Physical health in four British cohort studies

3 November 2026

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UKRI Economic and Social Research Council

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Aims

- Outline 'physical health' measures and data available in the CLS cohorts
- How to access physical health data in the CLS cohorts
- Understand how the British cohorts are a unique resource in the study of physical health
- Highlight the types of physical health research that can be done using birth cohorts
- Opportunity for Q&A

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Speakers

- Dr Charis Bridger-Staatz - Senior Research Fellow
- Dr Vanessa Moulton - Senior Research Fellow

Q&A

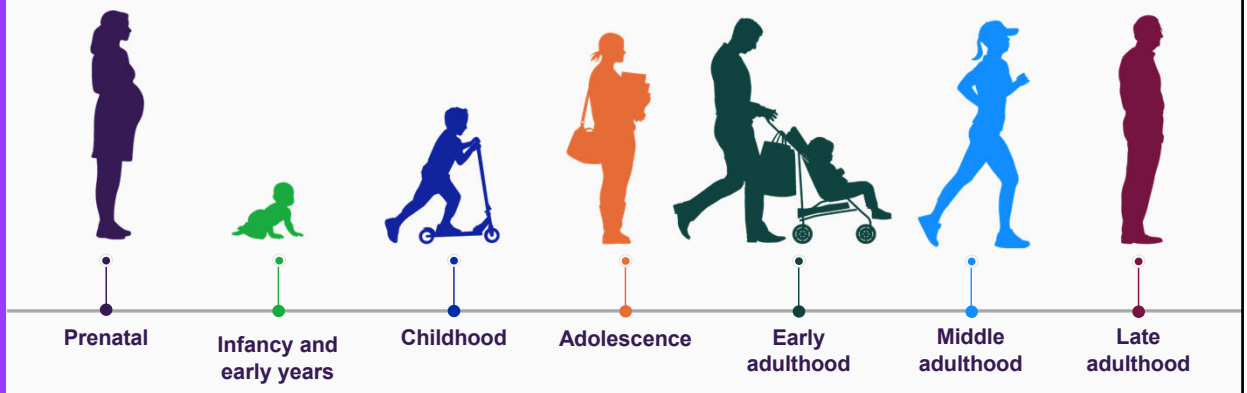
- Prof. George B Ploubidis - Director of 1958 NCDS & 1970 BCS
- Prof. Matt Brown - Senior Survey Manager
- Dr Laura Gimeno - Research Fellow

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The life course approach

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Four core national cohort studies

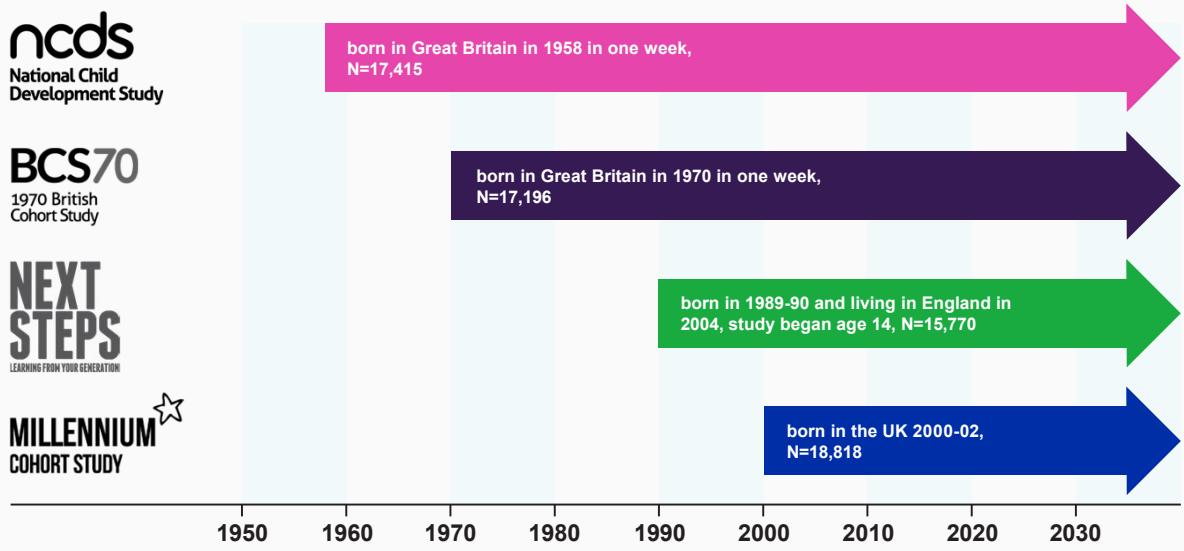
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ncds National Child Development Study

BCS70 1970 British Cohort Study

NEXT STEPS LEARNING FROM YOUR GENERATION

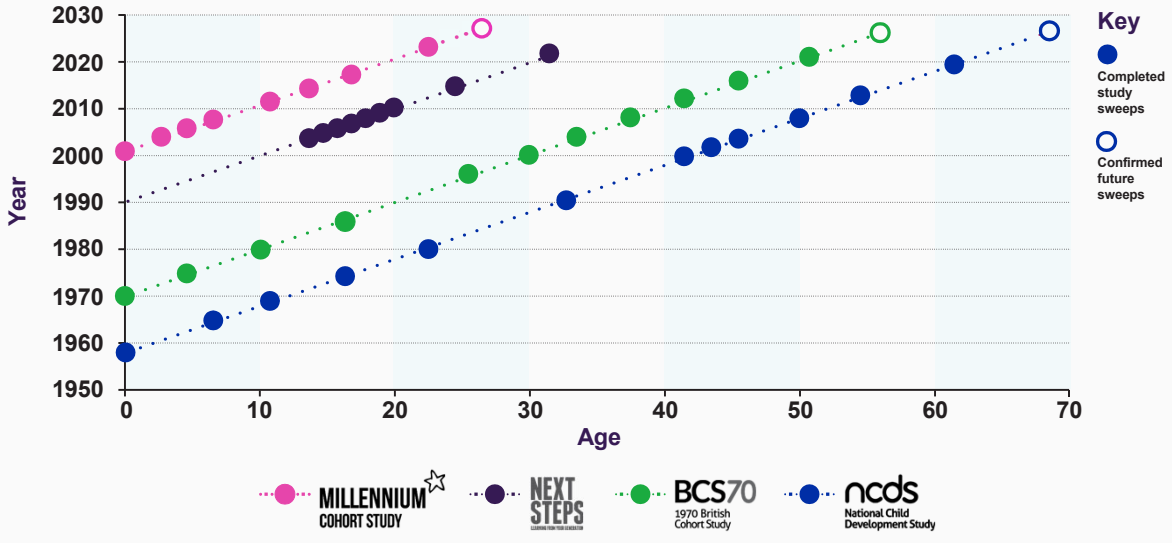
MILLENNIUM COHORT STUDY



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Study timelines

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Types of information collected across life

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Prenatal	Infancy and early years	Childhood	Adolescence	Early adulthood	Middle adulthood	Late adulthood
Pregnancy Birthweight Labour length	Motor skills Play Home and family	Childcare Friendships School	Risky behaviours Aspirations Peers	Work Partnerships Parenthood	Career Wealth Caring responsibility	Retirement Pensions Healthy ageing

Health | Well being | Employment | Education and skills | Family relationships

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Physical health measures and data



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Medical history (survey data)

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Measure	NCDS	BCS70	Next Steps	MCS
Birth: e.g. problems in pregnancy and labour, birthweight, gestational age, obstetric history	Birth	Birth		9mths
Immunisation/vaccinations	7,16, COVID, 62	0, 5,10,16, COVID, 51	COVID, 32	9mths, 3, 5,14, COVID
Accidents and injuries	11, 16, 23, 33, 42	5, 10, 16, 26, 30		9mo, 3, 5, 7, 11, 14, 17
Hospital admissions	7,11,16, 23, 33, 42, COVID, 62	5,10,16,30,34, COVID	COVID, 32	9mths, 3, 5, 7,14,17, COVID
Medication	44/5, 62	10, 46		5, 7, 11, 14, COVID, 23

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Assessment of physical health

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Measure	NCDS	BCS70	Next Steps	MCS
Parent/self-report of CM's health in general	7, 11, 16, 33, 42, 44, 46, 50, 55, 62	16, 26, 30, 34, 38, 42, 46, 51	15, 16, 17, 25, 32	9mo, 3, 5, 7, 11, 14, 17, 23
Medical conditions/Long standing illness	0, 7, 11, 23, 33, 42, 44, 46, 50, 55, 62	5, 10,16, 26, 30, 34, 38, 42, 46, 51	COVID	9mo, 3, 5, 7, 11, 14, 17, 23
Short-form health survey (SF-36)	50, 62	46, 51		
Reproductive health: Pubertal assessment Contraception Pregnancy history Infertility Gynecological problems Hysterectomies/Oophorectomies Menopause HRT	 11, 16 23, 42, 44, 50 23, 33, 42, 46, 50 23, 42 42, 50, 62 44, 50, 62 44, 50, 55, 62 44, 50, 62	 10,16 16, 30, 46 30, 34, 38, 42, 51 30, 42, 51 30, 38, 42, 46, 51 42, 46, 51 42, 46, 51 42, 46, 51	 32 25, 32 32 32	 14, 17, 23 17, 23 17, 23

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Anthropometrics/measures of physical function

