Supplementary Material

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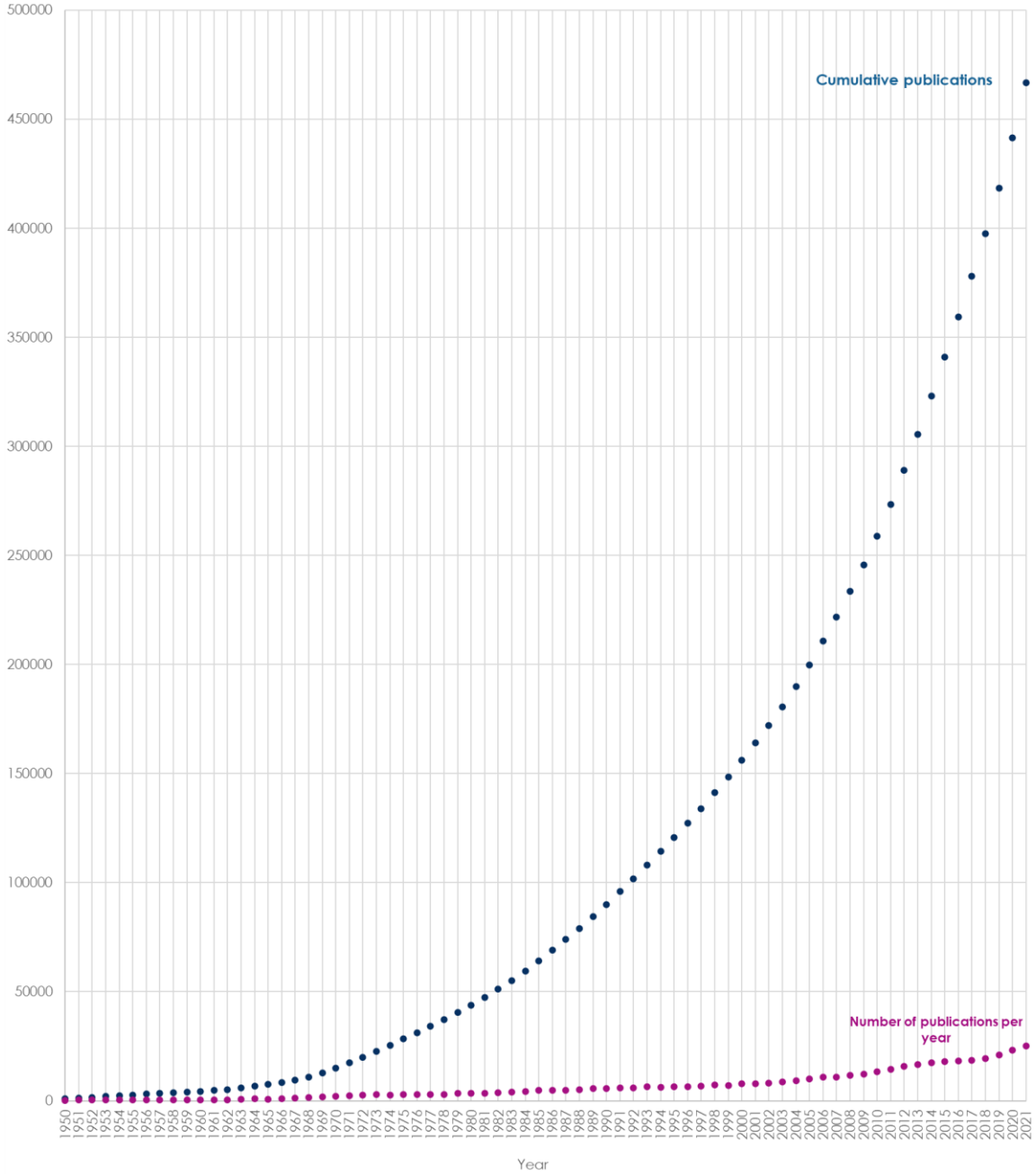
Supplementary material 1- Figure 1. Number of publications on size at birth based on PubMed search



