

Supplementary files

Supplementary Table 1. Profiles of the participating cohorts^a

Cohort Country/Region Baseline Year	Age at Baseline & Cohort Follow- Ups ^b	Sampling Methodology	Sample size (N) Baseline & 10/11 yrs Complete Case Rate ^c (%)	Mother ethnic background definition	Weighting & Imputation for Attrition	Dataset Information & Availability
GenR Rotterdam, The Netherlands 2002 to 2006	Baseline (Wave 1): Birth-4yrs ("Preschool Period": 2 mos, 6 mos, 1 yr, 1.5 yrs, 2 yrs, 3 yrs, 4 yrs) Wave 2: 5-6 yrs Wave 3: 9-10 yrs Wave 4: 13 yrs Wave 5: 17 yrs	<ul style="list-style-type: none"> • Pregnant women who expected to deliver between April 2002 to January 2006, living in Rotterdam, who visited a midwife or obstetrician were eligible for participation and contacted by Generation R staff 	Baseline: 9,749 9-10 yrs (Wave 3): 7,393 Complete cases: 4,277 (43.9%)	Mother ethnic group (Majority/Dutch OR Minority)	<ul style="list-style-type: none"> • Weights applied to account for differential attrition • No imputation 	Generation R data are available to request https://generationr.nl/researchers/
LSAC B Australia 2004	Baseline (Wave 1): Birth-1yr Wave 2: 2-3 yrs Wave 3: 4-5 yrs Wave 4: 6-7 yrs Wave 5: 8-9 yrs Wave 6: 10-11 yrs	<ul style="list-style-type: none"> • National sample using two-stage random sampling design: (1) random selection of 10% of postcodes, stratified by state and urban/rural locations), (2) random selection of in-age children within those postcodes from Medicare (universal healthcare) database • Excluded very remote postcodes and postcodes with <20 children (n=874 postcodes, 3.2% of population). 	Baseline: 5,107 10-11 yrs (Wave 6): 3,764 Complete cases: 3,759 (73.6%)	Mother born in country (Yes OR No)	<ul style="list-style-type: none"> • Weighted back to the reference population • Weights adjusted for non-response at each wave 	Longitudinal Study of Australian Children (LSAC B-cohort) data are available to researchers via no-cost licence in a public, open-access repository https://growingupinaustralia.gov.au/data-anddocumentation
ABIS Southeast Sweden 1997 to 1999	Baseline (Sweep 1): Birth Sweep 2: 1 yr Sweep 3: 2.5 yrs Sweep 4: 5 yrs Sweep 5: 8 yrs	<ul style="list-style-type: none"> • All children born October 1, 1997 to September 20, 1999 in a defined region in southeast of Sweden were invited 	Baseline: 17,055 10/12 yrs (Sweep 6) ^d : 4,026 Complete cases: 3,945 (23.1%)	Mother born in country (Yes OR No)	<ul style="list-style-type: none"> • No weights applied • No imputation 	Sweden Alia Barn I Sydöstra Sverige (ABIS) data are available to request for use http://www.abis-studien.se

