking	Conditions, illnesses, physical activity, puberty, sexual health, alcohol, smoking, drugs	Conditions, illnesses
Survey instruments	Developmental milestones	Cognition and mental health, developmental milestones	Cognition and mental health	Cognition and mental health, activity monitor	Cognition and mental health	Cognition and mental health, time use diaries, accelerometer, genetic data (trios)	Cognition and mental health	Cognition and mental health
linked admin data	Health, Geographical Identifiers, Air Pollution, Green Space, Birth Registration, Maternity Hospital Episodes, Hospital of Birth	Health, Education, Geographical Identifiers, Air Pollution, Green Space	Health, Education, Geographical Identifiers, Air Pollution, Green Space, Distances to Preferred Schools, Air Pollution, School Inspections	Health, Education, Geographical Identifiers, Points of Interest, Air Pollution, School Inspections, Green Space	Health, Education, Geographical Identifiers, Points of Interest, Air Pollution, School Inspections, Green Space, Distances to Grammar Schools	Health, Education, Geographical Identifiers, Points of Interest, Air Pollution, School Inspections, Green Space, Polygenic Indices	Health, Education, Geographical Identifiers, School Inspections	Health, Education, Geographical Identifiers, COVID-19 antibodies
Sample	18,818 from 18,552 families	15,808 from 15,590 families	15,460 from 15,246 families	14,043 from 13,857 families	13,469 from 13,287 families	11,872 from 11,726 families	10,757 from 10,625 families	9,645 cohort members

Other data enhancements in the birth cohorts

- Genetic data in the NCDS, BCS70, Next Steps and MCS
 - MCS Trios (cohort, mother, father)
- Linked administrative data
 - Health and education
 - Consent: Employment (all) and crime (Next Steps, MCS)
- Geographical data
 - e.g. electoral wards, output areas, Points of Interest etc
- Harmonised datasets across the cohorts
 - · Socio-economic, BMI, mental health, child environment
- COVID-19 online surveys
 - Possible impacts of pandemic on multiple aspects of life
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- Wide range of topics including family, employment, home schooling, mental health during lockdown and an open question on affects of the pandemic

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Our new studies

Generation New Era (fieldwork in late 2026)

- Generation New Era is a new UK-wide birth cohort study aiming to follow the lives of 30,000 children born in 2026, and their families.
- The first sweep of data collection will take place when the child is 9-10 months old, beginning in late 2026

Early Life Cohort Feasibility Study (fieldwork completed in 2023-24)

- · ESRC funded study following a cohort of several thousand babies born in the UK in 2022-23
- Data collection took place when babies were 9-12 months. Data available at <u>UK Data Service</u>

Children of the 2020s Study (fieldwork began in 2022)

- DfE commissioned study following a cohort of babies born in England Sept-Nov 2021(@ 8,500 families).
- Wave 1 data (nine months) available now from <u>ONS Secure Research Service</u>, Wave 2 (two years) to be deposited soon

COVID Social Mobility and Opportunities study (fieldwork began in 2021)

- A UKRI funded study following over 13,000 young people (in Year 11 in the academic year 2020-21)
- Wave 1 and Wave 2 data available from the <u>UK Data Service</u>



The contents of the cohort studies

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Subject areas



- Physical health
- Mental health & Wellbeing
- Family and relationships
- Earnings and income
- Education, ability and cognitive measures

...but there are many more



Physical Health

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Physical health measures	NCDS 58	BCS 70	NS 89	MCS 01
Self assessed general health	7, 11,16, 33, 44, 46, 50, 55, 62	5, 10, 16, 34, 42, 46, 51	25, 32	3, 5, 7, 11, 14, 17
BMI, Height, Weight	7,11, 16, 23, 33, 42, 44, 50, 55, 62	10,16, 26, 30, 34, 42, 46, 51	25, 32	3, 5, 7, 11, 14, 17
Hospital Episodes Statistics:	England & Scotland ✓	England & Scotland ✓	England ✓	Scotland & Wales ✓
DNA /biomarkers	44 (available), 62	46 (available)	32 (available)	14 (available)
Physical activity (leisure time)	11, 16, 23, 33, 42, 44, 50, 55, 62	5, 10, 16, 34, 42, 46, 51	20, 25, 32	5, 7, 11, 14, 17
Diet related measures (intake, overeating)	7, 33, 42, 44, 62	10, 16, 30, 34, 42, 46, 51	25, 32	9 months, 3, 7, 11, 14, 17
Anthropometry (e.g. blood pressure, body fat, grip strength, vision, motor skills)	7, 11, 16, 44, 62	10, 16, 46 + accelerometry	-	3, 7, 11, 14, 17 (10, 14 acceler)
Medical conditions/ *long term illness	0, 7, 11, 26, 23, 33, 42, 44, 46, 50, 55, 62		14*, 15*, 16*, 17*, 18*, 19*, 20*, 25*, 32	9m, 3, 5, 7, 11, 14, 17
Drugs & alcohol consumption	16, 23, 33, 42, 44, 46, 50, 55, 62	16, 26, 30, 34, 42, 46, 51	14, 15, 16, 17, 18, 19, 20, 25, 32	11, 14, 17

Physical health measures	NCDS 58	BCS 70	NS 89	MCS 01
Self assessed general health	7, 11,16, 33, 44, 46, 50, 55, 62	5, 10, 16, 34, 42, 46, 51	25, 32	3, 5, 7, 11, 14, 17
BMI, Height, Weight	7,11, 16, 23, 33, 42, 44, 50, 55, 62	10,16, 26, 30, 34, 42, 46, 51	25, 32	3, 5, 7, 11, 14, 17
Hospital Episodes Statistics:	England & Scotland ✓	England & Scotland ✓	England ✓	Scotland & Wales ✓
DNA /biomarkers	44 (available), 62	46 (available)	32 (available)	14 (available)
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Diet related measures (intake, overeating)	7, 33, 42, 44, 62	10, 16, 30, 34, 42, 46, 51	25, 32	9 months, 3, 7, 11, 14, 17
Anthropometry (e.g. blood pressure, body fat, grip strength, vision, motor skills)	7, 11, 16, 44, 62	10, 16, 46 + accelerometry	-	3, 7, 11, 14, 17 (10, 14 acceler)
Medical conditions/ *long term illness	0, 7, 11, 26, 23, 33, 42, 44, 46, 50, 55, 62	0, 5, 10, 16, 26, 30, 34, 38, 42, 46, 51	14*, 15*, 16*, 17*, 18*, 19*, 20*, 25*, 32	9m, 3, 5, 7, 11, 14, 17
Drugs & alcohol consumption	16, 23, 33, 42, 44, 46, 50, 55, 62	16, 26, 30, 34, 42, 46, 51	14, 15, 16, 17, 18, 19, 20, 25, 32	11, 14, 17

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Health measures in COVID-19 web surveys	NCDS 58	BCS 70	NS 89	MCS 01
COVID-19 antibodies	n=3,222	n=2,547	n=1,267	CM Par
N=111/44/				11-11-21-11-2-200
Long COVID Symptoms	W3 W1, W2;	W3 W1, W2;	W3 W1, W2;	W3 W1, W2;
COVID presence	W1, W2, W3	W1, W2, W3	W1, W2, W3	W1, W2, W3
Self-related general health	W1, W2, W3	W1, W2, W3	W1, W2, W3	W1, W2, W3
Long standing health conditions	W1, W2, W3	W1, W2, W3	W1, W2, W3	W1, W2, W3
Disruption to medical appointments	W1, W2, W3	W1, W2, W3	W1, W2, W3	W1, W2, W3
Difficulty obtaining medication	W2, W3	W2, W3	W2, W3	W2, W3
Defined as vulnerable	W1_W2_W3	W1 W2 W3	W1 W2 W3	W1_W2_W3

More information can be found in this video on the cohort studies through a biomedical science perspective





Introducing the 1958, 1970, 1989-90 & 2000-01 birth...