Supplementary material 2-a Full search terms in all the databases

MEDLINE

Ovid MEDLINE(R) ALL <1946 to July 15, 2021>
1 review.pt.
2 (medline or medlars or embase or pubmed or cochrane).tw,sh.
3 (scisearch or psychinfo or psycinfo).tw,sh.
4 (psychlit or psyclit).tw,sh.
5 cinahl.tw,sh.
6 ((hand adj2 search$) or (manual$ adj2 search$)).tw,sh.
7 (electronic database$ or bibliographic database$ or computeri?ed database$ or online database$).tw,sh.
8 (pooling or pooled or mantel haenszel).tw,sh.
9 (peto or dersimonian or der simonian or fixed effect).tw,sh.
10 (retraction of publication or retracted publication).pt.
11 or/2-10
12 1 and 11
13 meta-analysis.pt.
14 meta-analysis.sh.
15 (meta-analys$ or meta analys$ or metaanalys$).tw,sh.
16 (systematic$ adj5 review$).tw,sh.
17 (systematic$ adj5 overview$).tw,sh.
18 (quantitativ$ adj5 review$).tw,sh.
19 (quantitativ$ adj5 overview$).tw,sh.
20 (quantitativ$ adj5 synthesis$).tw,sh.
21 (methodologic$ adj5 review$).tw,sh.
22 (methodologic$ adj5 overview$).tw,sh.
23 (integrative research review$ or research integration).tw.
24 or/13-23
25 12 or 24
26 (birth-weight* or birthweight* or gestation* age* or f?etal growth restriction* or f?etal growth retardation* or intra-uterine growth restriction* or intrauterine growth restriction* or IUGR or prematur* or pre-matur* or preterm* or pre-term* or catch-up or catchup* or rapid weight gain).mp.
27 exp infant, low birth weight/ or exp infant, premature/ or exp Birth Weight/ or Fetal Growth Retardation/
28 26 or 27
29 28 and 25

Using https://bestpractice.bmj.com/info/toolkit/learn-ebm/study-design-search-filters/ for systematic review

Embase

1 exp review/
2 (literature adj3 review$).ti,ab.
3 exp meta analysis/
4 exp "Systematic Review"/
5 or/1-4
6 (medline or medlars or embase or pubmed or cinahl or amed or psychlit or psyclit or psychinfo or psycinfo or scisearch or cochrane).ti,ab.
7 Retracted Article/
8 6 or 7
9 5 and 8
10 (systematic$ adj2 (review$ or overview)).ti,ab.
11 (meta?anal$ or meta anal$ or meta-anal$ or metaanal$ or metanal$).ti,ab.

12 9 or 10 or 11
13 (birth-weight* or birthweight* or gestation* age* or f?etal growth restriction* or f?etal growth retardation* or intra-uterine growth restriction* or intrauterine growth restriction* or IUGR or prematur* or pre-matur* or preterm* or pre-term* or catch-up* or catchup* or rapid weight gain).mp.
14 exp infant, low birth weight/ or exp infant, premature/ or exp Birth Weight/ or Fetal Growth Retardation/
15 13 or 14
16 12 and 15

ERIC
(Birthweight or birth weight or gestational age or gestation age or gestational-age or fetal growth restriction or fetal growth retardation or foetal growth restriction or foetal growth retardation or intra-uterine growth restriction or intrauterine growth restriction or IUGR or premature or prematurity or pre-term or preterm or pre-term or catchup or catch-up or catch up or rapid weight gain)

AND
("meta-analysis" or "meta analysis" or "meta-analyses" or "meta analyses" or "metaanalysis" or "metanalyses" or "systematic review" or "systematic reviews")
Peer review ONLY

Cochrane Library searched using MESH and Medline search terms shown above

Supplementary material 2 b-Detailed full Methods

Search strategy and eligibility criteria

We conducted an umbrella review, gathering information from existing systematic reviews and meta-analyses which examined the effects of size-at-birth on health, growth, and developmental outcomes, in children up to 18 years of age.

