Understanding Society
THE UK HOUSEHOLD LONGITUDINAL STUDY

Understanding Society: the UK Household Longitudinal Study: opportunities for biomedical research

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An initiative by the Economic and Social Research Council, with scientific leadership by the Institute for Social and Economic Research, University of Essex, and survey delivery by NatCen Social Research and Kantar Public

Broad overview

- *Understanding Society: the UK Household Longitudinal Study* (UKHLS) is a multi-purpose household panel survey begun in 2009 (with additional innovation panel (IP))
- Building on the long running British Household Panel Survey (BHPS) established in 1991
- Wave 1 target: 40,000 households, 100,000 people, multiple samples
- Following experiments in the IP, from wave 7 sequential mixed mode fieldwork (web or face-to-face, mop up by phone), so no disruption to fieldwork during pandemic
- Publicly available datasets – over 34,000 downloads (academic 93%), across 38 countries (10%)
- Part of 'family' of international household panels in USA, Australia, Germany, Canada, Switzerland, China, South Africa, South Korean, Japan, Russia…… https://cnef.ehe.osu.edu/

Key features of Understanding Society data

- Probability sample to provide representative data
- All ages (Pre-birth to 100+)
- Large sample size (enables subgroup analyses)
- Annual (continuous) data collection – each wave in field 2 years
- Multiple domains – core and rotating content – repeat measures
- The whole household is interviewed
- Natural refreshment as households change
- Ask consents for data linkage
- Range of geographical identifiers available
- Data (mainly) at UKDS, wide ranging support for users to use data and promote impact

Six data streams for biomedical research

1. Main annual longitudinal panel survey (from November: 29 waves BHPS and 12 waves UKHLS at UKDS)
2. Biomarker data collection at wave 2/3 (and to be repeated at wave 16)
3. Real time COVID-19 Survey conducted 2020 and 2021
4. Data linkage – linked registry and NHS data available at UKLLC
5. Innovation Panel (IP12 – participant led biomarker data collection), IP15 and IP16 in field/planned further experiments
6. Genetics and epigenetics data at EGA and by application

1. Main survey samples

- **General Population Sample:** 30,000 UK households in 2009
- **Ethnic Minority Boost:** 1,000 adult individuals across five main ethnic groups (Indian, Pakistani, Bangladeshi, Caribbean, African)
- **British Household Panel Survey (1991 -):** approximately 8,000 households, consented to continue in UKHLS from wave 2
- **Immigrant and Ethnic Minority Boost** sample (wave 6) in 2015 = top up main ethnic groups and add new immigrants - 4500 households
- Year-on-year response rates:
  - 90-95% GPS and BHPS;
  - 75-85% IEMB and EMB,
  - dropped 1-2% in pandemic, return to F2F now to address
- Currently in field with **general population boost** sample (wave 14)
- UKDS: SN6614
- https://www.understandingsociety.ac.uk/documentation/mainstage

Content overview (non health)

Annual questions

- Basic demographic characteristics
- Changes between waves – household, education, employment, fertility, partnering, residence
- Current job characteristics
- Childcare, other caring
- Income and earnings
- Life satisfaction
- Transport access
- Consumption expenditure
- Housing – tenure, costs, facilities

Initial Conditions

- Childhood
- Migration history
- Employment,partnership,fertility histories

Rotating content

- Environmental behaviour
- Political engagement
- Psychological attributes
- Quality of marital relationships
- Risk and trust
- Family relationships
- Social support
- Wealth
- Food banks & Food insecurity
- Parent & child expectations

Youth Survey (age 10-15 yrs)

- Family life, behaviours
- School, hobbies, friendships
- Attitudes, aspirations, expectations

https://www.understandingsociety.ac.uk/documentation/mainstage/long-term-content-plan
https://www.iser.essex.ac.uk/bhps/documentation/volb/indexes/thesaurus.html