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Measurement	NCDS	BCS70	Next Steps	MCS
Height, weight and BMI	7, 11**, 16, (23), (33), (42), 44, (50), (55), 62*	5***,10**, 16, (26), (30), (34), (42), 46, (51)	(25) (32)	3**,5,7,11,14,17, 23
Head circumference	7	5,10,16		
Waist and hip circumference	44, 62	46		5,7 (waist)
Body fat	62	46		7,11,14,17, 23
Vision	7,11,16, 44, (62)	10, 16, (30)		
Audiometry	7,11,16, 44, (62)	10,16, (26), (30), (34), (51)		
Laterality	7	10,16		
Co-ordination	7,11,16	10, 16		
Speech	7,11,16	10		
Blood pressure	44, 62	10, 16, 46		
Pulse	44, 62	10		
Respiratory function (FEV1 and FVC)	44			
Grip strength	62	46		
Leg-raise balance	62	46		
Timed normal walking speed	62			

* Height from age 44 or self-report
** also parents' height and weight,
*** height only
() self-report

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Biomarkers

extracted from blood samples

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Biomarker	NCDS	BCS70
Total and HDL cholesterol	44, 62	46
Triglycerides	44, 62	46
C-reactive protein (CRP)	44, 62	46
Glycated haemoglobin (HbA1c)	44, 62	46
Insulin-like growth factor 1 (IGF-1)	44, 62	46
Troponin-I (hsTnI)	62	
N-terminal prohormone of B-type natriuretic peptide (NT-proBNP)	62	
Growth Differentiation Factor 15 (GDF-15)	62	
Total and allergen-specific immunoglobulin E House Dust Mite, Cat and Grass Pollen Allergens	44, 62	
Fibrinogen	44, 62	
Tissue plasminogen activator (t-PA)	44, 62	
Von Willebrand factor (9vWF)	44, 62	
Serum 25-hydroxyvitamin D	44, 62	
Fibrin D-dimer	44, 62	
Ferritin		46
Cytomegalovirus		46
Red blood cell count		46

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Health behaviours

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Physical health measures	NCDS	BCS70	Next Steps	MCS
Physical activity (leisure time)	11, 16, 23, 33, 42, 44, 46, 50, 55, 62	16, 16, 30, 34, 42, 46, 51	14,15,16,17,19, 20,25,32	5, 7, 11, 14, 17, 23
Diet related measures (intake, overeating) ▪ Online dietary questionnaire (Oxford WebQ)	7, 33, 42, 44, 62 62	10, 16, 30, 34, 42, 46, 51 46, 51	25, 32	9mo, 5, 7, 11, 14, 17, 23
Smoking Mothers smoking before and during pregnancy CM smoked during pregnancy	16, 16, 23, 33, 42, 44, 46, 50, 55, 62 0 33, 42	5, 10, 10, 16, 26, 30, 34, 38, 42, 46, 51 0 34*	14,15,16,25,32	9mo, 3,5,7,11, 11, 14, 14, 17, 23 9mo 23
Alcohol consumption ▪ AUDIT-PC	16, 23, 33, 42, 46, 50, 55, 62 44, 50, 62	16, 16, 26, 30, 34, 42, 46, 51 42, 46, 51	14,15,16,17,19, 20,25 25, 32	9mo, 3,5,7,11, 11, 14, 14, 17, 23 14, 23
Recreational drugs	42	16, 30	19, 20, 25, 32	14, 17, 23
Sleep	7,16, 50, 62	5, 16, 42, 46, 51	15, 17, 25, 32	9mo, 5,7,11,14, 17, 23

Key: CM self-report, parent self-report, *sub-sample

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Measurement of physical activity

Available via the UKDS
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MCS Age 7, 14: Activity monitor

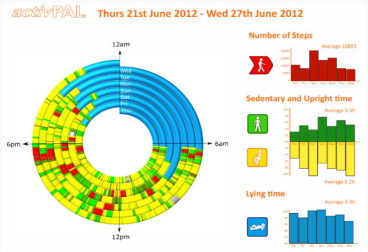
- Age 7: Actigraph (waist) – every day for 7 days during waking hours (7)
- Age 14: Geneactiv accelerometer (wrist) – 1 weekday & 1 weekend day measured physical and sedentary activity (14)

MCS 14: Time use diary

- Age 14 time-use diaries recorded activities, paired with accelerometer.
- The diaries contain ~8900 days of information from ~4800 cohort members
- Information includes sleep, personal care and physical activity

BCS70 Age 46: Accelerometer

- Thigh worn ActivPal device worn for 7 days
- Accelerometer and also measures postural allocation to accurately distinguish between different types of sedentary activity (standing, sitting, sleeping) and transitions between



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COVID-19 and serology surveys

Available via the UKDS
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COVID-19 surveys response					
Wave	NCDS	BCS70	Next Steps	MCS CMs	MCS parents
Wave 1	5,178	4,223	1,907	2,645	2,831
Wave 2	6,282	5,320	3,664	3,274	5,707
Wave 3	6,809	5,578	4,239	4,474	5,251

cls.ucl.ac.uk/covid

Serology survey response	
NCDS	3,222
BCS70	2,547
Next Steps	1,267
MCS CMs	1,140
MCS parents	2,266

Serology survey:

- Participants who took part in one of three COVID-19 Surveys were invited to provide a finger-prick blood sample
- Two antibody tests conducted - N-assay and S-assay
  - N-assay more likely to identify naturally occurring antibodies through exposure to virus
  - S-assay more likely to identify antibodies occurring following vaccination

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Harmonised physical health datasets

(within and across the British cohorts)

Available via the UKDS
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Data set / information	NCDS	BCS70	Next Steps	MCS
Body Mass Index (BMI) ▪ Weight ▪ Height	0,7,11,16,23,33,42,50 7,11,16,23,33,42,50	10,16,26,34,42 5,10,16,30,34,42		9 months, 3, 5, 7, 11 9 months, 3, 5, 7, 11
Physical health conditions ▪ Asthma ▪ Diabetes	7,11,16,23,33.42,55,62 7,16,33,42,50,55,62	5,10,16,26,30,34,42,46,51 26,30,34,38,42,46,51	COVID sweep COVID sweep	3, 5, 7, 11, 14 ,COVID COVID sweep
Fertility histories Numerous: number & age biological and non-biological children etc	23,33,42,46,50	26,30,34,38,42,46,51	25, 32	

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Linked health administrative data

Available via
SAIL Databank
UKDS SecureLab
UK Longitudinal Linkage Collaboration (UKLLC)

Country	Cohort	Dataset / information
England	NCDS, BCS70, Next Steps, MCS	▪ **Hospital Episodes Statistics (HES)** ▪ Admitted Patient Care (APC) ▪ Critical Care (CC) – linked to APC ▪ Accident & Emergency (A&E) ▪ Outpatient Care (OP)
Scotland	NCDS, BCS70, MCS NCDS, BCS70 MCS only	▪ **Scottish Medical Records (SMR)** ▪ Inpatient, Outpatient, Prescribing Information ▪ Maternity Records ▪ Immunisations (SRS), Child Health Review
Wales	MCS	▪ **NHS Patient Episodes** Database up to age 11 ▪ **Health data assets** from SAIL Databank (e.g. emergency department, outpatient, COVID data) up to age 14 and for cohort members' parents
GB	NCDS. BCS70	▪ **Mortality records**: MM/YY and source of death e.g. ONS Death Certificate
UK	MCS	▪ **Hospital of birth**

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Genetic data

Available via the CLS Data Access Committee
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Cohort	Age (year)	Collection	Genotyping	Genetic (imputed TOPMed) Individuals	Genetic variants
NCDS	Age 44-45 (2002/3)	**Whole blood** and saliva samples	Seven different genotyping arrays	6,396	7.5 million
BCS70	Age 46 (2016/18)	**Whole blood** and saliva samples	Infinium Global Screening Array-24 v3.0	5,598	8.6 million
Next Steps	Age 32 (2022/23)	Saliva samples	Infinium Global Screening Array-24 v3.0	1,568	8.1 million
MCS	Age 14 (2015/16)	Saliva samples	Infinium Global Screening Array-24 v1.0	20,247 CMs & parents 7,836 CMs 3,117 triads (CM, mother & father)	8.7 million

More information:
cls.ucl.ac.uk/genetic
cls-genetics.github.io

- All data are provided in plink format (genome build: hg38)

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Polygenic Indexes (PGIs)

Available via the UKDS
Special Licence

Generated polygenic indexes (PGI) using TOPMed imputed genetic data for multiple traits, as listed below.

