



Understanding Society

THE UK HOUSEHOLD LONGITUDINAL STUDY

The UK Household Longitudinal Study (UKHLS): overview for health researchers

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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 the National Centre for Social Research.



Understanding Society: UKHLS



- Multi-purpose panel survey, begun in 2009
- **Annually-repeated** waves of data collection
- Incorporates the British Household Panel Study (1991-)
- **Representative** UK sample over time
- In contrast to cohort studies, **all ages represented**, everyone aged 10+ in household interviewed
- Design allows comparison with panel studies including PSID (USA), HILDA (Australia), SOEP (Germany)
- **40,000 households, 100,000 people**: allows exploration of rarer events/behaviours, small sub-populations, pseudocohorts
- Plans for linkage to geographic and administrative records (including health)

Initial sample composition



- **General Population Sample:** 30,000 UK households in 2009 (58% household response; 82% adult response = 41,047 interviews)
- **Ethnic Minority Boost:** 1,000 adult individuals across five main ethnic groups (Indian, Pakistani, Bangladeshi, Caribbean, African) (52% household response; 72% adult response = 6,685 interviews)
- **British Household Panel Survey (1991 -):** approximately 8,000 households, 13,454 adults consenting to continue
- An **Innovation Panel:** 1500 households, 2568 adults for methodological research
- **TOTAL: 39,805 households: 101,087 individuals: 63,755 adults, 5,788 youths**
- **New Migrant Boost** = 4500 households

Non-health content

Annual questions

- Basic demographic characteristics
- Changes between waves – education, employment, fertility, partnering, geographic mobility
- Current job characteristics
- Childcare, other caring within and outside household
- Income and earnings
- Life satisfaction
- Transport & communication access
- Consumption expenditure
- Housing
- Household facilities, car ownership

Rotating content

- Environmental attitudes & behaviour
- Psychological attributes
- Well being
- Cognitive ability measures
- Quality of marital relationships
- Risk and trust
- Collection of data about younger children < 10
- Social support
- Wealth

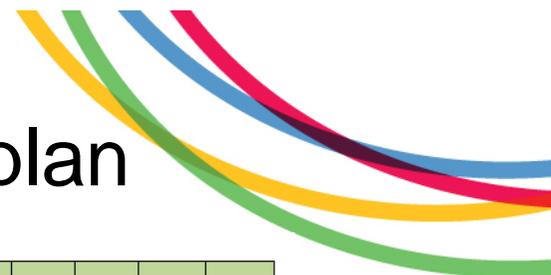


Self-report annual health questions



- Census questions: subjective assessment of health, limiting long term illness
- Functional capability: mobility, lifting, use of hands, balance or coordination, sight, speech, memory, personal care, continence
- Health Conditions: asthma, arthritis, congestive heart failure, angina, myocardial infarction, stroke, emphysema, thyroid problems, chronic bronchitis, liver, cancer, diabetes, epilepsy, high blood pressure, clinical depression
- SF-12: physical and mental health functioning
- GHQ 12: psychological distress

Lots more in the long-term content plan



Adult Questionnaire (cont.)

Theme	Module name	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11
Expectations	Fertility Intentions					x						
Family Relationships	Family networks	x		x		x		x		x		x
Family Relationships	Family Access			x								
Family Relationships	Parents and children	x		x		x		x		x		x
Family Relationships	Partner Relationships (self-completion)	x		x		x		x		x		x
Financial behaviour & attitudes	Charitable giving		x		x		x		x		x	
Financial behaviour & attitudes	Personal Pensions*		x		x		x		x		x	
Financial behaviour & attitudes	Savings		x		x		x		x		x	
Financial behaviour & attitudes	Child Maintenance			x		x		x		x		x
Health Behaviour	Nutrition		x			x		x		x		x
Health Behaviour	Physical activity/Exercise		x			x		x		x		x
Health Behaviour	Smoking		x			x	x	x	x	x	x	x
Health Behaviour	Physical Work		x			x						x
Health Behaviour	Alcohol Consumption (self-completion)		x			x		x		x		x
Health Status	Social Care							X		X		X
Identity	Identity (self-completion)		x			x			x			X
Identity	Britishness			5m			x					
Language	Language (English)	x				5m					5m	
Leisure Participation	Leisure culture and sport		x			x						
Leisure Participation	Leisure access		x									
Leisure Participation	Olympic games/Commonwealth games (Scotland only)				x	x		x				
Local Neighbourhood	Local Neighbourhood (including service use and quality)			x			x			x		
Local Neighbourhood	Neighbourhood Belonging (self completion)	x		x			x			x		
Mental Health & Well-being	Sleep Quality	x			x			x			x	
Mental Health & Well-being	Mental Well-Being (self-completion)	x			x			x			x	