Overview of health survey questions

Population group	Overall health	Disease &illness	Physical, mental and cognitive functioning	Positive wellbeing	Health care use	Health behaviours
Adults 16+	Global health Health satisfaction	Doctor diagnosis of 17 conditions	SF-12 Limiting illness and specific functional limitations GHQ-12 (from w7, 2yrs) Activities of daily living Measures of cognition (w3, w16)	WEMWBS (3yrs) Life satisfaction	(From w7) Use of GP, hospital and outpatients (From W7, 2yrs) Detailed use of health and & social care	(every 2 yrs) Smoking (incl ecigs, quitting) Alcohol use* Diet* Physical activity* (*new scales w7) (3yrs) sleep
Young adults 15-21						Extra annual - smoking, alcohol, illegal drug
Youth 10-15	Global health (2yrs)		(2yrs) Strength and difficulties questionnaire (SDQ) General function qn	(2yrs) Self esteem Life satisfaction		Smoking, ecigs Alcohol consumption Diet Physical activity Illegal drugs (2yrs)
Children <10 (completed by 'responsible adult')	Global health		Age-appropriate SDQ at 3,5&8 Broad development stages			
Pregnancy and birth (completed by mother)	Birthweight and gestation				Type of conception and delivery; complications	Smoking and drinking in pregnancy; Breast feeding; crying, sleeping and eating behaviour

2. Biomarkers

- **Nurse visit follow up to main interview –** wave 2/3 N=20,700
- Range of health questions on the day including medications
- **Physical measures** - height, weight, waist, %body fat, BP, lung fn, grip strength
- **Froze blood** for future analysis: **21 analyts** N=13,500
  - Measures of fat in the blood (cholesterol and triglycerides)
  - An indicator of diabetes (Glycated haemoglobin HbA1c)
  - Measures of inflammation and the immune system– the body's way of responding to harm (High sensitivity c-reactive protein, fibrinogen and CMV seropositivity)
  - Measures of anaemia (Haemoglobin and ferritin)
  - Liver and kidney function
  - Hormones that build up the body – (testosterone, DHEAs, IFG-1)
- To be added this month
  - Proteomics Panel (Olink Cardiometabolic and Neurology panels, 184) N= 6,180
  - Epigenetic clocks
  - Polygenetic risk scores (SP Licence only)
- UKDS: SN 7251
- https://www.understandingsociety.ac.uk/documentation/health-assessment

3. COVID-19 Survey

- **April 2020** all participants in previous main wave invited to web survey
- Consulted on questions:
  - Core questions on COVID-19, employment, finance, furlough, home schooling, mental health
  - Wide-ranging rotating modules (linked to main questionnaire)
- **Web** surveys - April, May, June, July, September, November 2020, January, March, September 2021
- **Telephone** surveys – where no response to the April web survey AND live in a household with no regular web users: May and November 2020
- **March 2021** – COVID-19 antigen test and consent to linkage to NHS data
- UKDS: SN 8644
- https://www.understandingsociety.ac.uk/documentation/covid-19

4. Data Linkage

- Ask consent for wide range of administrative linkages – ongoing discussions with data owners
- Currently have NPD (education), DVLA (car details)
- By end of 2022 linked credit histories (IP) and auto-enrollement pensions, *Welsh and Scottish health data*
- *In 2023 – NEED, twitter (IP), firm linkage*

  https://www.understandingsociety.ac.uk/documentation/linked-data

- In COVID-19 Survey requested consent for health linked data
- Linked data (for COVID-19 research only) is available in UKLLC TRE (with number of other longitudinal studies)

5. The Innovation Panel

- Smaller version of the main *Understanding Society* survey, for methods testing and experimentation
- Content – annual interviews
  - *Understanding Society* core questionnaire
  - Core methods testing
  - Open competition (launched every February)
- Various experiments conducted on wording of health questions
- IP12 –participant-led biomarker data collection (next slide)
- IP13 Wellbeing App
- *IP15 self measured waist, hips, body shape app (selfie)*
- *IP16 'Red book' for child development measures*
- UKDS: SN 6849
- https://www.understandingsociety.ac.uk/documentation/innovation-panel

IP12 random experiments

	Households randomly allocated to (N=330hh, 500 adults per arm):			Comparison
Overall response	Nurse interview	Interviewer	Web survey	No difference 78-80%
Blood	Nurse collected venous and Dried Blood Spot(DBS) samples	Kit left, participant collected DBS	Survey request, participant collected DBS	82% v 44% v 30%; possible to create equivalent risk rates
Feedback or not?				OR feedback v non feedback1.36, most in web, no in nurse
Hair	Nurse collected hair samples	Kit left, participant collected hair	Survey request, participant collected hair	Very low response, selective
Blood pressure	Self collected pre interview Nurse measured	Self collected pre interview interviewer measured	Self collected pre interview	36% v 42% v 38%, Possible to create equivalent estimates
Height and weight	Self reported in interview Nurse measured	Self reported in interview interviewer measured	Self reported in interview	Differences between self report and measured