	Sweep 6: 10-12 yrs					
MCS UK 2000	Baseline (Sweep 1): 9 mos Sweep 2: 3 yrs Sweep 3: 5 yrs Sweep 4: 7 yrs Sweep 5: 10/11 yrs	<ul style="list-style-type: none"> All children born between September 1, 2000 to August 31, 2001 (for England & Wales), and between November 24, 2000 to January 11, 2002 (for Scotland & Northern Ireland), alive and living in UK at age 9 months, and eligible to receive child benefit at that age Eligibility based on government child benefit records (i.e., nearly universal coverage); asylum seekers not eligible Subgroups intentionally oversampled (living in disadvantaged areas, ethnic minorities) 	Baseline: 18,552 10/11 yrs (Sweep 5): 13,354 Complete cases: 13,354 (72.0%)	Mother ethnic group (Majority OR Minority)	<ul style="list-style-type: none"> Weights applied Imputation for differential attrition 	UK Millennium Cohort Study (MCS) data are available for analysis by registered researchers via a public open-access repository https://cls.ucl.ac.uk/cls-studies/millennium-cohortstudy/
QLSCD Québec, Canada 1997	Baseline (Wave 1): 6 mos Wave 2: 1.5 yrs Wave 3: 2.5 yrs Wave 4: 3.5 yrs Wave 5: 4 yrs Wave 6: 5 yrs Wave 7: 6 yrs Wave 8: 7 yrs Wave 9: 8 yrs Wave 10: 10 yrs	<ul style="list-style-type: none"> All singleton live births, born in 1997 from mothers living in Quebec except in First Nations' territories. Excludes very premature or post-term birth, and when sex or gestational age were unknown 	Baseline: 2,120 Wave 10 (10yrs): 1,334 Complete cases: 1,103 (52.0%)	Mother born in country (Yes OR No)	<ul style="list-style-type: none"> Weights applied (Transversal to adjust for participation in a given wave; Longitudinal to account for differential attrition) No imputation 	Quebec Longitudinal Study of Child Development (QLSCD) data are available to request for analysis by registered researchers in a data management centre www.jesuisjeserai.stat.gouv.qc.ca/informations_chercheurs/access_an.html and www.maelstrom-research.org/study/qlscd
NLSCY Canada 2000 to 2004	Baseline: Birth – 11 mos Cycle 2: 2 yrs Cycle 3: 4 yrs Cycle 4: 6 yrs Cycle 5: 8 yrs Cycle 6: 10 yrs	<ul style="list-style-type: none"> Sampling conducted in collaboration with Canada's Labour Force Survey and National Population Health Survey Sampling was stratified by province to select a 	Baseline: 2,227 10 yrs (Cycle 6): 1,356 Complete cases: 1,356 (60.9%)	Mother born in country (Yes OR No)	<ul style="list-style-type: none"> Weights applied to account for differential attrition and to weight back to the population No imputation 	National Longitudinal Survey of Children and Youth (NLSCY) data are available to request for analyses in a research data centre (RDC) upon proposal approval by Statistics Canada http://statcan.gc.ca/en/microdata/data-centres/data

		representative sample of children in Canada				
USNLSY USA 1988 to 1996	Baseline: Birth Round 2: 2 yrs Round 3: 4 yrs Round 4: 6 yrs Round 5: 8 yrs Round 6: 10 yrs	<ul style="list-style-type: none"> • Original NLSY79 cohort was cross-sectional, population representative sample born between January 1958 and December 1964; subsamples intentionally included Hispanic or Latino, black, economically disadvantaged nonblack/non-Hispanic, and military personnel • NLSY79 Child and Young Adult cohort follows offspring born to female respondents of the original NLSY79 cohort. Analytical sample for present study was limited to children born between 1988 to 1996. (Wheezing and Current Asthma Medications only available for children born between 1992 to 1996.) 	Baseline: 3,657 10 yrs (Round 6): 3,104 Complete cases: 2851 (78.0%)	Mother of ethnic group (Majority/White, non-Hispanic OR Minority)	<ul style="list-style-type: none"> • Weights applied to account for differential attrition and to weight back to the population • No imputation 	National Longitudinal Survey of Youth 1979 Child and Young Adult (USNLSY) is available in a public open-access repository www.nlsinfo.org/content/cohorts/nlsy79-children

Note. ^aFactual content regarding cohort profiles is similarly provided across all EPOCH Collaborative Group publications. ^bFollow-ups specific to timeframe of present analyses (birth to age 10); several cohorts are ongoing. Follow-up terminology preserved (e.g., wave, sweep); when no term given, “wave” was used for clarity. ^cSample size was based on complete cases with all variables observed to yield conservative attrition rate estimate; ^dAsthma-related outcomes were collected in a sub sample (n=4,026) in ABIS cohort.