CLOSER
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https://www.youtube.com/watch?v=dSd7E TrQdR0&t=1932s

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Mental Health & Wellbeing

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Mental health & Wellbeing- all cohorts



- Bristol Social Adjustment Guide (BSAG)
- Conners teachers Hyperactivity Rating Scale (Conn)
- Rutter Behavioural Scale (RUT)
- Child Development Scale (combination of Rutter and Connor) (CDS)
- Strengths and difficulty questionnaire (SDQ)
- Mood and feelings questionnaire (MFQ)
- Malaise inventory (MAL)
- Kessler Scale (4 item) (K4)
- General Health Questionnaire (12-item version) (GHQ-12)
- Short Form Health Survey (SF-36)
- The Warwick-Edinburgh Mental Wellbeing Scale (WEMWEBS)

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Malaise



A nine-item Malaise Inventory: a measure of psychological distress

- Do you feel tired most of the time?
- Do you often feel miserable or depressed?
- Do you often get worried about things?
- Do you often get into a violent rage?
- Do you often suddenly become scared for no reason?
- Are you easily upset or irritated?
- Are you constantly keyed up and jittery?
- Does every little thing get on your nerves?
- Does your heart often race like mad?

Mental health measure	NCDS 58	BCS 70	NS 89	MCS 01			
BSAG	7, 11						
Conn		10, 16					
RUT	7, 11, 16, 16	5, 10, 16					
CDS		10					
SDQ				3, 5, 7, 7, 11, 11, 14, 17, 17			
MFQ				14			
MAL	23, 33, 42, 50, 62	16, 26, 30, 34, 42, 46					
K4/K6		34		17			
GHQ-12	42	16, 30	15, 17, 25, 32				
SF-36	50, 62	46					
WEMWEBS	50	42, 46		17			
PHQ, GAD	62		32				
	Self-report, teacher, parent						

COVID-19 sweeps: All Cohorts



- Patient Health Questionnaire-2 (PHQ-2):
- Over the <u>last 2 weeks</u>, how often have you been bothered by the following problems?
 - Little interest or pleasure in doing things
 - Feeling down, depressed or hopeless
- Generalised-Anxiety Disorder (GAD-2)
- Over the <u>last 2 weeks</u>, how often have you been bothered by the following problems?
 - Feeling nervous, anxious or on edge
 - Not being able to stop or control worrying
 - Not at all Nearly every day

More information can be found in this video on mental health CENTRE FOR LONGITUDINAL STUDIES in the cohort studies



Mental health in four British cohort studies:...

UCL Centre for Longitudinal Studi... 204 views • 1 year ago

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https://www.youtube.com/watch?v=Do4X VUqsPO0&t=1510s

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Wellbeing scales



Well-being measure	NCDS	BCS70	NS89	MCS01
Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS)	50, 62	42, 46, 51		
Life satisfaction	33, 42, 46, 50, 62	26, 30, 34, 42, 46, 51	20, 25, 32	9 months, 5, 11 , 14, 17
Quality of Life Scale (CASP- 12/6 item)	50, 55, 62			
Self-efficacy	33, 42, 46, 50, 62	26, 30, 34, 42, 51	14	14, 17
Loneliness (UCLA)	COVID sweeps, 62	COVID sweeps, 51	COVID sweeps, 32	COVID sweeps

Parent



Family and Relationships

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Family and relationships



- Who is in the household
- Relationship to cohort member
- Age /number of siblings
- Biological, step, adoptive parents
- Age of parents when the cohort member was born
- Fertility intentions
- Pregnancy history
- Partnership formation, cohabitation, marriage, divorce, dissolution, formation

More information can be found in this video on families in the CENTRE FOR LONGITUDINAL STUDIES cohort studies





Families and relationships in four British cohort studies...

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1/3 recordings

https://www.youtube.com/watch?v=IFkCW C9eJbE

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Education, ability and cognitive measures

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Education	NCDS 58	BCS 70	NS 89	MCS 01
School				
Key stage 1				NPD
Key stage 2			NPD	NPD
Key stage 3			NPD	
GCSE or equivalent (subject and grades) (KS4)	23, 42	32	NPD & self report	NPD & self report
A level or equivalent (KS5)	23, 42	26, 32, 34, 42	NPD & self report	NPD & self report
Study intentions	16	16	14, 15, 16, 17	11, 14
Further education			ILR	
Higher education				
Degree subject	42, 46	38, 42,	20, 25, 32	17
University type	23,33	42.	20, 25, 32	17
Degree grade	42,	38	20, 25, 32	-
Life long learning	62	51	32	

Cognitive ability in childhood

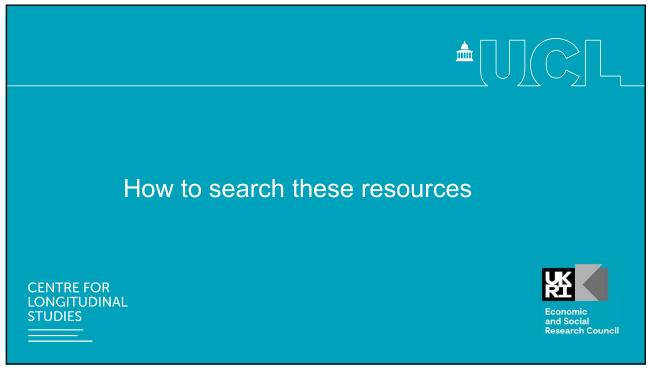


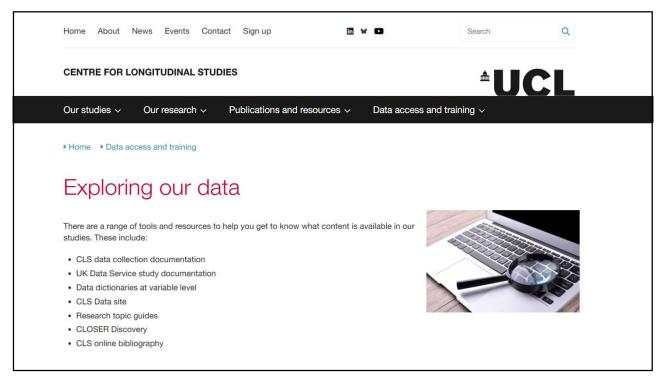
- Bracken school readiness (BSRA-R)
- British Ability Scales: verbal similarities, word definitions, matrices, recall of digits, pattern construction, picture similarities, naming vocabulary, word reading
- General Ability Test (GAT)
- Cambridge Neuropsychological Test Automated Battery (CANTAB): Decision making, Working memory
- National Foundation for Education Research (NFER): maths tests, reading comprehension
- Applied Psychology Unit (APU): Vocab test, Maths test
- Number Analogies (GL Assessment)
- Schonell Reading Test; Southgate Group Reading Test; Edinburgh Reading Test;
 English Picture Vocabulary Test
- Copying Designs Test; Human Figure Drawing; Complete a Profile Test

				CENTRE FOF LONGITUDIN STUDIES
Cognition	NCDS 58	BCS 70	NS 89	MCS 01
Developmental milestones		22 months*, 42 months*		9 months
School readiness (BSRA-R)				3
Verbal reasoning	11	10		11
Non-verbal reasoning	11	10,16		5
Verbal skills (i.e. reading, comprehension, vocabulary, literacy)	7,11,16,37*, 62	5,10,16,21*,34,42, 51		3,5,7,14
Mathematics and numeracy	7,11,16,37*	10,16,21*,34		7,17
Visual/spatial processing	7	5		5,7
Decision making				11,14
Memory (short-term, long-term, spatial, working)	50, 62	10,46, 51	32	11
Processing speed	50, 62	46, 51		
				* sub-sample



				CENTRE FOR LONGITUDINAL STUDIES
Occupation, earnings and income	NCDS 58	BCS 70	NS 89	MCS 01
Earnings from work (CM and parents)		10, 16, 26, 30, 34, 38, 42, 46, 51		3, 7, 11, 14, 17
Income (investments, income support, benefits, etc.)			14, 15, 16, 17, 18,19, 20, 25, 32	3, 7, 11, 14, 17
Occupation	11, 33, 42, 46, 50, 55, 62		14, 15, 16, 17, 18,19, 20, 25, 32	3, 7, 11, 14, 17
Social mobility (generational analysis)	✓	✓	✓	✓
Wealth (actual): Housing Financial	55, 62	42, 51	32	11,14
SavingsDebtPensions	23,33,50, 62 33 62	34, 42, 46, 51 42, 46, 51 51		7,11,14 7,11,14 3, 5, 7, 11, 14
Self-report, parents				