Available in NCDS: 6,396, BCS70: 5,361, Next Steps: 1,272,

MCS: 6,561 participants, 6,637 MCS mothers and 3,907 MCS fathers

Anthropometrics
- Birth weight
- Body fat distribution
- Body Mass Index (childhood)
- Body Mass Index (adulthood)
- Grip strength
- Height
- Waist circumference

Brain structure and cognition
- Alzheimer's disease
- Cognition
- Hippocampal volume
- Parkinson's disease

Health behaviours
- Substance abuse
- Age at initiation of smoking
- Alcoholic drinks per week
- Cigarettes per day
- Diet

Mental health
- Anxiety
- ADHD
- Autism spectrum disorder
- Bipolar disorder
- Depressive symptoms
- Externalising problems
- Major depressive disorder
- Schizophrenia

Physical health
- Age at menopause
- Asthma
- Blood pressure
- Coronary artery disease
- C-reactive protein
- Fasting glucose
- HbA1c
- Hypertension
- Rheumatoid arthritis
- Type 1 Diabetes
- Type 2 Diabetes

Personality
- Agreeableness
- Conscientiousness
- Extraversion
- Openness to experience
- Neuroticism

Social outcomes
- Education
- Household Income
- Human Longevity
- Parental Lifespan

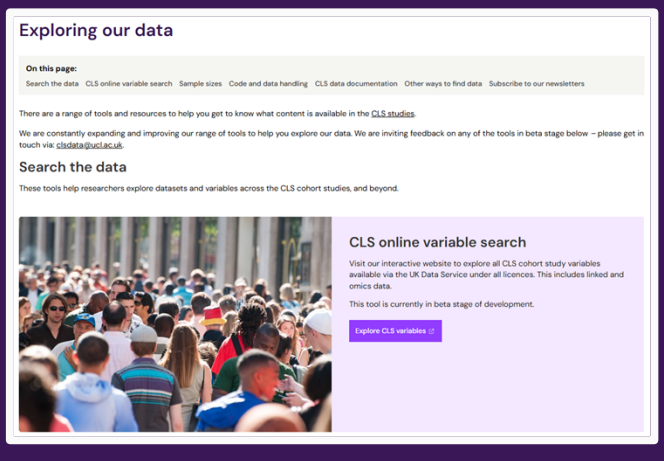
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Search the data

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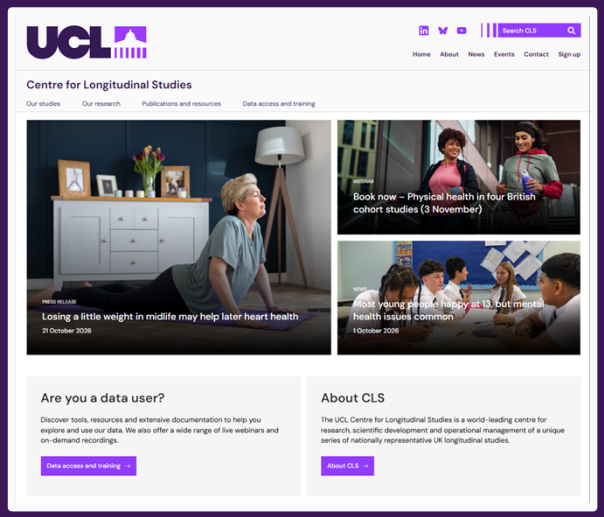
- CLS online variable search platform
- Excel longitudinal data dictionaries
- and more



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Resources and data access

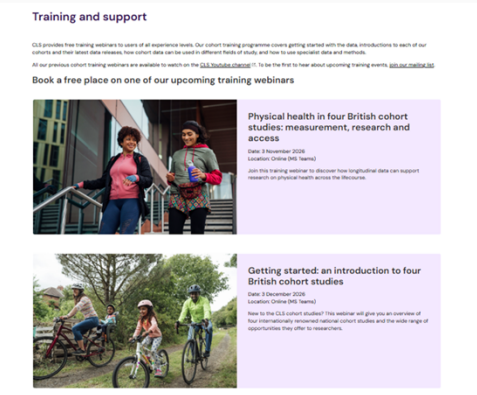


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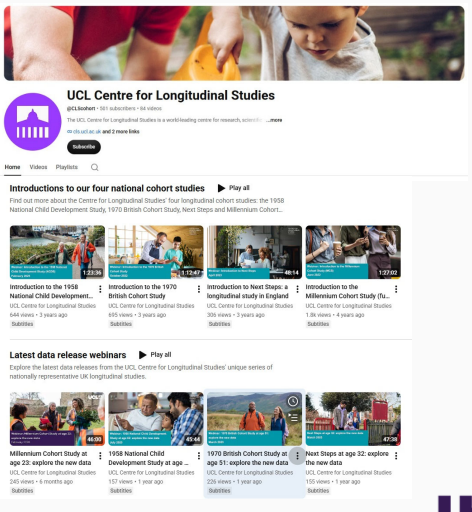
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CLS training and support



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YouTube



@CLScohort

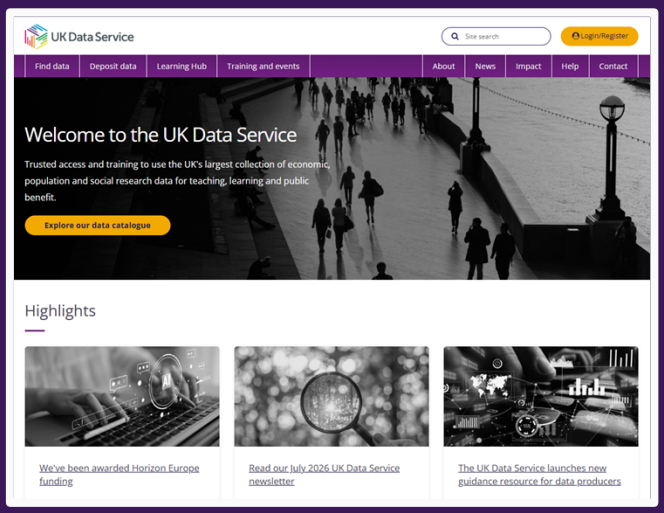
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Download the data

ukdataservice.ac.uk

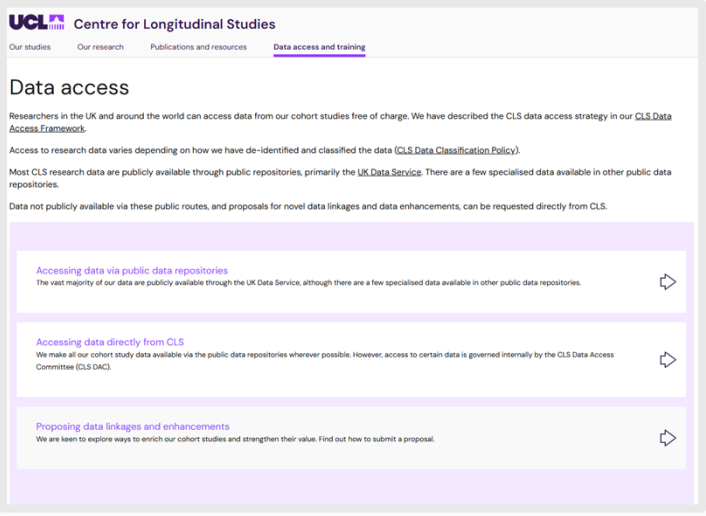
Freely available to researchers, government analysts, and third sector workers



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Accessing other physical health data



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Why use cohort data?

Highlighting the unique strengths of using longitudinal cohort data for health research



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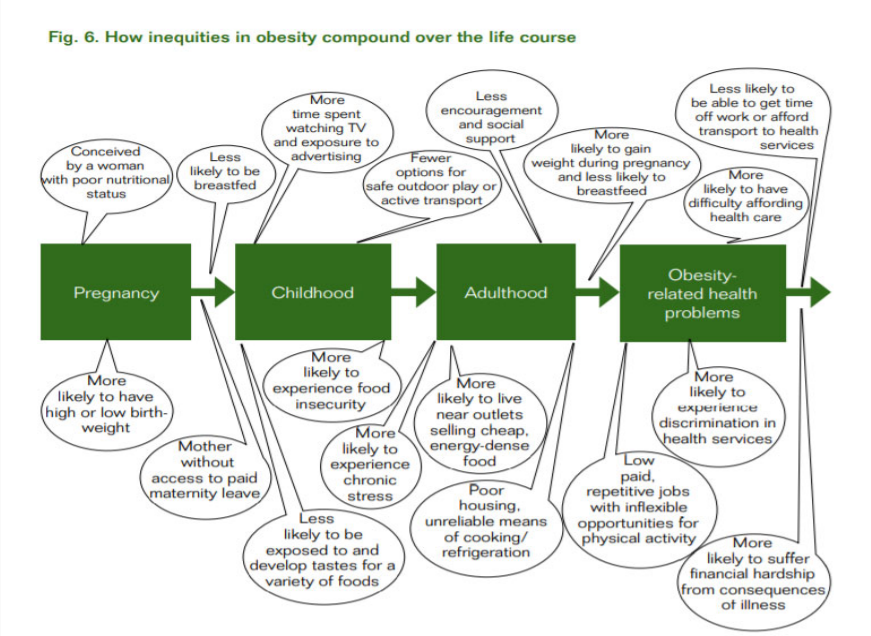
Why use the British Birth Cohorts for health research?

- Rich data collected across the life course allows a full and **detailed picture of how health develops, is maintained and deteriorates.**
- **Establish the order in which events occur**, allowing us to build a picture of causality.
- Can understand **transitions and changes** over the life course.
- Connect **early life circumstances** with later life outcomes.



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Belinda Loring & Aileen Robertson, WHO (2014)

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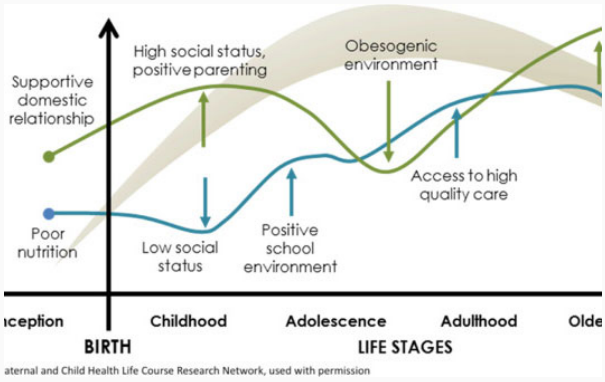
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The factors that shape our health change over our lifetimes and across generations

Health is shaped over the life course:

- "good" or "bad" health does not occur at a single time point independently – health develops over our life.
- Similarly, health is not just determined by things that occur to us in a single instance – our **health is reflective of things that happen to us, and that we do, across our lives**.