We systematically searched MEDLINE, Embase, ERIC, and Cochrane Library databases for manuscripts published until 15 July 2021, without restricting on date, language, or location. The search was limited to peer-reviewed systematic reviews or meta-analyses. Key search concepts included ("birthweight" OR "gestational age" OR "intrauterine growth restriction" OR "prematurity") AND ("systematic review" OR "meta-analysis"). To maximize the eligible reviews, we did not limit the outcomes or the study population. The full search strategy is in supplementary 2. We also hand-searched the reference lists of the eight identified umbrella reviews to ensure we did not miss any reviews.

Citations were imported into EndNote and duplicates removed. Titles and abstracts were screened independently by at least two authors (among NEH, GS, ES) in Rayyan, to identify the studies that met the inclusion/exclusion criteria. All articles identified for full-text screening were assessed for inclusion by at least two authors (ES, NER, VH). Discrepancies were resolved through discussion with a third author (ZJ). We excluded umbrella reviews and systematic reviews of interventions and articles with size-at-birth as an outcome, or which did not have a term, normal birthweight, or appropriate-for-gestational-age comparator, or which included birthweight discordance as an exposure in twins or triplets. Reviews that only showed results for adults (age 18+ years) were excluded, while meta-analyses with children alone or which merged children and adults, were included.

Data extraction and analysis

At least two authors (among ES, VH, GS, NEH, ZJ) independently extracted data on the author, year, location, study design, eligibility criteria, sample size (number of papers reviewed and number of meta-analyses), participants' age-group, exposures with corresponding definitions, outcomes, and, where available, meta-analyses of the measures of effect. If no measure of effect was included and data were available, we calculate a relative risk as appropriate. We sought consensus for discrepancies by discussing with a third author (ZJ, OC). We assessed overall quality and risk of bias of the constituent systematic reviews using the 12 elements in the Joanna Briggs Institute Critical Appraisal checklists (NER, ES); we did not examine the quality of individual studies within each included systematic review. Publication bias assessment of each meta-analysis was a component of the quality assessment (supplementary material 4 b)

In Tables 1 a-g (detailed in supplementary 3), we mapped the evidence examining size-at-birth risk factors on a wide range of outcomes, in seven themes: (a) mortality and hospitalization (b) neonatal and early childhood acute ill-health (c) allergies and lung-related ill-health (d) chronic ill-health (e) behavioural and mental health (f) growth and nutrition (g) developmental (motor, cognitive and educational). The seven themes had 67 sub-themes. The sub-themes in the behavioural, and mental health theme (theme g) were grouped based on DSM5 classifications12. Correlates of size-at-birth measured contemporaneously with birthweight, e.g., head circumference, were not considered to be outcomes. Cost of hospitalization and genetic factors outcomes were not included as they reflected proxies of outcomes included. In Table 2 we did the same as Table 1 for the effects of size-for-gestational-age stratified by gestation.

In Tables 1 a-g meta-analyses of measures of effect were collected for each risk factor and outcome and reported with confidence intervals. The direction of the association was indicated using different colours in Tables 1 a-g– with dark blue denoting a harmful effect, yellow no statistically significant effect, and green, a beneficial effect. The different risk factors examined in Tables a-g are as defined in Box 1; non-standard definitions were indicated by different symbols. A narrative summary of each of the different sub-themes was synthesized, focusing separately on associations between small exposures and continuous/large exposures. Narrative synthesis highlights the magnitude, direction, and consistency of the associations. In Table 3, the results of Tables 1 a-g are summarized with each meta-analysis marked by a symbol indicating the direction of the association.

Age groups studied are shown in Table 1 a-g and Table 2. Occasionally, reviews had sub-themes with only one study and hence no meta-analysis, we did not report effect estimates for these sub-themes.

Country maps were generated using Datawrapper.

We registered our umbrella review (PROSPERO CRD42021268843) and followed PRISMA guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses).

Supplementary material 3- Detailed results by table.

ASSOCIATIONS BETWEEN SIZE-AT-BIRTH AND DIFFERENT OUTCOMES

Mortality and hospitalization- Table 1 a

Thirty-six meta-analyses (4 reviews)[46-49] measured the association between very preterm, preterm, late preterm, very LBW, LBW, SGA, and mortality. All but three meta-analyses (from one low-quality review where we calculated prevalence ratios [47]) showed those with small size-at birth had higher risks of mortality. Very preterm had the greatest increase in early and late neonatal morality. HBW was not associated with higher mortality (3/3 meta-analyses)[50,51]. Nearly all reviews assessed mortality risks in children under 5 years -- only one included mortality in older children[51].