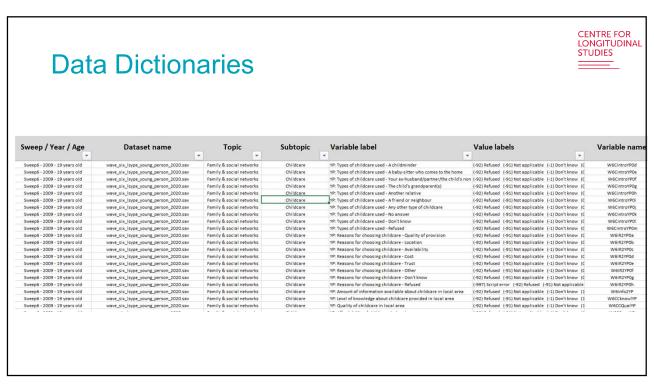


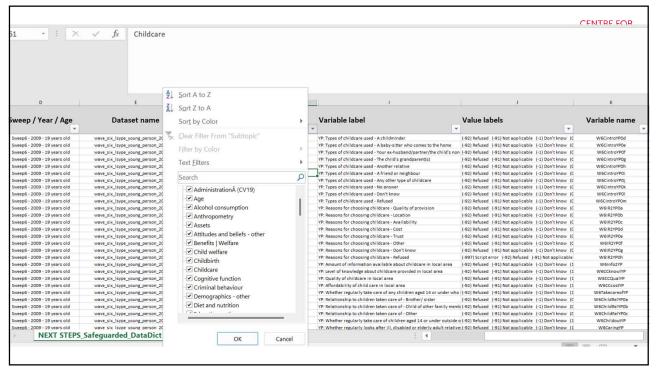


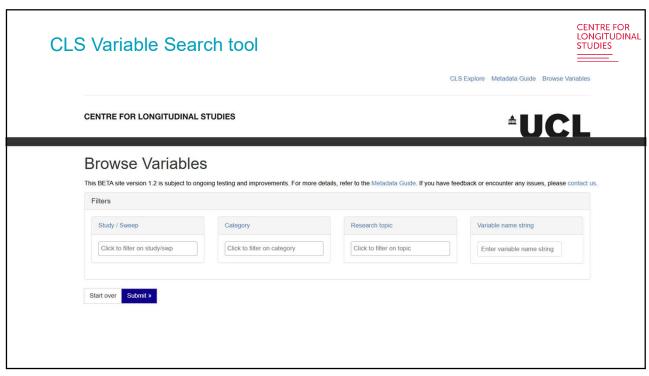
Data Dictionaries

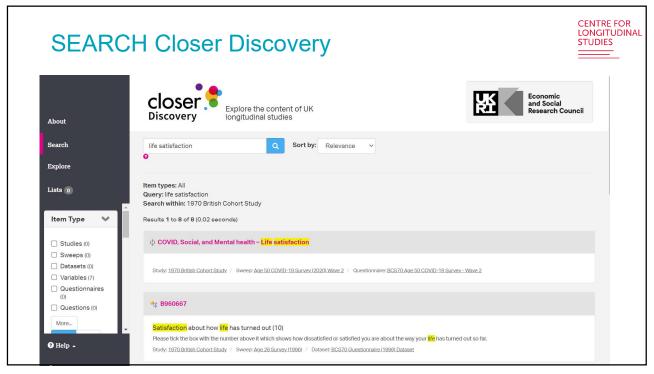


- NCDS Data Dictionary
- BCS70 Data Dictionary
- Next Steps Data Dictionary
- MCS Data Dictionary







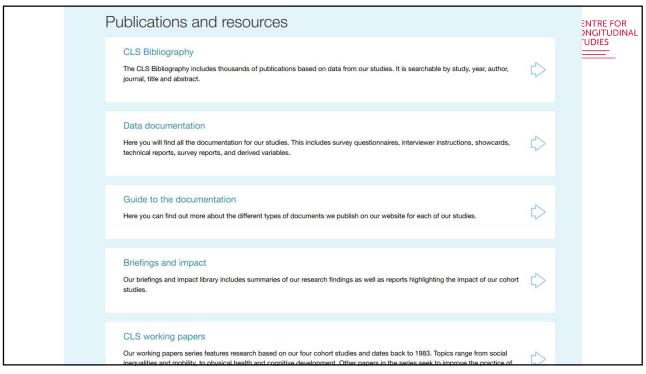


Alternative methods for identifying variables



- Search in questionnaires (available from UK Data Service or <u>CLS</u> website)
- Or download the actual datasets and search the variables (<u>UK</u>
 <u>Data Service</u>)
- Descriptions of variables in published papers (most of which can be found in the CLS bibliography)

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Additional sources of information



Physical health

- Fluharty, M., Villadsen, A., Kandola, A., Griffiths, L., O'Neill, D., Pinto Pereira, S., Timpson, N., Cooper, R., Bann, D.(2020). Physical activity across age and study: a guide to data in six CLOSER studies. London, UK: CLOSER.
- Rajatileka S, Groom A, Ring S. Harmonisation of strategies for exploitation of biological sample collections. London, UK: CLOSER; 2017.
- Ruiz M, Benzeval M, Kumari M. A guide to biomarker data in the CLOSER studies: A catalogue across the cohort and longitudinal studies. London, UK: CLOSER; 2017.
- Maddock, J., O'Neill, D., Robinson, S., Crozier, S., Jameson, K., Dodgeon, B., Suderman, M., Emmett, P., Gush, K., Burton, J., Payne, J., Kumari, M., & Hardy, R. (2020). A guide to the dietary data in eight CLOSER studies. London, UK: CLOSER.

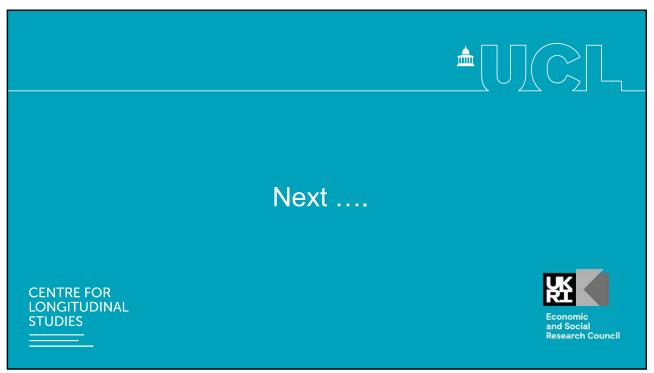
Mental Health and Wellbeing

McElroy, E., Villadsen, A., Patalay, P., Goodman, A., Richards, M., Northstone, K., Fearon, P., Tibber, M., Gondek, D., & Ploubidis, G.B. (2020). Harmonisation and Measurement Properties of Mental Health Measures in Six British Cohorts. London, UK: CLOSER.

Cognitive ability

Moulton, V., McElroy, E., Richards, M., Fitzsimons, E., Northstone, K., Conti, G., Ploubidis, G.B., Sullivan, A., O'Neill, D. (2020). A guide to the cognitive measures in five British birth cohort studies. London, UK: CLOSER.

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Examples of the types of analyses that can be undertaken using CLS cohort data

Richard Silverwood

Professor of Statistics & CLS Chief Statistician

CENTRE FOR LONGITUDINAL STUDIES

27 November 2025



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Outline

CENTRE FOR LONGITUDINAL STUDIES

- 1. Simple analyses
- 2. Confounder control
- 3. Repeated measures
- 4. Cross-cohort analysis

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Simple analyses

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Simple analyses

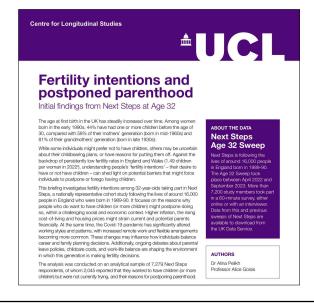


- The cohorts provide rich data collected on cohort members over many years/decades, so complex analyses possible.
- But let's start with some simple (more descriptive) examples...