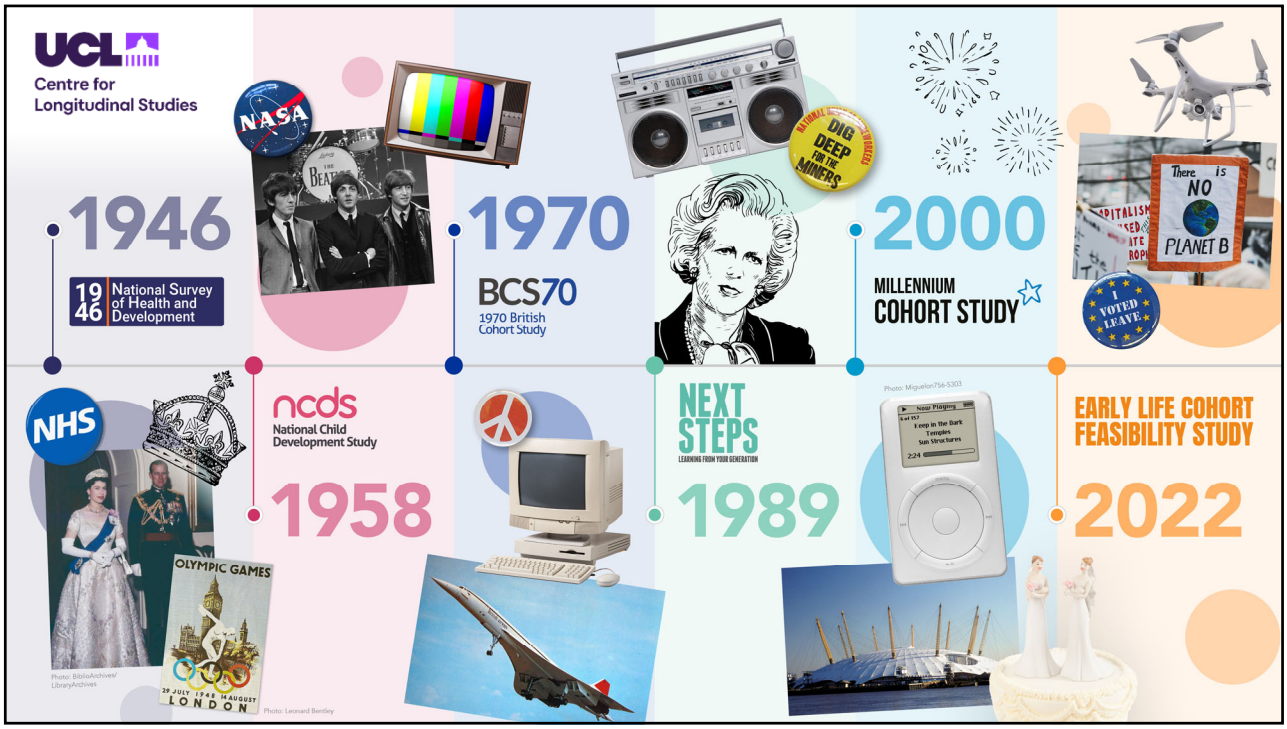
Many of the conditions which shape our health, particularly social, economic and environmental conditions, have changed across generations…



aternal and Child Health Life Course Research Network, used with permission

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Disentangling age, period and cohort effects

Age Effect: Are health outcomes related to a specific life stage? → People in older age may be more likely to experience loneliness.

Cohort Effect: Is health different between generations, because when they were born has shaped how their lives unfolded? → Are younger generations more likely to experience loneliness than older generations at the same age?

Period Effect: Are there external factors that shape everyone's health, regardless of age and generation? → Did everyone experience a spike in loneliness because of COVID-19 lock down restrictions?

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What cohorts reveal that other data can't

Cohorts let us study change, timing and context together - not just health at a single point in time.

THREE ANALYTICAL ADVANTAGES

01

Maps health over the life course

Trace health from early life into adulthood, rather than relying on one-off prevalence snapshots.

02

Observe generational shifts

Compare cohorts to see how health change as social, policy and environmental conditions change.

03

Link with lifecourse determinants

Link early-life, social and health factors to health across generations.

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Physical health research examples

Showcase different types of health research using the CLS cohorts



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In utero, pregnancy and early life

Growth in utero, blood pressure in childhood and adult life, and mortality from cardiovascular disease.

British Medical Journal 1989 ; 298 doi: https://doi.org/10.1136/bmj.298.6673.564 (Published 04 March 1989)
Cite this as: *British Medical Journal* 1989;298:564

Article | Related content | Metrics | Responses | Peer review

D. J. Barker, C. Osmond, J. Golding, D. Kuh, M. E. Wadsworth

THE LANCET
Volume 319, Issue 8283, 29 May 1982, Pages 1227-1229

Hospital Practice

BREAST-FEEDING, BRONCHITIS, AND ADMISSIONS FOR LOWER-RESPIRATORY ILLNESS AND GASTROENTERITIS DURING THE FIRST FIVE YEARS

Brent Taylor, Jean Golding, Jane Wadsworth, Neville Butler

Perinatal problems. The Second Report of the 1958, British Perinatal Mortality Survey under the auspices of the National Birthday Trust Fund.

Author(s) : Butler, N. R. ; Alberman, E. D.
Editors : Butler, N. R.; Alberman, E. D.
Book : Perinatal problems. The Second Report of the 1958, British Perinatal Mortality Survey under the auspices of the National Birthday Trust Fund. 1969 pp.xx + 395 pp.

The Effect of Hypertensive Disorders of Pregnancy on the Risk of ADHD in the Offspring

Stefanie Böhm[1], Eileen A. Curran[2], Louise C. Kenny[2], Gerard W. O'Keeffe[2], Deirdre Murray[2], and Ali S. Khashan[2]

ARTICLES | APRIL 01 2007

Breastfeeding and Hospitalization for Diarrheal and Respiratory Infection in the United Kingdom Millennium Cohort Study

Maria A. Quigley, MSc; Yvonne J. Kelly, PhD; Amanda Sacker, PhD

Address correspondence to Maria A. Quigley, MSc, National Perinatal Epidemiology Unit, Oxford University, Old Road Campus, Headington, Oxford OX3 7LF, United Kingdom. E-mail: maria.quigley@npeu.ox.ac.uk

Pediatrics (2007) 119 (4): e837–e842.
https://doi.org/10.1542/peds.2006-2256 **Article history**

thebmj covid-19 Research Education News & Views Campaigns Jobs

Research Article

Complications of pregnancy and delivery in relation to psychosis in adult life: data from the British perinatal mortality survey sample.

British Medical Journal 1991 ; 302 doi: https://doi.org/10.1136/bmj.302.6792.1576 (Published 29 June 1991)
Cite this as: *British Medical Journal* 1991;302:1576

Article | Related content | Metrics | Responses | Peer review

D J Done, E C Johnstone, C D Frith, J Golding, P M Shepherd, T J Crow

Paediatric and Perinatal Epidemiology

Free Access

Prenatal and perinatal antecedents of febrile convulsions and afebrile seizures: data from a national cohort study

Rosemary Greenwood, Jean Golding, Euan Ross, Chris Verity

First published: 04 January 2002 | https://doi.org/10.1046/j.1365-3016.1998.0120s1076.x | Citations: 28

Go here for SFX

Professor Jean Golding Unit of Paediatric and Perinatal Epidemiology, Division of Child Health, 24 Tyndall Avenue, Bristol BS8 1TQ, UK.

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Fetal shocks from infections and pandemics

"The Scourge of Asian Flu: in utero exposure to pandemic influenza"

2009, E. Kelly

ncds National Child Development Study

Figure 2: The Spatial Timing and Incidence of the Epidemic

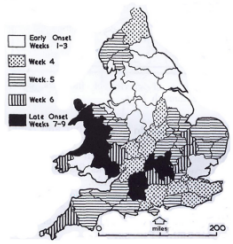
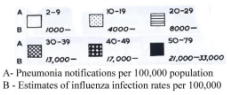


Figure A: Spatial Timing of the Epidemic



Figure B: Total Incidence of the Epidemic



A- Pneumonia notifications per 100,000 population
B - Estimates of influenza infection rates per 100,000

Notes: Figure A reproduces Figure 7, Onset by Areas, Hunter & Young (1971) p.645. Weeks as described by Figure 1. Figure B reproduces Fig 4, Total Incidence in the 12 Week Epidemic Period, Hunter & Young (1971) p.642



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COVID-19 pandemic

Original research

Changes in the behavioural determinants of health during the COVID-19 pandemic: gender, socioeconomic and ethnic inequalities in five British cohort studies

Research article | Open Access | Published: 06 April 2022

The UK Coronavirus Job Retention Scheme and diet, physical activity, and sleep during the COVID-19 pandemic: evidence from eight longitudinal population surveys

nature communications

Long COVID burden and risk factors in 10 UK longitudinal studies and electronic health records

BMC Medicine

The UK Coronavirus Job Retention Scheme and smoking, alcohol consumption and vaping during the COVID-19 pandemic: evidence from eight longitudinal population surveys

Research Square

BMI across adulthood, COVID-19 and long COVID in two British birth cohorts

Mental health in relation to changes in sleep, exercise, alcohol and diet during the COVID-19 pandemic: examination of four UK cohort studies

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More recent pandemic effects: Covid-19

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ARTICLE

https://doi.org/10.1038/s41467-022-30836-0 OPEN

Long COVID burden and risk factors in 10 UK longitudinal studies and electronic health records