6. Genetics and epigenetics data

- **Whole genome scan** for 10,000 White European descent (Illumina Human Core Exome BeadChip) >500,000 SNPs, >8,000,000 Imputed SNPs
- **Genome wide methylation** for 3,650 samples long term BHPS and random sample UKHLS (Infinium MethylationEPIC BeadChip) >850,000 methylation sites across the genome

Accessing the data

Data – Main survey, biomarker data, COVID-19 Survey and Innovation Panel are all available at the UK Data Service: http://ukdataservice.ac.uk/

- End User Licence – register use and download
  - Most survey questions, no verbatim answers
  - Aggregated codes eg region, occupation, medications, country of birth, year of birth, income
- Special Licence – application process, download data
  - More detailed medium sized geographic identifiers eg LSOA, LAs, etc
  - Organisations – school codes
  - More detailed classification eg medications, occupation; full income; month of birth
- Secure Lab – UKDS TRE – approved researcher, application, outputs reviewed
  - Detailed geography – latitude and longitude
  - Full DOB
  - Linked administrative survey data eg NPD

Genetics and epigenetics data

- EGA for genetics/epigenetics data alone
- Application to Study team in combination with EUL survey data Applying for genetic and epigenetic data | Understanding Society
- Requirement to provide code for derived variables eg polygenetic scores, added to shared data files

Linked NHS data

- English data available from UKLLC TRE (COVID-19 research only) - approved researcher, application, outputs reviewed Apply | UK Longitudinal Linkage Collaboration (ukllc.ac.uk)

Understanding Society

Pathway to Understanding Society

Start your longitudinal journey…

Key:

- 01 Study Overview
- 02 User Guide
- 03 Variable search
- 04 Questionnaires
- 05 Long-term Content Plan
- 06 Short Intro Videos
- 07 Training Courses
- 08 Moodle Course
- 09 FAQs
- 10 User Support Forum

Research

https://www.understandingsociety.ac.uk/research/publications/type/Journal%20Article

Latest research

Discover which publications have used Understanding Society data by using this search facility. The research can be filtered by subject, publication type, author and year of publication.

Please let us know about your research

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Contains all of these words

Search found 958 items

(-) Journal Article

Displaying publications **1 - 25** of **958** in total

Work schedule control and allostatic load biomarkers: disparities between and within gender

Senhu Wang, Lambert Zixin Li, Zhuofei Lu, Shuanglong Li, David Rehkopf

Journal Article - Social Indicators Research - 15 Oct 2022

Labour Market | Health | Social Attitudes | Sociology Of Households | Biology

The impact of COVID-19 lockdowns on physical activity amongst older adults: evidence from longitudinal data in the UK

Jack Elliott, Luke Munford, Saima Ahmed, Alison Littlewood, Chris Todd

Journal Article - BMC Public Health - 22 Sep 2022

Older People | Public Policy | Health | Covid 19

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

Michael J. Green, Jane Maddock, Giorgio Di Gessa, Bożena Wielgoszewska, Sam Parsons, Gareth J. Griffith, Jazz Croft, Anna J. Stevenson, Charlotte F. Huggins, Charlotte Booth

Journal Article - BMC Medicine - 21 Sep 2022

Drug/Alcohol Abuse | Labour Market | Unemployment | Public Policy | Health | Life Course Analysis | Surveys | Covid 19

Record Type

Journal Article	
Media	1174
Report	502
Conference Paper	226
Research Paper	215
Book Chapter	172
Understanding Society Working Paper Series	125
Parliamentary Paper	70
ISER Working Paper Series	59
Thesis	51
Book	46
Interview	19
CeMPA Working Paper Series	2
EUROMOD Working Paper Series	2
Conference Proceedings	1
Dataset	1
Miscellaneous	1

Subject

Health	524
Well Being	353
Psychology	324
Life Course Analysis	215
Labour Market	187
Demography	172
Biology	149
Covid 19	147