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Simple analyses: Examples

CENTRE FOR LONGITUDINAL STUDIES



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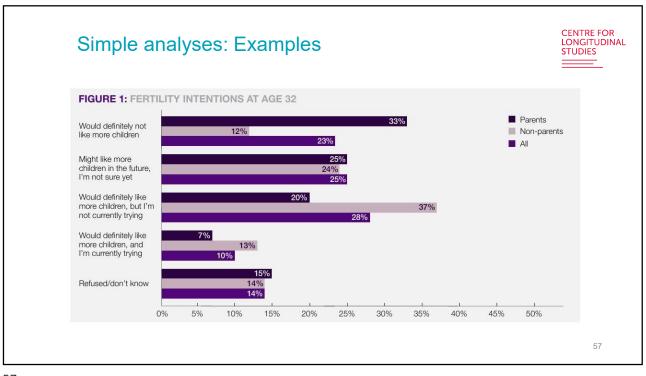
Simple analyses: Examples



Which of these statements best describes the way you feel about having (more) children?

- I would definitely like (more) children, and I'm currently trying
- I would definitely like (more) children, but I'm not currently trying
- I might like (more) children in the future, I'm not sure yet
- I would definitely not like (more) children
- I don't know
- Prefer not to say

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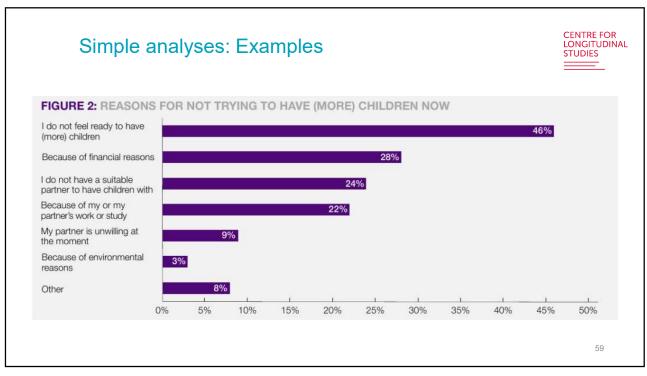
Simple analyses: Examples

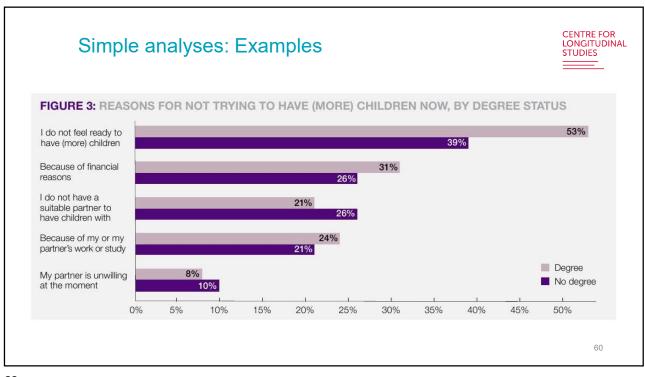
CENTRE FOR LONGITUDINAL STUDIES

Which one of the following best describes the main reason you are not currently trying to have (more) children?

- I do not feel ready to have (more) children yet
- I do not have a suitable partner to have children with
- My partner is unwilling at the moment
- Because of financial reasons
- Because of my work or study
- Because of my partner's work or study
- Because of environmental reasons
- Other (please specify)
- Don't know/Prefer not to say

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Simple analyses: Key message



 Great opportunity for simple (more descriptive) analyses – literally thousands of interesting variables collected in the cohorts.

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Confounder control

Confounder control



- If we want an estimated association between an independent variable and a dependent variable to have any causal interpretation, we need to consider confounder control.
- Confounder: A variable that causes non-causal (spurious) association between an independent variable (exposure) and a dependent variable (outcome).

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Confounder control



- If we want an estimated association between an independent variable and a dependent variable to have any causal interpretation, we need to consider confounder control.
- Confounder: A variable that causes non-causal (spurious) association between an independent variable (exposure) and a dependent variable (outcome).

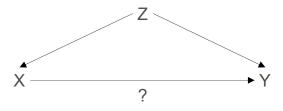


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Confounder control

CENTRE FOR LONGITUDINAL STUDIES

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65

65

Confounder control



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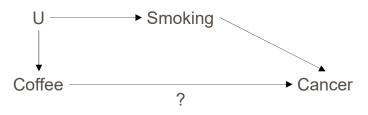


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Confounder control

CENTRE FOR LONGITUDINAL STUDIES

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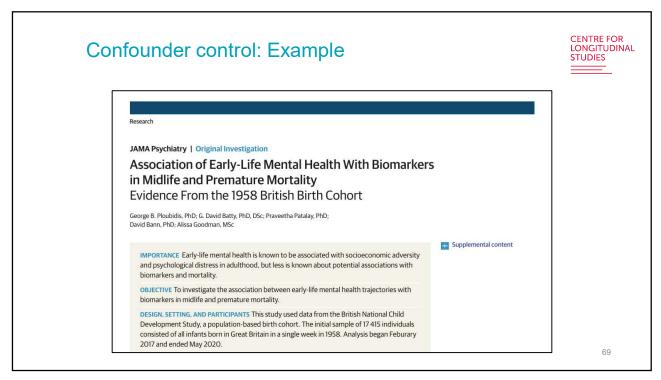
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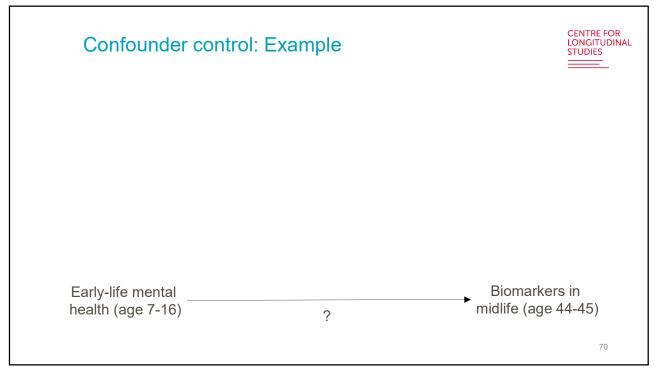
Confounder control



- If we want an estimated association between an independent variable and a dependent variable to have any causal interpretation, we need to consider confounder control.
- Confounder: A variable that causes non-causal (spurious) association between an independent variable (exposure) and a dependent variable (outcome).
- Thankfully, the rich data collected on cohort members over many years/decades provide great opportunity for confounder control.

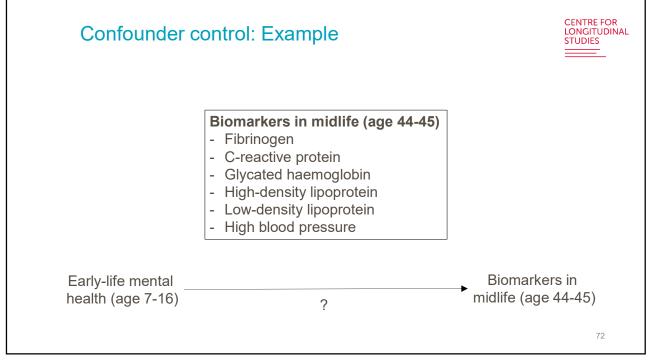
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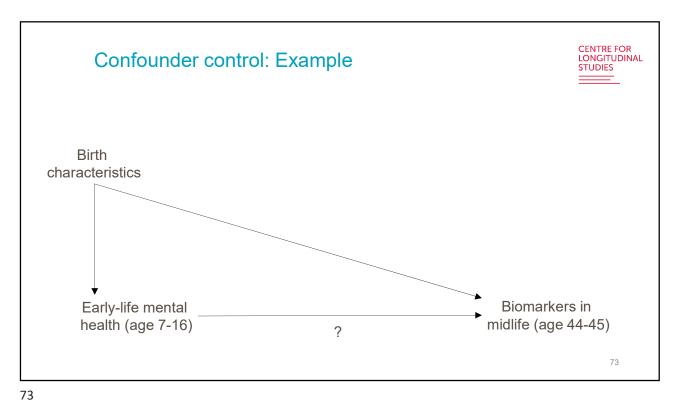