Nearly all meta-analyses showed that being early or late preterm (6/7)[52] or HBW (2/2)[49] increased the risk of hospitalization among neonates.

Neonatal and early childhood ill-health - Table 1 b

Most meta-analyses (5/7)[53] showed that SGA and IUGR were not associated with patent ductus arteriosus, while 2/7 [53] showed that they decreased the risk. Preterm and LBW neonates had a higher risk of having poor Apgar scores or neonatal asphyxia (2/2)[54], while one meta-analysis showed that HBW (>4000g) was associated with a higher risk of asphyxia [49], but no effect when HBW was defined as >4260 g [49]. As physiologically expected, extremely preterm, and other markers of preterm, including extremely LBW and very LBW, were associated with higher risks of retinopathy of prematurity (3/3)[55], while SGA was not (1/1)[55] HBW increased the risk of birth trauma, including shoulder dystocia, Erb's palsy and other trauma (6/6)[49].

LBW and preterm neonates had an increased risk of poor oral health, including more dental carries, opacity, hypoplasia, and molar incisor hypo-mineralisation in nearly all (10/14) meta-analyses (four reviews) [56-59]. Seven reviews (12/12 meta-analyses) [50,52,60-63] all showed that small size-at-birth (very preterm, preterm, late preterm, very LBW, LBW) babies had an increased risk of sepsis and infection, including methicillin-resistant staphylococcus aureus (MRSA) infection, respiratory syncytial virus (RSV) infection, and pneumonia in the first five years of life. The risk of infection at older ages were not studied in meta-analyses. Preterm births had higher risks of epilepsy (3/3) while post-term (1/1) (defined as >41 weeks) did not (1/1)[64]. Extremely LBW, very LBW, preterm (3/3)[65] and increased gestational age per week (3/3)[66] were associated with poorer quality of life, assessed via health utility and sleep duration.

Allergy and lung-related ill-health- Table 1 c

Meta-analyses of small size-at-birth (very preterm, preterm, late term, LBW) neonates showed reduced risks of dermatitis (5/7 meta-analyses; two reviews)[67,68] while continuous measures of birthweight and gestation showed larger and more mature babies had increased risks of dermatitis (2/3)[69]. One review found no relationship between higher birthweight and other allergies (2/3 meta-analyses)[69].

Most meta-analyses of lung-related diseases (57/68 meta-analyses in 14 reviews)[52,70-80,82,83] showed that very preterm, preterm, very LBW, and LBW neonates had an increased risk of asthma, wheezing, or other measures of poor lung function. Only one meta-analysis examined SGA and asthma and found that SGA was associated with a higher risk[73]. Continuous measures of birthweight and gestational age showed children with higher values had a reduced risk of lung-related disease (13/14 meta-analyses in three reviews)[70,73,74]. Post-term and HBW were not associated with asthma or wheezing (6/7 meta-analysis in four reviews)[77,78,80,81].

Chronic ill-health- Table 1 d

Chronic ill-health sub-themes included cardiovascular-related outcomes (hypertension, hypercholesterolaemia and measurements of heart related function, chronic heart disease), chronic kidney diseases, diabetes, cancer and metabolic syndrome.

Extremely preterm, extremely LBW, very preterm, very LBW, preterm and LBW babies generally had increased risks of hypertension, including higher systolic or diastolic blood pressure (SBP/DBP) (24/32 meta-analyses in six reviews)[84-88,94], although 2 metanalyses found IUGR (measured as a combination of fetal growth restriction and SGA) did not. The effects of HBW or LGA on hypertension were mixed, with 6/13 meta-analyses showing increased risk, 2/13 decreased risk, and 5/13 no association (in a total of three reviews)[88,92,93]. In all meta-analyses (7/7)[84] preterm was not associated with total cholesterol, HDL, LDL, triglyceride. The majority of metanalyses showed that for every kg increase in birthweight, cholesterol levels were reduced (9/12 meta-analyses in six reviews)[91,96-100]. Many meta-analyses showed that very preterm, preterm, SGA were associated with an increased risk of coronary heart function indicators (23/36 meta-analyses in two reviews)[101,102], but none examined the effect of large size-at-birth.