<https://www.understandingsociety.ac.uk/documentation/mainstage/long-term-content-plan>

Nurse interview



- Nurse interview follow up to main interview at wave 2(GPS), wave 3 (BHPS)
- All visits between 2010-2012
- Eligibility: took part in main wave interview, from England/Wales/Scotland, English speaking interview
- Approximately 5 months after main interview
- Included physical measures, blood samples, health-related interview (medications, conditions on day)
- **N=20,699 for the visit**
- **N=13,571 for blood analytes**

Nurse assessment measures



Measure	Applications
Height and weight Waist circumference % body fat (bioelectrical impedance)	Risk factors for range of major chronic conditions and social outcomes
Respiratory function (Spirometry) (FVC, FEV₁, PF, FEV₁/FVC)	Detection of obstructive and restrictive respiratory diseases including COPD
Diastolic and systolic blood pressure, resting pulse rate	Risk factor for cardio-vascular disease, stroke, heart conditions
Grip strength	Indicator muscle strength. Functional limitations and disability in older ages.
Blood samples (non-fasting), 19.8ml	Extraction of blood analytes and DNA. Additional eligibility requirements and consent
Short questionnaire for medications	Factors that may need to be taken into account in analyses of above measures

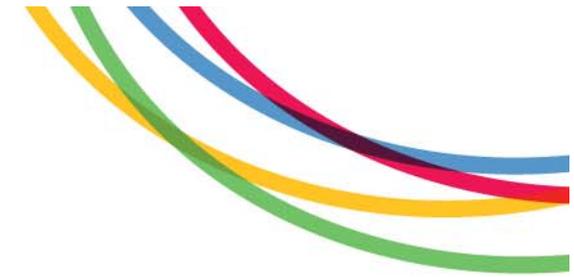
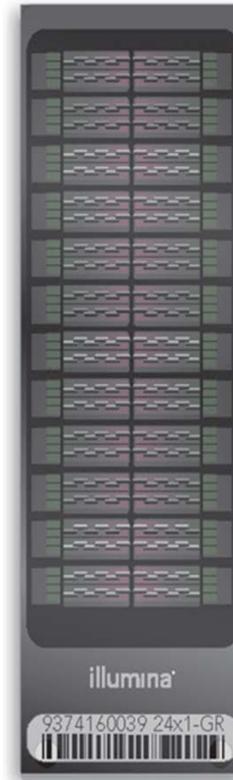
Blood analytes available



Measure	Applications
Cholesterol & triglycerides	'Fat in the blood'. Risk factors for cardiovascular disease
Glucose intolerance: HbA1c	Undiagnosed/poorly managed diabetes
Inflammatory markers: C-reactive protein, fibrinogen	May reflect injury or infection (acute inflammation) or stress (systemic/chronic)
CMV seropositivity	Immunosenescence: wear & tear on immune system. Associated with chronic stress and diabetes
Anaemia: haemoglobin, ferritin	Marker for poor nutrition. Related to age, has significant health consequences
Liver function: ALP, ALT, AST, GGT, albumin	Associated with alcohol, drugs, obesity, consequence of other diseases
Kidney function: creatinine	Age-related kidney disease, other diseases
Hormones: testosterone, IGF1, DHEAS	Stress processes, building muscles, ageing, cognition, CVD. Behaviour (testosterone), diet, diabetes and cancer (IGF-1)

Genetic Data

- **9,944 individuals** who also have biomarker data.
- **Population:** White participants from England, Scotland and Wales
- Genotyped at the **Wellcome Trust Sanger Institute** (Genome Research)
- **Illumina Human Core Exome BeadChip**
- **>500,000 SNPs**
- **>8,000,000 Imputed SNPs**



56%



44%

wellcometrust

Eleftheria Zeggini
Karoline Kuckenbäcker
Bram Prins

Epigenetic Data



- **1175 individuals** who had genetic data
- Blood processed within 1-2 days
- British Household Panel Survey (BHPS)
- At least 10 years of BHPS data (2/3rds have 20 years)
- Data Normalised and cleaned by Tyler Gorrie-Stone, Professor Leo Schalkwyk



- Infinium MethylationEPIC BeadChip
- >850,000 methylation sites across the genome
- 857,071 sites after QC



Professor Jonathon Mill
Dr Eilis Hannon
Dr Joe Burrage