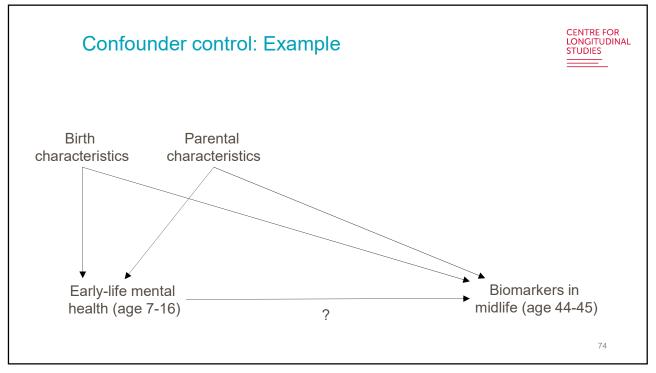


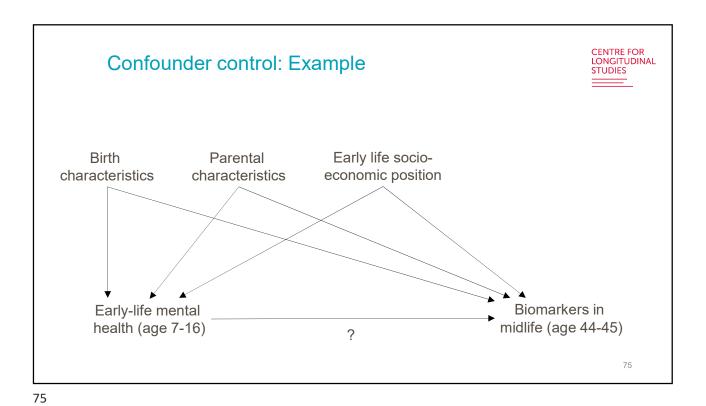
Confounder control: Example Early-life mental health (age 7-16) Rutter Child Scale A at ages 7 and 11 (mothers) and at age 16 (teachers): - Conduct problems - Affective symptoms Early-life mental health (age 7-16) Riomarkers in midlife (age 44-45)

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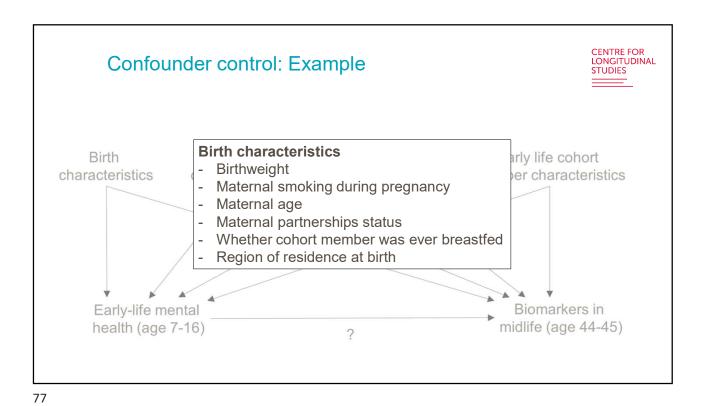




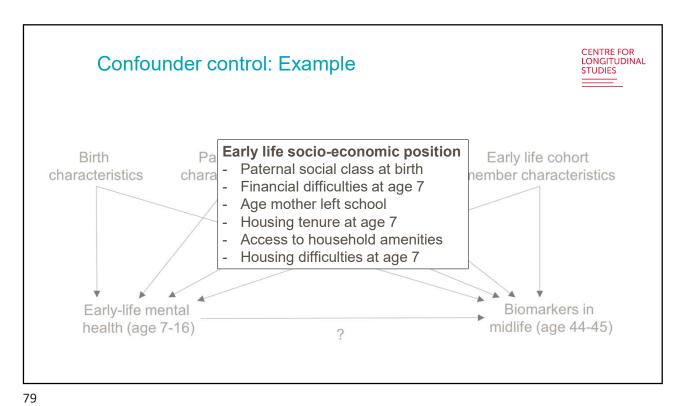


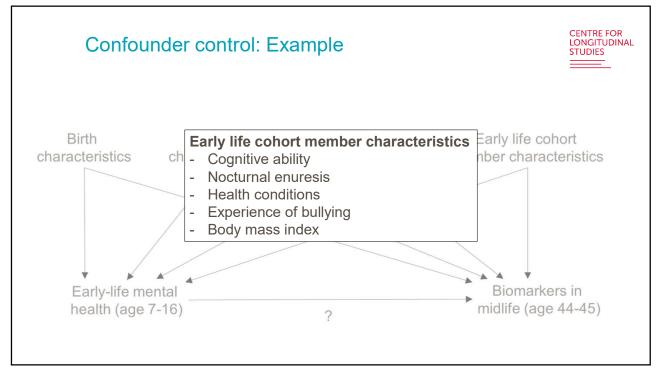


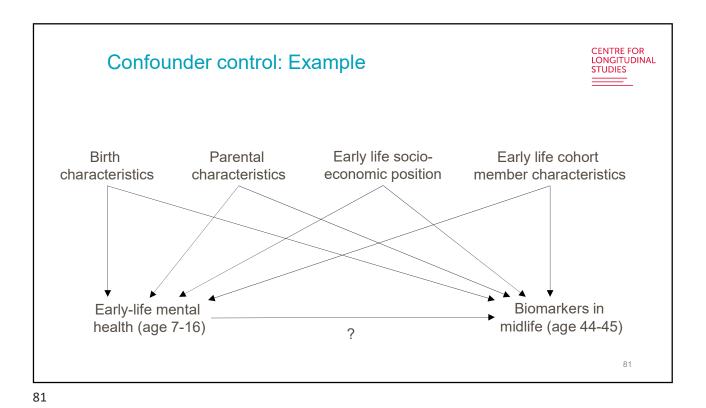
CENTRE FOR LONGITUDINAL STUDIES Confounder control: Example Early life socio-Early life cohort Birth Parental characteristics characteristics economic position member characteristics Early-life mental Biomarkers in midlife (age 44-45) health (age 7-16) ? 76



CENTRE FOR Confounder control: Example LONGITUDINAL STUDIES life cohort Birth **Parental characteristics** characteristics characteristics - Maternal employment up to age 5 - Parents reading to child - Parental interest in school Divorce by age 7 Separation from child from more than one month Early-life mental Biomarkers in midlife (age 44-45) health (age 7-16)







Confounder control: Key message

CENTRE FOR LONGITUDINAL STUDIES

 The rich data collected on cohort members over many years/decades provide great opportunity for confounder control.

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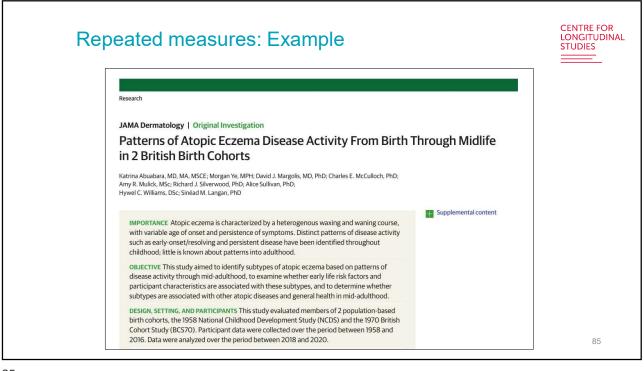
Repeated measures

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Repeated measures



- Long-running cohorts measuring consistent topics over time provide repeated measures of the same measurement/construct.
- Examples:
 - Physical measurements
 - General physical health, mental health, specific diseases/conditions, health behaviours
 - o Relationships, marital status, household composition
 - o Employment status, occupation, earnings and income
- Allows you to characterise changes or trajectories over time.

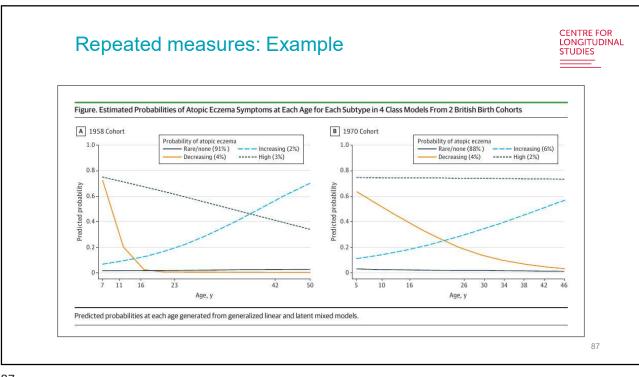


Repeated measures: Example



- Aimed to identify subtypes of eczema based on patterns of disease activity in NCDS and BCS70.
- Parent-reported or self-reported eczema period prevalence available from standardised questions at ages 7, 11, 16, 23, 42 and 50 in NCDS and ages 5, 10, 16, 26, 30, 34, 38, 42 and 46 in BCS70.
- Then examined whether:
 - early life risk factors associated with eczema subtypes
 - eczema subtypes associated with other atopic diseases and general health in mid-adulthood

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Repeated measures: Key message



- The CLS cohort studies provide repeated observations of the same measurement/construct.
- Allows you to characterise changes or trajectories over time.