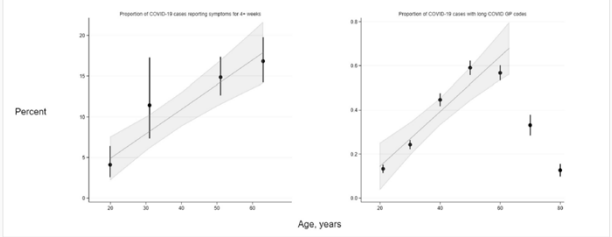
Ellen J. Thompson[1,19], Dylan M. Williams[2,3,19], Alex J. Walker[4,19], Ruth E. Mitchell[5,6], Claire L. Niedzwiedz[7], Tiffany C. Yang[8], Charlotte F. Huggins[9], Alex S. F. Kwong[5,10], Richard J. Silverwood[11], Giorgio Di Gessa[12], Ruth C. E. Bowyer[1], Kate Northstone[6], Bo Hou[8], Michael J. Green[13], Brian Dodgeon[11], Katie J. Doores[14], Emma L. Duncan[1], Frances M. K. Williams[1], OpenSAFELY Collaborative*, Andrew Steptoe[12], David J. Porteous[9], Rosemary R. C. McEachan[8], Laurie Tomlinson[15], Ben Goldacre[4], Praveetha Patalay[2,11], George B. Ploubidis[11], Srinivasa Vittal Katikireddi[13], Kate Tilling[5], Christopher T. Rentsch[15,16], Nicholas J. Timpson[5,6], Nishi Chaturvedi[2] & Claire J. Steves[1,17]

Age of First Overweight and Obesity, COVID-19 and Long COVID in Two British Birth Cohorts

Charis Bridger Staatz[1] · David Bann[1] · George B. Ploubidis[1] · Alissa Goodman[1] · Richard J. Silverwood[1]

Received: 14 December 2022 / Accepted: 9 February 2023 / Published online: 22 February 2023

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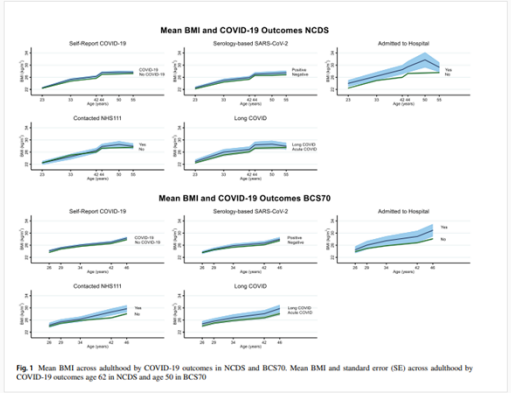


Fig. 1 Mean BMI across adulthood by COVID-19 outcomes in NCDS and BCS70. Mean BMI and standard error (SE) across adulthood by COVID-19 outcomes age 62 in NCDS and age 50 in BCS70

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Biomarkers and genetics

September 30, 2020

Association of Early-Life Mental Health With Biomarkers in Midlife and Premature Mortality
Evidence From the 1958 British Birth Cohort

George B. Ploubidis, PhD[1]; G. David Batty, PhD, DSc[1,2]; Praveetha Patalay, PhD[3,4]; et al

> Author Affiliations | Article Information

JAMA Psychiatry. 2021;78(1):38-46. doi:10.1001/jamapsychiatry.2020.2893

Home > European Journal of Epidemiology > Article

MORTALITY | Open Access | Published: 23 February 2018

Allostatic load and subsequent all-cause mortality: which biological markers drive the relationship? Findings from a UK birth cohort

Raphaëlle Castagné, Valérie Garès, Maryam Karimi, Marc Chadeau-Hyam, Paolo Vineis, Cyrille Delpierre & Michelle Kelly-Irving for the Lifepath Consortium

European Journal of Epidemiology 33, 441–458 (2018) | Cite this article

nature genetics

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Published: 06 February 2017

Genetic loci associated with chronic obstructive pulmonary disease overlap with loci for lung function and pulmonary fibrosis

Brian D Hobbs, Kim de Jong, Maxime Lamontagne, Yohan Bossé, Nick Shrine, Maria Soler Artigas, Louise V Wain, Ian P Hall, Victoria E Jackson, Annah B Wyss, Stephanie J London, Kari E North, Nora Franceschini, David P Strachan, Terri H Beaty, John E Hokanson, James D Crapo, Peter J Castaldi, Robert P Chase, Traci M Bartz, Susan R Heckbert, Bruce M Psaty, Sina A Gharib, Pieter Zanen, COPDGene Investigators, ECLIPSE Investigators, LifeLines Investigators, SPIROMICS Research Group, International COPD Genetics Network Investigators, UK BiLEVE Investigators & International COPD Genetics Consortium + Show authors

Nature Genetics 49, 426–432 (2017) | Cite this article

8796 Accesses | 223 Citations | 214 Altmetric | Metrics

ELSEVIER

Brain, Behavior, and Immunity
Volume 90, November 2020, Pages 303-310

Patterning of educational attainment across inflammatory markers: Findings from a multi-cohort study

Marine Maurel [a 1], Raphaëlle Castagné [a 1], Eloïse Berger [a], Murielle Bochud [b], Marc Chadeau-Hyam [c], Silvia Fraga [d], Martina Gandini [a 4], Nina Hutri-Kähönen [f], Sirpa Jalkanen [h i], Mika Kivimäki [j k], Michael Marmot [l], Cathal McCrory [m], Martin Preisig [b], Olli Raitakari [n o p], Fulvio Ricceri [a q], Marko Salmi [h i], Andrew Steptoe [l], Paolo Vineis [a r], Cyrille Delpierre [a 2], Michelle Kelly-Irving [a 2]

American Journal of EPIDEMIOLOGY

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JOURNAL ARTICLE

PUBLIC CARE DURING CHILDHOOD AND BIOMEDICAL RISK FACTORS IN MIDDLE AGE: THE 1970 BRITISH COHORT STUDY

G David Batty, Mark Hamer

American Journal of Epidemiology, Volume 190, Issue 1, January 2021, Pages 176–178, https://doi.org/10.1093/aje/kwaa079

Volume 190, Issue 1
January 2021

Published: 01 June 2020 **Article history**

DEMOGRAPHY

RESEARCH ARTICLE | MARCH 25 2020

Fertility History and Biomarkers Using Prospective Data: Evidence From the 1958 National Child Development Study

Maria Sironi; George B. Ploubidis; Emily M. Grundy

Demography (2020) 57 (2): 529–558.

https://doi.org/10.1007/s13524-020-00855-x

nature genetics

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Published: 10 May 2009

Genome-wide association study and meta-analysis find that over 40 loci affect risk of type 1 diabetes

Jeffrey C Barrett, David G Clayton, Patrick Concannon, Beena Akolkar, Jason D Cooper, Henry A Erlich, Cécile Julier, Grant Morahan, Jørn Nerup, Concepcion Nierras, Vincent Plagnol, Flemming Pociot, Helen Schuilenburg, Deborah J Smyth, Helen Stevens, John A Todd, Neil M Walker, Stephen S Rich & The Type 1 Diabetes Genetics Consortium

Nature Genetics 41, 703–707 (2009) | Cite this article

10k Accesses | 1237 Citations | 15 Altmetric | Metrics

November 21, 2019

Comparison of Genetic Liability for Sleep Traits Among Individuals With Bipolar Disorder I or II and Control Participants

Katie J. S. Lewis, PhD[1], Alexander Richards, PhD[1], Robert Karlsson, PhD[1], et al

> Author Affiliations | Article Information

JAMA Psychiatry. 2020;77(3):303-310. doi:10.1001/jamapsychiatry.2019.4079

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Mid-life biomarkers

Contents lists available at ScienceDirect

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journal homepage: www.elsevier.com/locate/ssmph

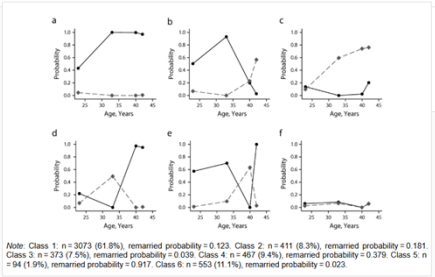
Childhood adversity and cardiometabolic biomarkers in mid-adulthood in the 1958 British birth cohort

Natalie Ella Miller *, Rebecca E. Lacey

RESEARCH AND PRACTICE

Life-Course Partnership Status and Biomarkers in Midlife: Evidence From the 1958 British Birth Cohort

George B. Ploubidis, PhD, Richard J. Silverwood, PhD, Bianca DeStavola, PhD, and Emily Grundy, PhD



Note: Class 1: n = 3073 (61.8%), remarried probability = 0.123. Class 2: n = 411 (8.3%), remarried probability = 0.181. Class 3: n = 373 (7.5%), remarried probability = 0.039. Class 4: n = 467 (9.4%), remarried probability = 0.379. Class 5: n = 94 (1.9%), remarried probability = 0.917. Class 6: n = 553 (11.1%), remarried probability = 0.023.