Extremely LBW, very preterm, preterm and LBW children had an increased the risk of kidney-related disease markers (21/25 meta-analyses including 5 with a calculated prevalence ratio in five reviews)[85,87,105-107]. One metanalysis examined HBW and chronic kidney disease; it showed no effect [106].

Meta-analyses of the effect of size-at-birth on the development of type 1 diabetes were mixed: 1/5 showed lower risk (LBW) (in one review)[110], 3/5 no risk (LBW) (in two reviews[109,111], and 1/5 higher risk (preterm) (in one review)[108]. By contrast, HBW was consistently associated with a higher risk of type 1 diabetes (4/5 meta-analyses in four reviews)[109-112]. LBW (4/4) and HBW (2/3) were both associated with higher risks of developing type 2 diabetes (in two reviews)[113,114].

Many (178) meta-analyses looked at whether size-at-birth was associated with cancer, including central nervous system tumours, leukaemia, lymphoma, and Wilms' tumour, among others. Among meta-analyses examining preterm, LBW, or SGA (in 13 reviews)[116-122,124,126-130], most (49/60) found no association. Among metanalysis of post-term, HBW, LGA, and continuous measurement of birthweight (in 15 reviews)[112,117-120,122-131], nearly half (50/118) of meta-analyses found an association. Evidence of the association between SGA or LGA and cancer outcomes[112,120,126,129] was mixed.

Meta-analyses of the effect of prematurity or LBW on metabolic syndrome, measured as a combination of chronic diseases outcomes, was also mixed [132].

Behavioural and mental health- Table 1 e

Very preterm, very LBW, preterm, LBW, and SGA neonates had an increased risk of anxiety and depression disorders in some meta-analyses (7/13 in six reviews) [133-137 138]. This was not observed for other psychological disorders (with 17/22 observing no association in three reviews) [134,135,139]. In some cases, extremely LBW was associated with harmful behavioural outcomes (7/18)[140], however, this association did not persist for very LBW or preterm neonates (18/21 no association in three reviews) [138,139,141]. IUGR neonates had a higher risk of adverse behavioural outcomes (1/1) [142]. Extremely preterm, very LBW, LBW and preterm had higher risks of low attention scores (13/14 meta-analyses in five reviews) [138,139,146-148], ADHD (25/32 meta-analyses in six review)) [140-142,149-151] , and autism (4/4 meta-analyses in three reviews) [140,152,153]. Two of the latter reviews examined IUGR and SGA as risk factors and showed no association for ADHD (1/1)[142] but an increased risk for autism (1/1) [153]. The association between preterm, LBW and SGA, and the risk of suicide and suicide attempt was inconsistent (3/5) [154]. Preterm and LBW were associated with lower physical activity among early childhood and older age populations (including adults) (2/2 in two reviews) [143,144]. Large size-at-birth/ post term was rarely examined as a risk factor for either behavioural or developmental themes.

Nutrition and growth- Table 1 f

Sixty-two meta-analyses (13 reviews) examined the effect of size-at-birth on body composition, namely height, weight, head circumference, body fat, body water, bone mineralization, body mass index (BMI), overweight and underweight[77,84,85,91,155-157,159-163 158]. The association between size-at-birth and BMI was mixed, with some meta-analyses showing small size increased the risk of high BMI among children aged under 10 years old (4/10), while others showed no effect among children aged 10-19 years (6/10) in two reviews[77,84]. Small size-at-birth (LBW, preterm and SGA) was consistently associated with higher risk of childhood stunting, wasting, and underweight (9/9)[160]. Evidence on the association between small size-at-birth and overweight/obesity was also mixed, with (2/7) meta-analyses showing no effect (in three reviews), (1/7) increased, and (4/7) decreased effect in three reviews[156,161,162]. LBW was associated with a decreased risk of obesity in children below age 13 years, but not in older children.