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Cross-cohort analysis

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Cross-cohort analysis



- Conducting analyses across multiple cohorts allows us to extend our hypotheses: how do things change over time or between cohorts?
- Ideally want to analyse identical measures across cohorts.
- In absence of this, need consider how measures can best be harmonised.

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Cross-cohort analysis: Example

CENTRE FOR LONGITUDINAL STUDIES

Socioeconomic inequalities in childhood and adolescent body-mass index, weight, and height from 1953 to 2015: an analysis of four longitudinal, observational, British birth cohort studies



David Bann, William Johnson, Leah Li, Diana Kuh, Rebecca Hardy

oa

Summary

Background Socioeconomic inequalities in childhood body-mass index (BMI) have been documented in high-income countries; however, uncertainty exists with regard to how they have changed over time, how inequalities in the composite parts (ie, weight and height) of BMI have changed, and whether inequalities differ in magnitude across the outcome distribution. Therefore, we aimed to investigate how socioeconomic inequalities in childhood and adolescent weight, height, and BMI have changed over time in Britain.

3: e194-203 Published Online March 20, 2018 http://dx.doi.org/10.1016/ 52468-2667(18)30045-8 See Editorial page e153

Methods We used data from four British longitudinal, observational, birth cohort studies: the 1946 Medical Research Council National Survey of Health and Development (1946 NSHD), 1958 National Child Development Study (1958 NCDS), 1970 British Cohort Study (1970 BCS), and 2001 Millennium Cohort Study (2001 MCS). BMI (kg/m²) was derived in each study from measured weight and height. Childhood socioeconomic position was indicated by the

See Comment page e160
Centre for Longitudinal
Studies, University College
London (UCL) Institute of

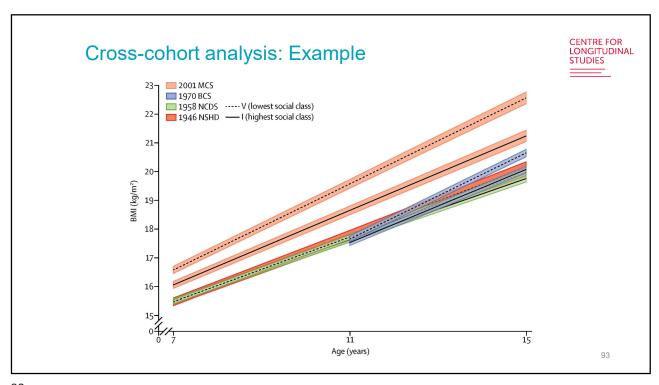
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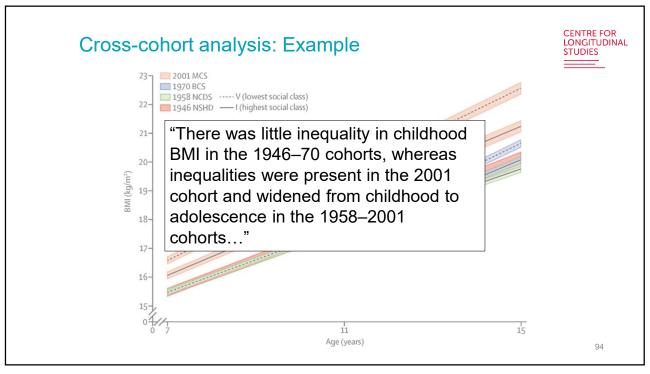
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Cross-cohort analysis: Example



- Investigated how socioeconomic inequalities in childhood and adolescent weight, height, and BMI have changed over time.
- Used data from NSHD (BMI at ages 7, 11 and 15), NCDS (7, 11 and 16), BCS70 (10 and 16) and MCS (7, 11 and 14).
- Childhood socioeconomic position indicated by father's occupational social class reported at age 10-11.
- Examined associations between childhood socioeconomic position and BMI to assess socioeconomic inequalities.
- Examined whether inequalities widened or narrowed from childhood to adolescence.





Cross-cohort analysis: Key message

CENTRE FOR LONGITUDINAL STUDIES

 Conducting analyses across multiple cohorts allows us to extend our hypotheses: how do things change over time or between cohorts?

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Cross-cohort analysis: Key message



 Conducting analyses across multiple cohorts allows us to extend our hypotheses: how do things change over time or between cohorts?



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This section



- Accessing the data
- Additional resources
- Datasets, key identifiers (IDs)
- Study design and survey variables
- Non-response and attrition
- Where to go for more information

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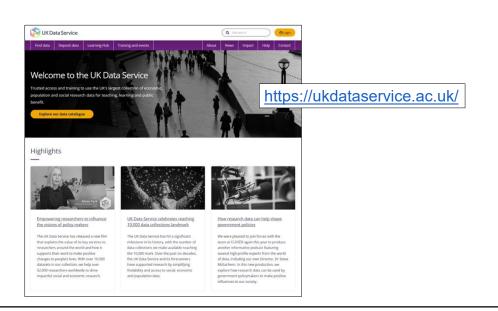
Accessing the data

CENTRE FOR LONGITUDINAL STUDIES

Researchers in the UK and around the world can access data from our cohort studies free of charge.

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UK Data Service



Access to different types of data at UKDS

Safeguarded data: End User Licence (EUL)

- Low level of sensitivity and disclosivity.
- Most of our data are available under this licence.
- Application approved directly by UKDS.
- Download data from UKDS.

Special safeguarded data:
Special Licence (SL)

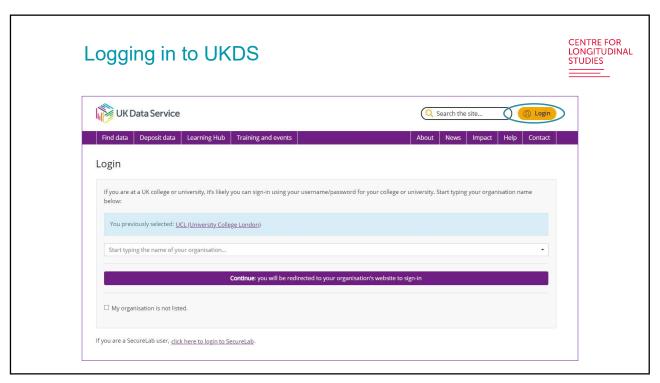
- Moderately sensitive or disclosive data.
- Application approved by CLS.
- Download data from UKDS.

Controlled data: Secure Access Licence (SA)

- The most sensitive and/or potentially disclosive data.
- Application approved by CLS.
- Attend specialised training.
- Access via UKDS SecureLab.