International Journal of Epidemiology, 2024, Vol. 53, No. 5



Original article

The midline health of only children: chronic disease indicators and biomarkers by sibship size in three nationally representative UK cohorts

Jenny Chanfreau [1,2,*], Katherine Keenan [3], Kieron Barclay [4] and Alice Goisis [2]

[1]University of Sussex, Brighton, UK, [2]University College London, London, UK, [3]University of St Andrews, St Andrews, UK and [4]Stockholm University, Stockholm, Sweden

*Corresponding author. University of Sussex, Sussex House, Falmer, Brighton BN1 9RH, UK. E-mail: jenny.chanfreau@sussex.ac.uk

ncds National Child Development Study

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Mid-life biomarkers

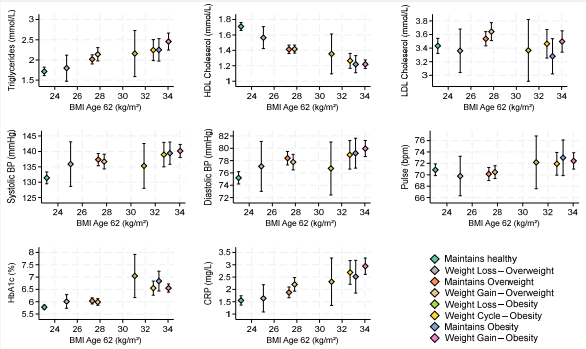
Centre for Longitudinal Studies

Associations between adult obesity and mid-life weight change patterns with cardiometabolic health in early old age: Evidence from the 1958 British birth cohort

Charis Bridger Staatz, Laura Gimeno, Naveed Sattar, Nish Chaturvedi, George Ploubidis

doi: https://doi.org/10.64898/2026.08.26.26361387

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.



OPEN ACCESS PEER-REVIEWED

RESEARCH ARTICLE

Duration of obesity exposure between ages 10 and 40 years and its relationship with cardiometabolic disease risk factors: A cohort study

Tom Norris, Tim J. Cole, David Bann, Mark Hamer, Rebecca Hardy, Leah Li, Ken K. Ong, George B. Ploubidis, Russell Viner, William Johnson

Published: December 8, 2020 • https://doi.org/10.1371/journal.pmed.1003387

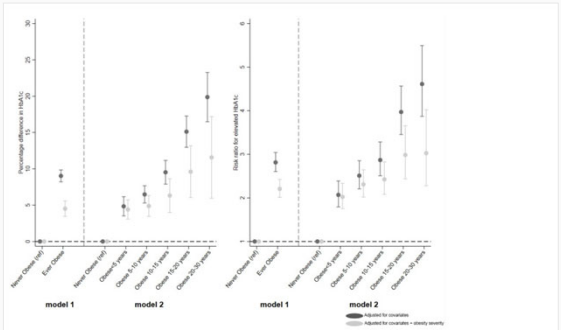


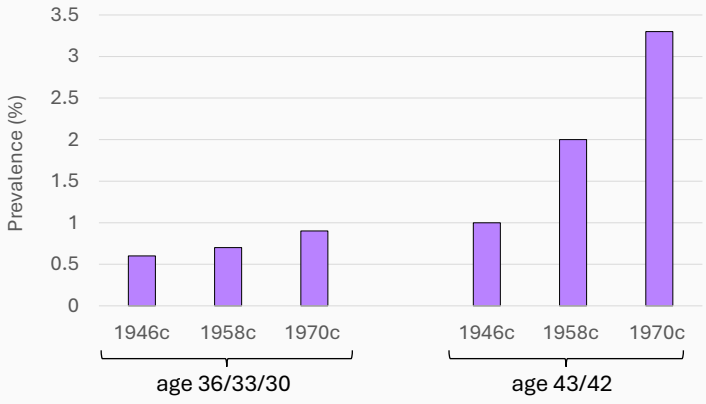
Fig 2. Association between ever obese and categories of obesity duration (versus never obese) and HbA1c (left panel) and risk for elevated HbA1c (right panel).

https://doi.org/10.1371/journal.pmed.1003387.g002

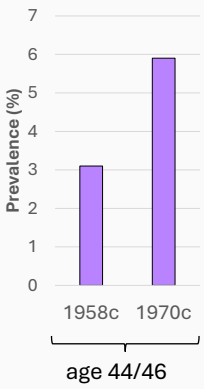
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Trends in diabetes across cohorts

Self-reported diabetes



Measured diabetes (HbA1c)



1946 National Survey of Health and Development

ncds National Child Development Study

BCS70 1970 British Cohort Study

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Mid-life multimorbidity


THE TIMES

News

Third of those in late forties plagued by chronic ill health

Kat Lay Health Editor

More than a third of people in their late forties have multiple long-term health problems, according to a study that suggests this is a worsening trend.

Researchers from University College London found that illnesses such as recurrent back problems, high blood pressure, diabetes, asthma, mental ill health and high-risk alcohol consumption were widespread.

The study, published in the journal *BMC Public Health*, is based on 7951 adults taking part in the 1970 British

Midlife crisis

8,000 British adults, aged 46-48 in 2016-18

Multiple chronic health problems 34%

High-risk drinking 26%

Recurrent back issues 21%

Mental health problems 19%

High blood pressure 16%

Asthma or bronchitis

people who had health problems in childhood such as being overweight or obese, or had reported poor mental health as teenagers, were more likely to go on to have poor health in middle age.

Professor George Ploubidis, another researcher on the study, said: "If these links reflect causal effects, policy and practice targeting these core areas in childhood and adolescence may improve the health of future generations and alleviate potential pressures on the NHS."

As part of the study, nurses took participants' blood pressure and checked


Daily Mail

Midlife health crisis hits 1 in 3

By Xantha Leatham
Health and Science Reporter

Alarming number of us suffer from two or more illnesses such as diabetes and high blood pressure

MORE than a third of middle-aged Britons have multiple health problems and the trend is getting worse, research suggests.

The extent to which they suffer from long-term conditions has been laid bare by a study into the nation's health.

Figures show that 34 per cent of those aged 48 to 48 have two or more long-term conditions, of which at least one relates


THE Sun

THIRD OF MIDDLE-AGED HAVE HEALTH TROUBLE

By SAM BLANCHARD

A THIRD of adults have two or more health problems by middle-age and the trend is worsening, say experts.

They are dogged by difficulties such as a bad back, asthma, high blood pressure, diabetes, mental ill-

Mid-life crisis . . . back ache's a problem

health and high-risk drinking by their late-40s.

People from poorer backgrounds were more likely to face health troubles by age 46 to 48, physical checks and questionnaires showed.

More than four in ten of them had two or more problems – compared with a third overall.

Those with mid-life troubles had often experienced physical difficulties, such as obesity, and mental ill-health when they were youngsters, a team from University College London found.

A study from 2007 on 17 million people aged from 45 to 64 revealed that three in ten had two or more health problems.

Dr David Gondek, of UCL, said: "Compared to previous generations, it appears that the health of British adults in mid-life is on the decline." He added:

"Stark health inequalities appear to begin early in childhood."

Researchers analysed data from 7,951 adults taking part in a British Cohort Study from when they were born.

THE number of people with dementia will triple to 115mil-lion by 2050, a US study suggests. Researchers blame an ageing population, smoking and eating sugary and fatty foods.

sam.blanchard@thesun.co.uk

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Health behaviours


Impaired vision and physical activity in childhood and adolescence: findings from the Millennium Cohort Study

Lisanne Andra Horvat-Gitsels [1, 2], Mario Cortina-Borja [1], Ameenat Lola Solebo [1, 2, 3], Jugnoo Sangeeta Rahi [1, 2, 3, 4, 5]

Correspondence to Professor Jugnoo Sangeeta Rahi, UCL Great Ormond Street Institute of Child Health Population Policy and Practice, London WC1N 1EH, UK; j.rahi@ucl.ac.uk

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Papers And Originals

Cigarette Smoking in Pregnancy: Its Influence on Birth Weight and Perinatal Mortality

Br Med J 1972 ; 2 doi: https://doi.org/10.1136/bmj.2.5806.127 (Published 15 April 1972)

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Papers And Originals

Smoking in Pregnancy and Subsequent Child Development

Br Med J 1973 ; 4 doi: https://doi.org/10.1136/bmj.4.5892.573 (Published 08 December 1973)

Cite this as: *Br Med J* 1973;4:573

Article

Research Article

Smoking in pregnancy and development into early adulthood.

British Medical Journal 1988 ; 297 doi: https://doi.org/10.1136/bmj.297.6658.1233 (Published 12 November 1988)

Cite this as: *British Medical Journal* 1988;297:1233

Article | Related content | Metrics | Responses | Peer review

K R Fogelman, G Manor

Sleep Research

RESEARCH ARTICLE | Open Access

Independent associations of sleep timing, duration and quality with adiposity and weight status in a national sample of adolescents: The UK Millennium Cohort Study

ed: 22 July 2021 | https://doi.org/10.1111/jsr.13436 | Citations: 5

BMC Part of Springer Nature

BMC Medicine

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Research article | Open Access | Published: 06 March 2015

Life course trajectories of alcohol consumption in the United Kingdom using longitudinal data from nine cohort studies

Annie Britton, Yoav Ben-Shlomo, Michaela Benzeval, Diana Kuh & Steven Bell

Article

June 7, 2010

Childhood Hardship, Maternal Smoking, and Birth Outcomes

A Prospective Cohort Study

Epidemiology
Research

How active are our children? Findings from the Millennium Cohort Study

Lucy J Griffiths [1], Mario Cortina-Borja [1], Francesco Sera [1], Theodora Pouliou [1], Marco Geraci [1], Carly Rich [1], Tim J Cole [1], Catherine Law [1], Heather Joshi [2], Andrew R Ness [3], Susan A Jebb [4], Carol Dezateux [1]

Correspondence to Dr Lucy Griffiths; lucy.griffiths@ucl.ac.uk

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Investigating Health Behaviours

Open Access Research

BMJ Open Childhood academic ability in relation to cigarette, alcohol and cannabis use from adolescence into early adulthood: Longitudinal Study of Young People in England (LSYPE)

James Williams,[1] Gareth Hagger-Johnson[2]