Supplementary Table 2. Asthma Measurement Harmonization Across Cohorts

Cohort	Child Age	Medical Diagnosis (Parent Reported)	Asthma (Ever) (Verbatim Question)	Wheezing or Asthma Attack (Past Year) (Verbatim Question)	Asthma Medication Control (Past Year) (Verbatim Question)
GenR Netherlands	9/10 yrs	Yes	Has your child ever had one of the following diseases diagnosed by a doctor ...Asthma? (Y/N)	Has your child suffered from attacks of wheezing in the chest in the past 12 months? (Y/N)	In the past 12 months, did your child use lung medications (Short-acting beta-agonists, Long-acting beta-agonists, Anticholinergics, Corticosteroids, Combination of beta-agonists and corticosteroids, Leukotriene modifiers, Combination of beta-agonists and anticholinergics, Mast cell stabilizers, Antihistaminicum, Immunomodulator, Other, Unknown)?
LSAC Australia	10-11 yrs	Yes	Has a doctor ever told you that child has asthma? (Y/N)	In the last 12 months, has child had an illness with wheezing in the chest which lasted for one week or more? (Includes whistling or rattling noise in chest) (Y/N)	None
ABIS Sweden	10-12 yrs	Yes	Has your child ever had asthma? (Y/N)	Has your child ever had wheezing or whistling in the chest at any time in the past? If yes, has the child had these symptoms during the last year? (Y/N) Has your child had asthma during the last year (Y/N)?	Information on the prescription of inhaled glucocorticoids at age 10-11 years or both before and after age 10-11 years from the National Prescribed Drug Register
MCS UK	10-11 yrs	Yes	Has child ever had asthma? (Y/N)	Has CHILD had wheezing or whistling in the chest in the last 12 months?	Is CHILD currently taking any medicines on a regular basis that were prescribed by a doctor or hospital? (By medicines, I mean any pills, syrups or other liquids, inhalers, patches, creams, suppositories or injections. By regular, I mean every day for two weeks or more. Please don't include any 'over the counter' medicines). ...Asthma medications: Bronchodilators &/or Prophylactic Steroid inhaler (Y/N)
QLSCD Quebec	10-11 yrs	Yes	Has CHILD ever been diagnosed by a doctor with asthma? (Y/N)	In the past 12 months, did CHILD have an attack of asthma?	In the past 12 months, did CHILD use Ventolin...an inhaler...a puffer? (Y if endorsed any; N if none endorsed)
NLSCY Canada	10-11 yrs	Yes	Has CHILD ever had asthma that was diagnosed by a health professional? (Y/N)	Has CHILD had wheezing or whistling in the chest at any time in the past 12 months?	Does CHILD take any of the following prescribed medication on a regular basis ...ventolin, inhalers or puffers for asthma? (Y/N)
USNLSY USA	10-11 yrs	Yes	Has a doctor, nurse, or other health professional ever told you that CHILD has asthma? (Y/N)	In the past month, ...did CHILD have wheezing in the past month, without a cold or flu?	A quick relief medication is used during an asthma attack to stop it. In the past 30 days, ...has CHILD used any quick relief medicines when he/she has had as asthma attack? (For example, Airomir, Asmol,

			Does CHILD have any physical, emotional, or mental condition that requires...frequent attention or treatment from a doctor or other health professional?...regular use of any medicine or drug? What is CHILD's health condition or limitation? Asthma (Y/N)	During the past 12 months, has CHILD had an episode of asthma or an asthma attack? (Y if either endorsed; N if both not endorsed)	Albuterol, Atrovent, Bricanyl, Predmix, Redipred, Respolin, Maxair, Ventolin) Asthma controller medications are used daily to prevent asthma attacks. Does CHILD use a daily asthma controller medication to prevent attacks? (For example, Advair, Azmacort, Flovent, Fordile, Intal, Oxis, Seretide, Serevent, Singulair, Tilade, Vanceril) (Y if any endorsed; N if none endorsed)
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Supplementary Figure 1. Directed Acyclic Graph