More information: https://cls.ucl.ac.uk/data-access-training/data-access/

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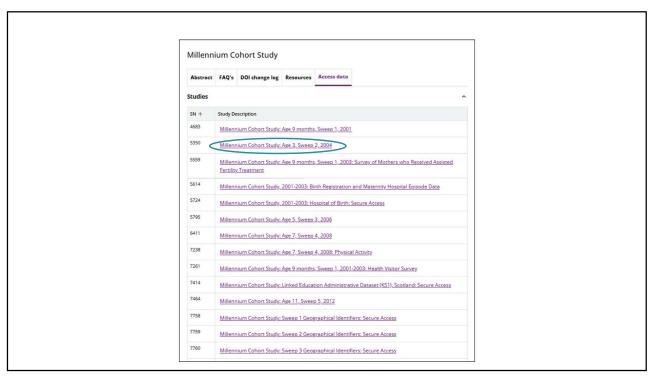
CLS cohort data at UKDS

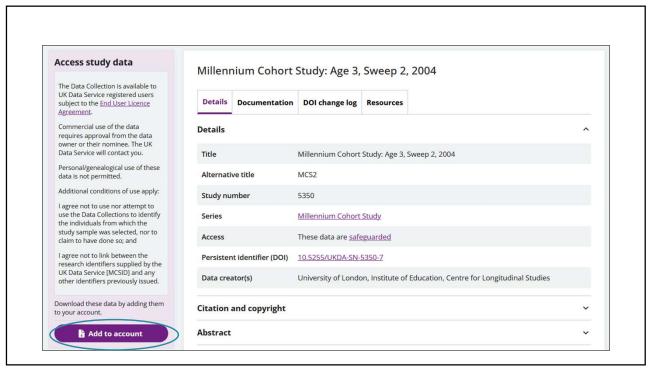


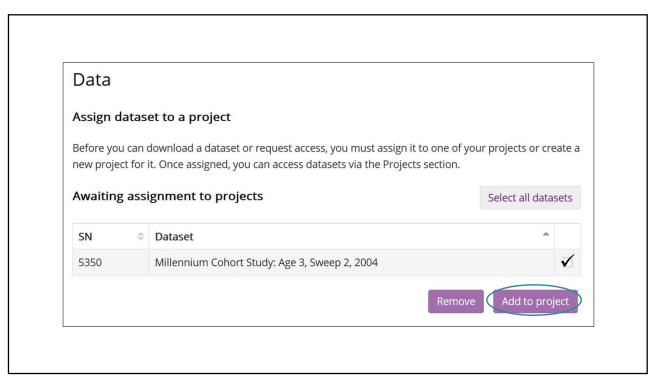
Links to the relevant area of UKDS for each study:

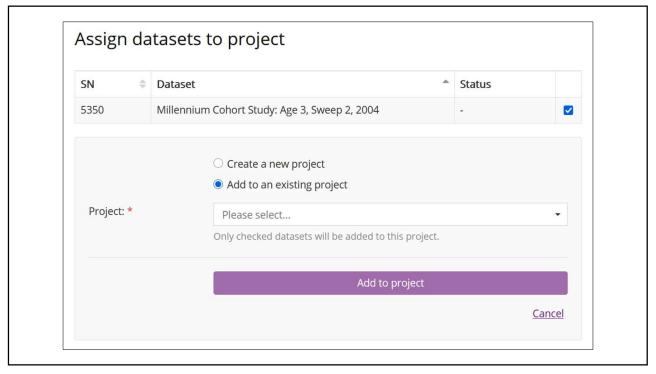
- 1958 National Child Development Study
- 1970 British Cohort Study
- Next Steps
- Millennium Cohort Study

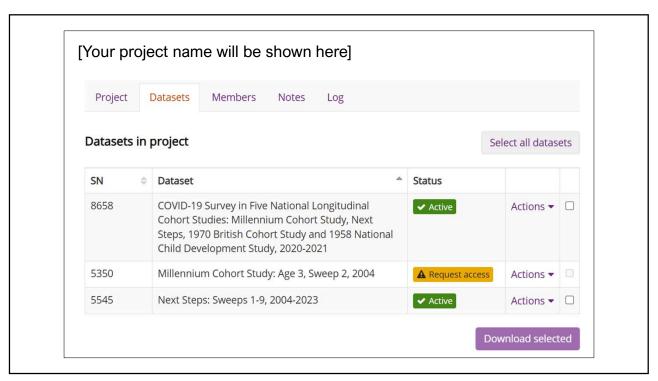
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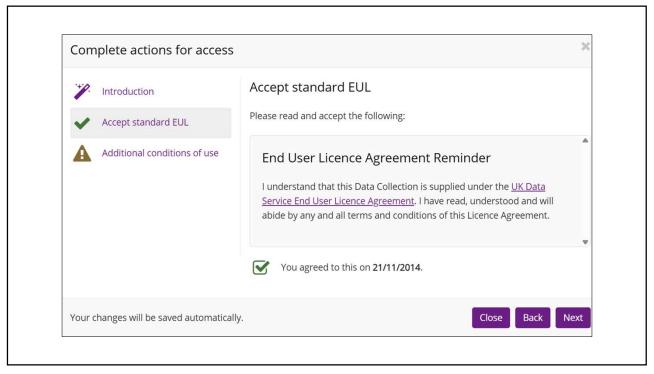


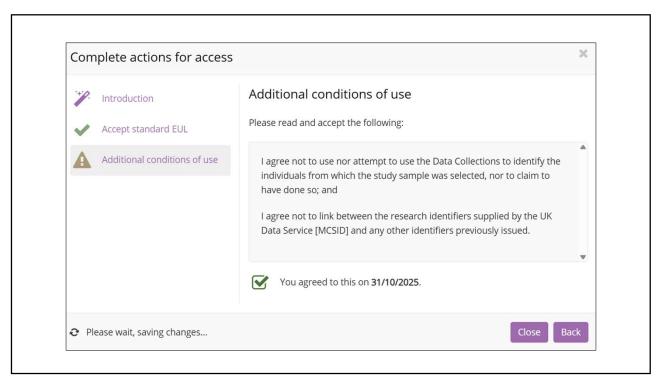


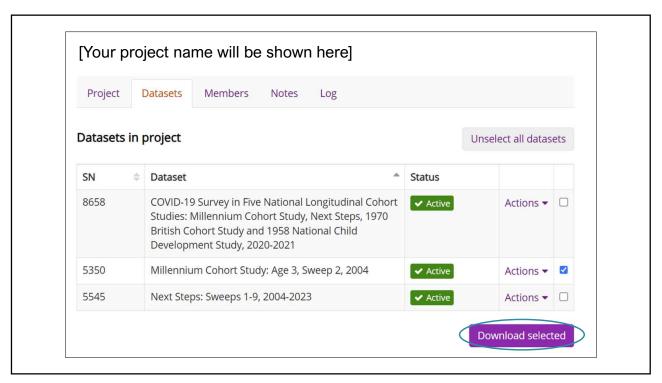












Download			
		Selec	t all downloads
File Format	File Size (mb)	Download	
Dataset:Millennium C	ohort Study: Age 3, Sweep 2, 2004		
SPSS	22.79	Download	0
STATA	21.81	Download	\checkmark
TAB	23.31	Download	0
			vnload selected



Other resources

CENTRE FOR LONGITUDINAL STUDIES

User guides

- Overview of measures
- Response and weights

Questionnaires

- Exact question wording
- Questionnaire routingVariable names

Data documentation

- Data notes
- Coding frames
- Variables lists, including derived variables

Technical reports

- Sample and questionnaire design, development
- Fieldwork, response, ethicsCoding, editing

Cohort profiles...

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Cohort profiles



- Power C, Elliott J. Cohort profile: 1958 British birth cohort (National Child Development Study). Int J Epidemiol. 2006;35(1):34-41. https://doi.org/10.1093/ije/dyi183
- Sullivan A, Brown M, Hamer M, et al. Cohort Profile Update: The 1970 British Cohort Study (BCS70). Int J Epidemiol. 2023;52(3):e179-e86. https://doi.org/10.1093/ije/dyac148
- Wu AF, Henderson M, Brown M, et al. Cohort Profile: Next Steps the longitudinal study of people in England born in 1989-90. Int J Epidemiol. 2024;53(6). https://doi.org/10.1093/ije/dyae152
- Joshi H, Fitzsimons E. The Millennium Cohort Study: the making of a multi-purpose resource for social science and policy. Longitudinal and Life Course Studies. 2016;7(4):409-30. https://doi.org/10.14301/llcs.v7i4.410

Datasets, key identifiers (IDs)

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Example datasets

Name	Contents	Structure
NS8_2015_Main_Interview	Modules 1 to 7	Flat
NS8_2015_Self_Completion	Module 8	Flat
NS8_2015_Partnerships	Relationship histories	Hierarchical
NS8_2015_Children	Details of children of CM	Hierarchical
NS8_2015_Household_Members	Details of members living in same household as CM	Hierarchical
NS8_2015_Activity_History	Activities and Employment histories	Hierarchical
NS8_2015_Benefits	Details of individual benefits received	Hierarchical
NS8_2015_Income_Unfolding_brackets	Unfolding brackets questions for payments and income	Flat
NS8_2015_Benefits_Unfolding_brackets	Unfolding brackets questions for benefits	Hierarchical
NS8_2015_Derived_variables	Derived variables	Flat

Key identifiers (IDs)



Cohort members have their own consistent identifiers (IDs):

NCDS: NCDSID

BCS70: BCSID

Next Steps: NSID

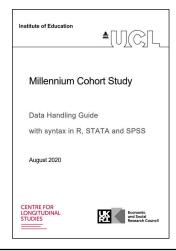
Further IDs in MCS:

· MCSID identifies families

· CNUM identifies cohort members within families

PNUM identifies everyone else in the family

Use these IDs to combine datasets.