SSM - Population Health 16 (2021) 100941

Contents lists available at ScienceDirect

SSM - Population Health

journal homepage: www.elsevier.com/locate/ssmph

...s the distribution of smoking across young adult transition milestones ...anged over the past 20 years? Evidence from the 1970 British Cohort Study (1996) and Next Steps (2015–16)

T. Gagné[a,b,*], I. Schoon[c], A. Sacker[a,b]

[a] Department of Epidemiology and Public Health, University College London, UK
[b] International Centre for Lifecourse Studies in Society and Health, UK
[c] Institute of Education, University College London, UK

ARTICLE INFO

Keywords:
Great Britain
Smoking
Young adults
Transition to adulthood
1970 British cohort
Next Steps cohort

ABSTRACT

Introduction: Transitions into work and family life during young adulthood exacerbate differences in the progression of smoking over the life-course. Few have considered how changes in smoking and the transition to adulthood in the past two decades have influenced these relationships over time.
Methods: We compared the distribution of smoking at ages 25–26 across transition milestones among 3764 men and 4568 women in the 1970 British Cohort study (1996) and 3426 men and 4281 women in the Next Steps study (2015–16). We regressed occasional and daily smoking status on educational attainment, economic activity, living arrangements, relationship status, and parenthood, adjusting for family background, socio-demographics, and smoking history.
Results: There were few differences in associations between the 1996 and 2015-16 samples. Young men and women were less likely to smoke if they had higher education, were homeowners, and cohabited with a partner. Women were less likely to smoke occasionally if they were full-time students, and men were less likely to smoke daily if they were employed full-time and not living with children. However, comparing associations in 2015–16 to 1996: 1) in men, higher education had a weaker negative association and living with a partner had a stronger negative association with daily smoking; 2) in women, independently renting had a weaker positive association with daily smoking.
Conclusions: Despite considerable changes in smoking and the transition to adulthood over the past two decades, the distribution of smoking at ages 25–26 across transition milestones has been relatively stable during this time period in Great Britain.

Key takeaways

- High early academic attainment linked to decreased smoking risk but increased alcohol and cannabis use.
- Distribution of smoking in mid-20s across transition milestones relatively stable over time.

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Body composition, diet and physical activity

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SSM - Population Health

journal homepage: www.elsevier.com/locate/ssmph

Inequalities in body mass index, diet and physical activity in the UK: Longitudinal evidence across childhood and adolescence

Nicolás Libuy[a,*], David Bann[a], Emla Fitzsimons[a,b]

[a] Centre for Longitudinal Studies, University College London Institute of Education, London, UK
[b] Institute for Fiscal Studies, London, UK

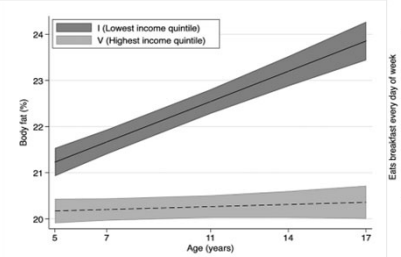


Fig. 2. Body fat (%) across childhood to adolescence by permanent income quintile.

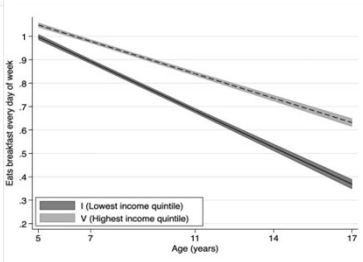


Fig. 3. Eats breakfast every day of week across childhood to adolescence by permanent income quintile.

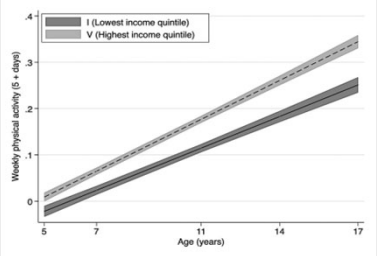


Fig. 4. Weekly physical activity (5 + days) across childhood to adolescence by permanent income quintile.

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Accelerometer data

Centre for Longitudinal Studies

BCS70 1970 British Cohort Study

Article

The Relationship Between Daily Activity Level, Posture Distribution, Stepping Patterns, and Cadence in the BCS70 Cohort

Craig Speirs [1,2], Matthew Ahmadi [3,4], Mark Hamer [5], Emmanuel Stamatakis [3,4] and Malcolm Granat [6,*]

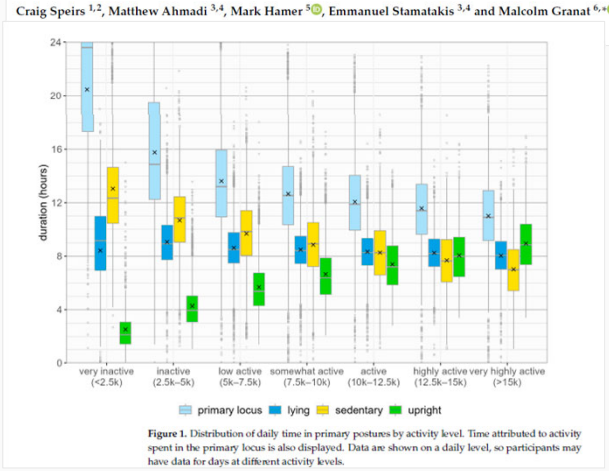


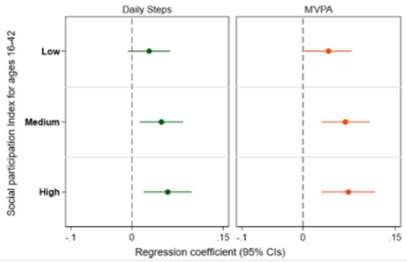
Figure 1. Distribution of daily time in primary postures by activity level. Time attributed to activity spent in the primary locus is also displayed. Data are shown on a daily level, so participants may have data for days at different activity levels.

SOCIAL EPIDEMIOLOGY

Life-course social participation and physical activity in midlife: longitudinal associations in the 1970 British Cohort Study (BCS70)

Stergiani Tsoli[1,4,5] · Daisy Fancourt[2] · Alice Sullivan[1] · Mark Hamer[3] · George B. Ploubidis[1] · Ichiro Kawachi[4]

Fig. 3 Adjusted regression coefficients (95% CI) for the a. Accumulation Model by each physical activity measure. (Reference category: No social participation from ages 16–42. Regression coefficients for mean daily step count represent log regression coefficients



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Obesity research in the British birth cohorts

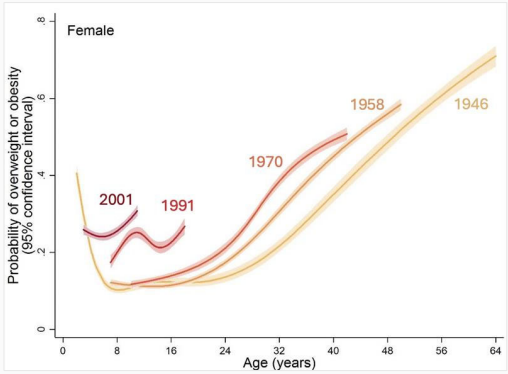
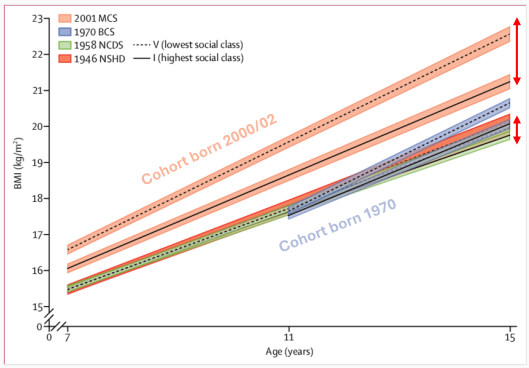


Figure source: Johnson et al. (2015), PLoS Medicine, doi:10.1371/journal.pmed.1001828.



Source: Bann et al. 2018. Lancet Public Health, doi:10.1016/S2468-2667(18)30045-8.