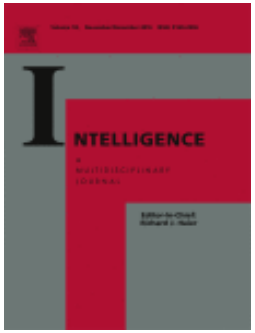
Illustrative studies: biomarkers

Re-employment, job quality, health and allostatic load biomarkers: prospective evidence from the UK Household Longitudinal Study
Tarani **Chandola**, Nan Zhang

Concordance of health states in couples: Analysis of self-reported, nurse administered and blood-based biomarker data in the UK Understanding Society panel
Apostolos Davillas and Stephen Pudney

Testosterone and Tendency to Engage in Self-Employment
Nicos Nicolaou, Pankaj C. Patel, Marcus T. Wolfe

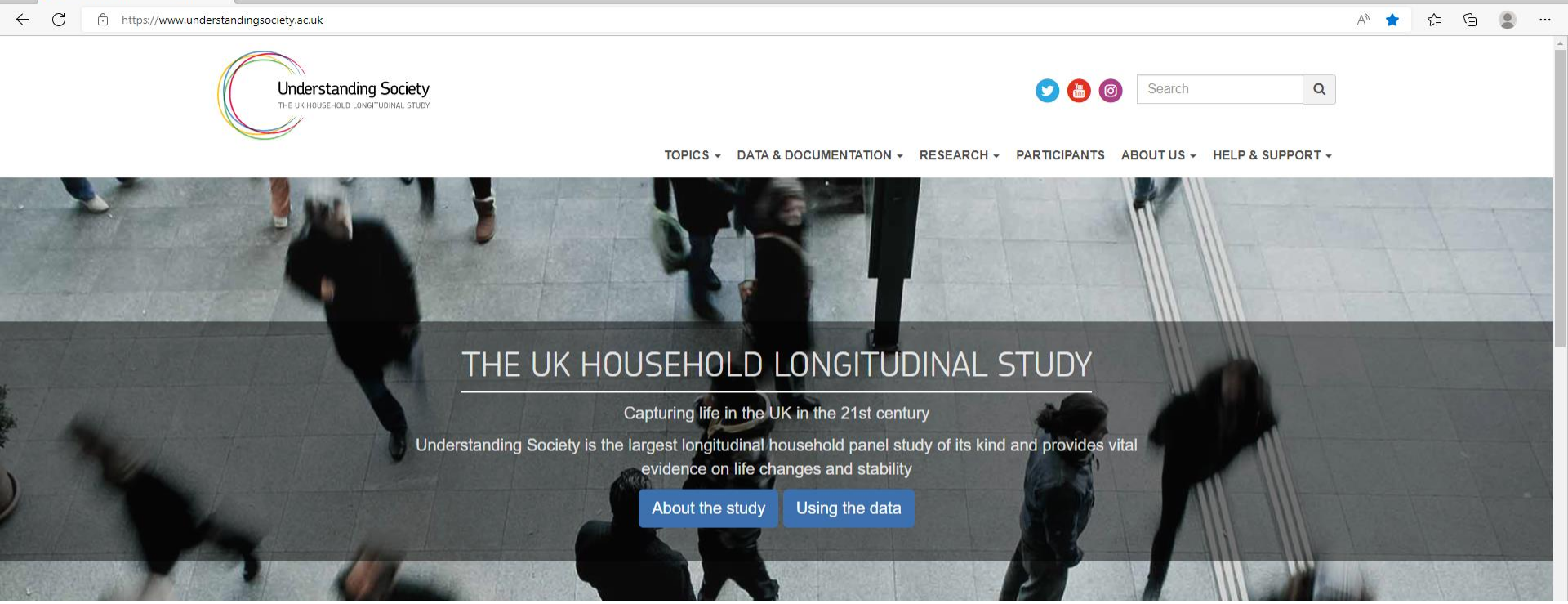
Illustrative studies: genetics



Assortative mating on educational attainment leads to genetic spousal resemblance for polygenic scores
DavidHugh-Jones ,Karin J.H.Verweij,BeateSt. Pourcain, AbdelAbdellaoui[b]

Evidence for large-scale gene-by-smoking interaction effects on pulmonary function
Hugues Aschard et al

Leukemia-Associated Somatic Mutations Drive Distinct Patterns of Age-Related Clonal Hemopoiesis
Thomas McKerrell et al



Data: https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=6614

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