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Study design and survey variables

Study design and survey variables

CENTRE FOR LONGITUDINAL STUDIES

Cohort	Target population	Study design	Survey variables
NCDS	All born in GB in one week in 1958	Captured 98% of all births in GB in target week	None
BCS70	All born in GB in one week in 1970	Captured 95-98% of all births in GB in target week	None
Next Steps	Young people in	Schools first sampled, then pupils within schools	PSU: SampPSU
	England in 2004 born Sept 1989 to Aug 1990	Deprived schools and pupils from minority ethnic groups oversampled	Strata: SampStratum Design weight: DESIGNWEIGHT
MCS	Children born Sept 2000 to Jan 2002 and living in	Areas of residence first sampled, then all eligible children selected	PSU: sptn00 Strata: PTTYPE2
	UK at age nine months	Children living in disadvantaged areas, children of ethnic minority backgrounds and children growing up in the smaller nations of the UK all oversampled	Design weight: WEIGHT2

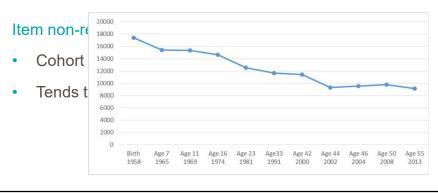
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Non-response and attrition

Non-response and attrition

Sweep non-response

- Cohort members not responding to a particular sweep.
- Common in longitudinal surveys.



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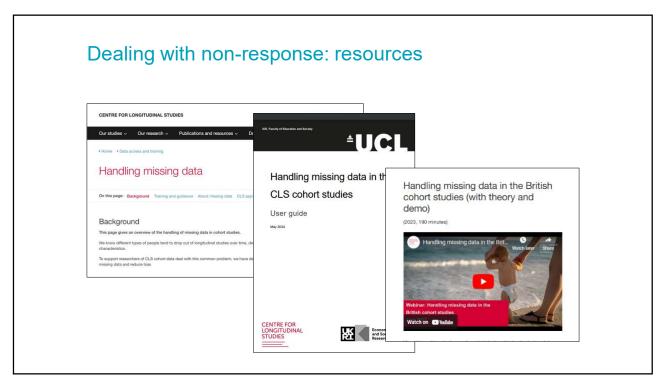
Complete case analysis

- Missing data reduce analysis sample size → lower statistical power.
- Potential risk to representativeness as respondents often systematically different from non-respondents.
- Analysing only cohort members with observed data ('complete case analysis') may therefore lead to bias.

Non-response weights

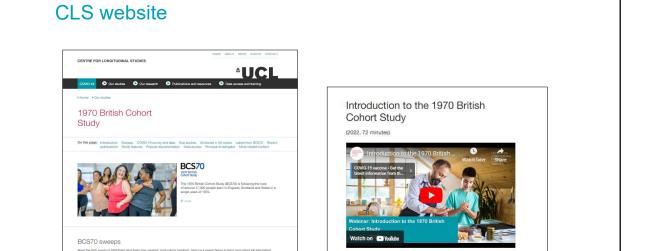
- Reweight the respondents at a given sweep to be representative of the original sample.
- · Provided in:
 - MCS: all sweeps; country-specific and UK-wide versions
 - Next Steps: all sweeps
 - NCDS: most recent sweep only
 - BCS70: most recent sweep only
- See relevant user guides for full details.
- Can derive own analysis-specific weights.

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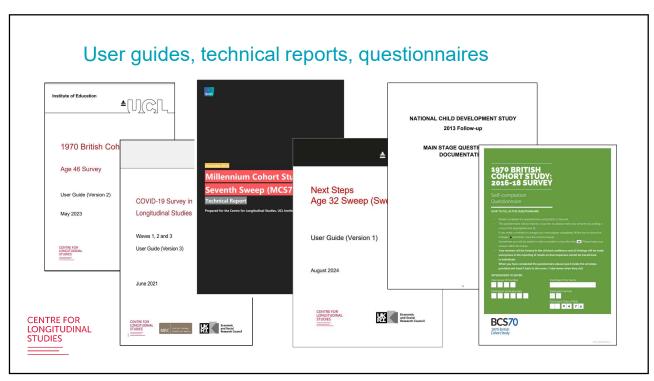


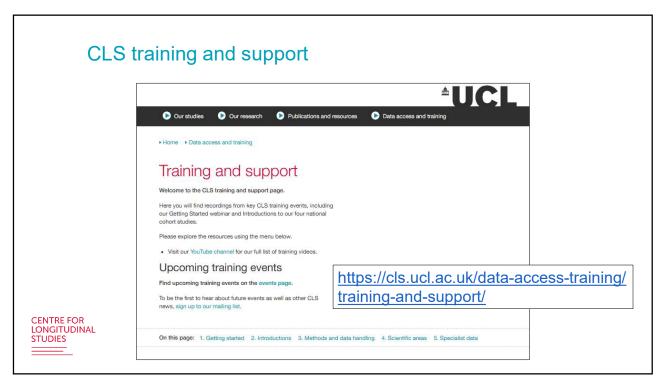
Where to go for more information

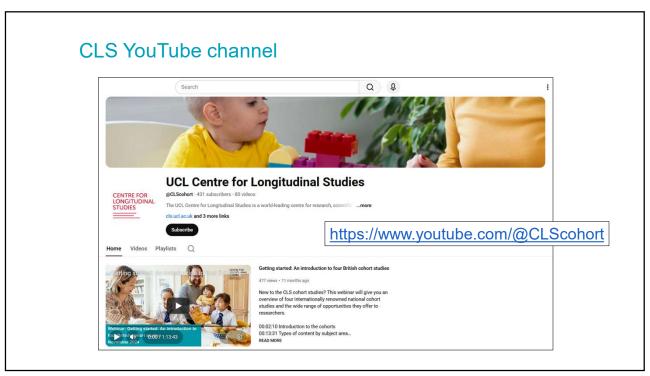
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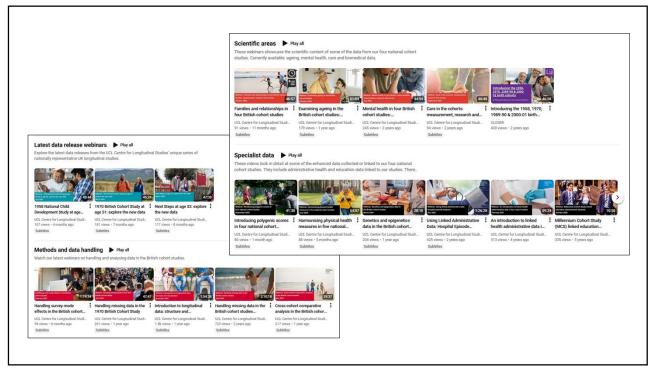


https://cls.ucl.ac.uk/



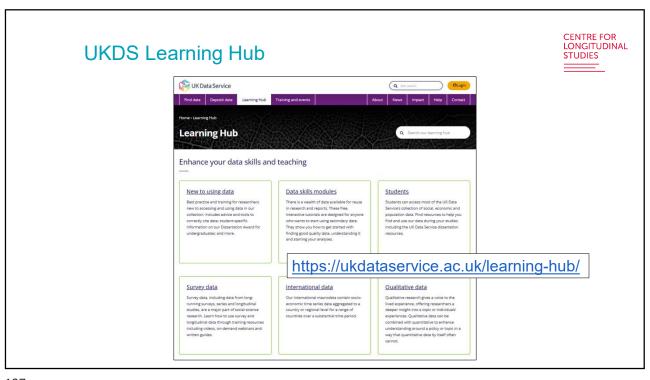












What we've covered



- · An introduction to birth cohorts
- Some of the content in the CLS cohorts by subject areas
- Examples of the types of analysis
- Getting started with the data
- Where to go for more information