1946 National Survey of Health and Development

ncds National Child Development Study

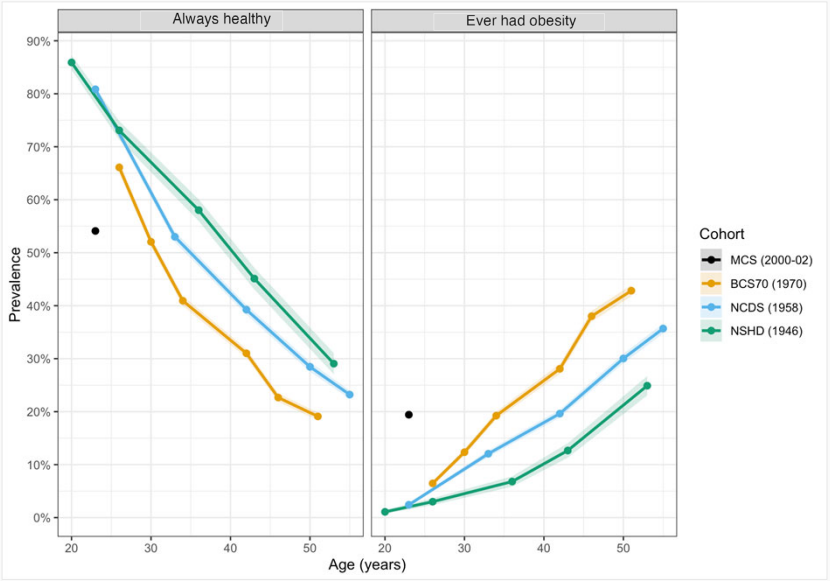
BCS70 1970 British Cohort Study

MILLENNIUM COHORT STUDY

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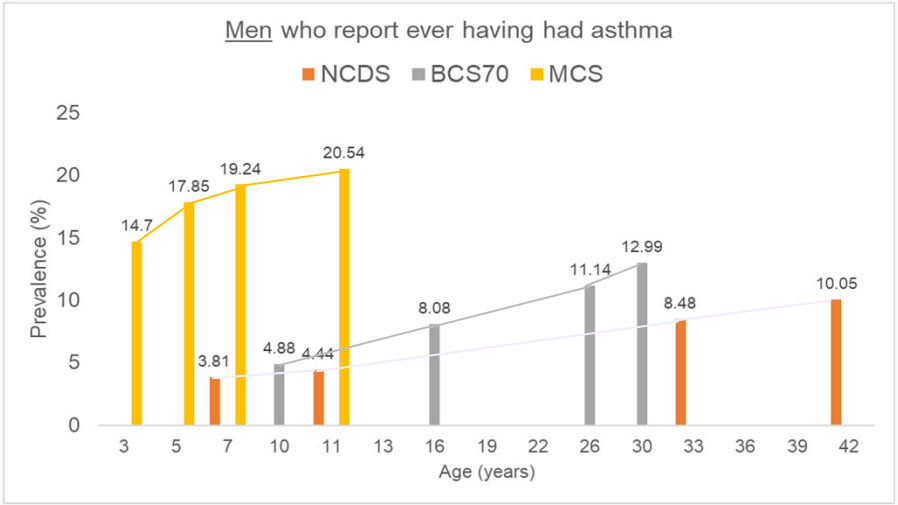
Lifetime healthy weight, overweight, obesity



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Asthma across generations

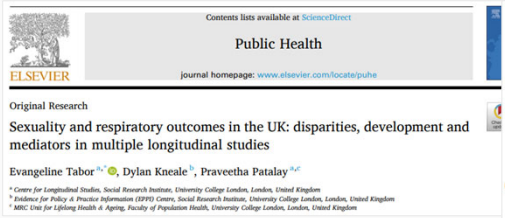


Caveats: So far **unweighted**, and we have **not imputed** the data to address missingness.

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Asthma and Respiratory Health



Contents lists available at ScienceDirect

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journal homepage: www.elsevier.com/locate/puhe

Original Research

Sexuality and respiratory outcomes in the UK: disparities, development and mediators in multiple longitudinal studies

Evangeline Tabor [a,*], Dylan Kneale [b], Praveetha Patalay [a,c]

[a] Centre for Longitudinal Studies, Social Research Institute, University College London, London, United Kingdom
[b] Evidence for Policy & Practice Information (EPPI) Centre, Social Research Institute, University College London, London, United Kingdom
[c] MRC Unit for Lifelong Health & Ageing, Faculty of Population Health, University College London, London, United Kingdom

Key takeaways

- Sexual minority respondents are more likely to report asthma.
- Disparities emerge after childhood and widen across the life course.

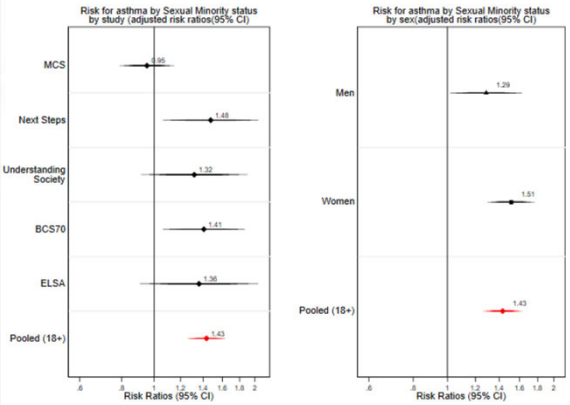


Fig. 1. Association between Sexual Minority status and Asthma report a) by study and b) by sex, adjusted risk ratios.

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Health and Work in BCS70

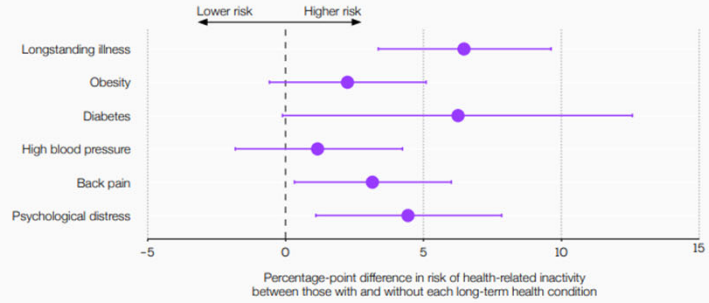


Chronic health conditions and health-related economic inactivity in midlife: Evidence from the 1958 and 1970 British birth cohorts

Laura Gimeno [a,*], Charis Bridger Staatz [a], Alice Goisis [a], Jennifer B. Dowd [b], George B. Ploubidis [a]

[a] Centre for Longitudinal Studies, Social Research Institute, University College London, 55-59 Gordon Square, London, WC1H 0NU, UK
[b] Leverhulme Centre for Demographic Science, Nuffield Department of Population Health, University of Oxford, 42-43 Park End Street, Oxford, OX1 1JD, UK

FIGURE 3: RISK OF NOT WORKING BECAUSE OF HEALTH PROBLEMS AT 51 FOR THOSE WITH POOR HEALTH AT AGE 42



Models accounted for sex and father's social class when cohort members were born, cognitive ability at age 10, and region of residence, educational attainment, household income, type of occupation, and marital/partnership status and whether any children were in the household at age 42, and the age at which the outcome (economic inactivity) was measured.

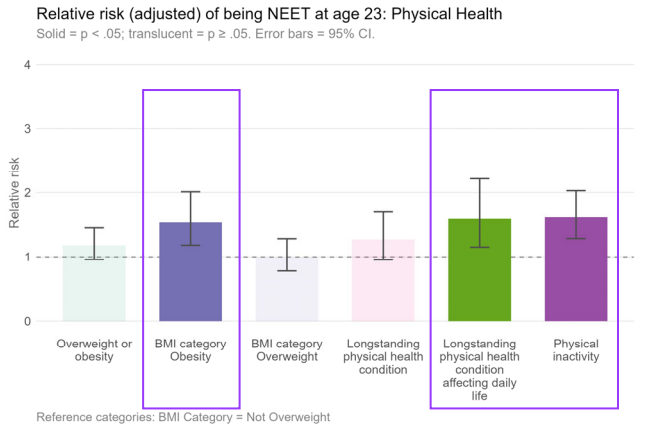
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Health and NEET status in the younger cohorts

NEET: Not in Education, Employment or Training.

- Obesity, physical inactivity, and LSI affecting daily life at age 17 increases the risk of being NEET at age 23.



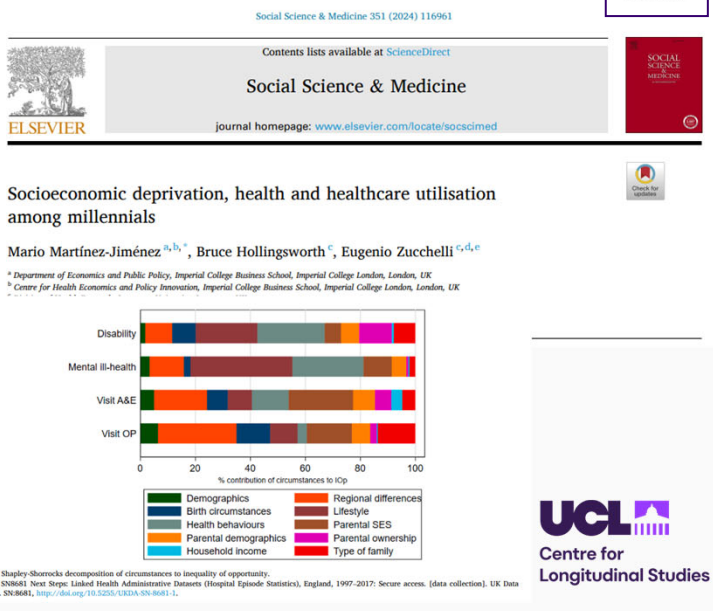
Kelly, Wels & Patalay (2026) *MedRxiv*
DOI: 10.64898/2026.08.13.26360381v1

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Linked electronic health records


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Austerity and waiting times: Evidence on reproductive health care delays among young millennials in deprived areas
Mario Martínez-Jiménez, Bruce Hollingsworth, Eugenio Zucchelli


Social Science & Medicine 351 (2024) 116961
Contents lists available at ScienceDirect
Social Science & Medicine
journal homepage: www.elsevier.com/locate/socscimed
Socioeconomic deprivation, health and healthcare utilisation among millennials
Mario Martínez-Jiménez [a,b,*], Bruce Hollingsworth [c], Eugenio Zucchelli [c,d,e]
[a] Department of Economics and Public Policy, Imperial College Business School, Imperial College London, London, UK
[b] Centre for Health Economics and Policy Innovation, Imperial College Business School, Imperial College London, London, UK
Disability
Mental ill-health
Visit A&E
Visit OP
0
20
40
60
80
100
% contribution of circumstances to IOp
Demographics
Birth circumstances
Health behaviours
Parental demographics
Household income
Regional differences
Lifestyle
Parental SES
Parental ownership
Type of family
Fig. 2. Shapley-Shorrocks decomposition of circumstances to inequality of opportunity.
Source: SN8681 Next Steps: Linked Health Administrative Datasets (Hospital Episode Statistics), England, 1997–2017: Secure access. [data collection]. UK Data Service. SN:8681, http://doi.org/10.5255/UKDA-SN-8681-1.

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Q&A

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Thank you

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