In 6 meta-analyses (two reviews), HBW babies had nearly twice the long-term risk of becoming overweight compared to normal birthweight children, irrespective of the age at assessment[161,162]. No meta-analyses examined this association for LGA.

Developmental (neurodevelopment, motor, cognitive and educational)- Table 1 g

Infants born with a small size-at-birth were at increased risk of neurological impairment, and thus of motor and cognitive developmental delays. Evidence on the association between small size-at-birth and brain structure was very consistent; all 26 meta-analyses (4 reviews) indicated that very LBW, very preterm and preterm were more likely to have brain-structure abnormalities, specifically smaller brain volume, reduced cerebral cortex surface area, regional cortical thinning, and brain white-matter injury [164-167].

The association between size-at-birth, specifically very LBW, very preterm and preterm, and poor visuomotor outcomes, was mixed in three reviews [146,147,168], with some meta-analyses showing no effect (3/11) or decreased visuomotor outcomes (7/11), and one meta-analysis showing preterm births had better visuomotor outcomes in neonates (1/11), though the same review showed no improvement in infants.

Small size-at-birth risk factors (extremely preterm, very preterm, preterm, late term extremely LBW, LBW, SGA)) were associated with an increased risk of cerebral palsy (13/14 meta-analyses including 9 with calculated prevalence ratio in four reviews) [170-173], with increasing gestational age being associated with a decreasing cerebral palsy risk (1/1) [170] . Thirty-three meta-analyses (eight reviews)[139,141,174-179], compared small-sized at birth (very LBW, very preterm, preterm, LBW, SGA) to normal birthweight neonates, and showed small-sized babies had increased motor impairment and developmental coordination disorders and decreased muscle strength (27/33). SGA was not associated with motor development (2/2) [174].

Meta-analyses also indicated that poor neurodevelopment led to cognitive deficits that persisted into adolescence and early adulthood. Small size-at-birth (extremely preterm, very preterm, preterm, extremely LBW, very LBW, LBW, SGA) was consistently associated with an increased risk of intellectual disability including of lower cognitive scores, processing speed, mental function, and shifting (cognitive flexibility), planning, and executive functions (32/38 meta-analyses in 13 reviews) [138,139,141,146,148,151,174,177,179,181-184], and of reduced working memory (5/5 meta-analyses in four reviews) [138,141,146,182]. Small size-at-birth babies (extremely preterm, extremely LBW, very preterm, very LBW, preterm, late term, LBW) had lower intelligence quotient (IQ) scores than normal size babies (42/44 meta-analyses in ten reviews)[141,146,177,181,183,185-189]; we noted that the association persisted among SGA and IUGR babies (3/4 meta-analyses in two reviews)[142,188]. However, continuous exposures of gestation age or birthweight did not appear to have an effect in 6/8meta-analyses (with no effect) in two reviews [142 188]. Small size-at-birth babies (extremely preterm, very preterm, very LBW, preterm, LBW, SGA) had lower language development (19/27 meta-analysis in seven reviews)[138,148,174,183,190-192], reading performance (decoding, word identification, comprehension) (25/28 meta-analyses in seven reviews) [138,141,184,190,191,193,194], and applied

mathematics school performance (knowledge, calculation, fluency, applied problem solving) (15/16 meta-analyses in five reviews) [138,141,173,184,193] compared to other babies.

UNDERSTANDING THE RELATIVE EFFECTS OF MATURITY (PRETERM) AND IUGR (SMALL FOR GESTATIONAL AGE) COMBINATIONS- Table 2

Only 11 reviews, and 73 meta-analyses within these, compared risks by size-for-gestational-age stratified by gestation (Table 2). Four reviews[46,48,160,174] (37 meta-analyses) compared term-SGA, preterm- SGA, and preterm-AGA to term-AGA babies. These ideal comparisons elucidated the relative magnitude of the effect of SGA matching on preterm/term status, and the relative magnitude of the effect of gestational age, matching on AGA status. For example, we see that when compared to term-AGA, the preterm-SGA group had the highest risk of neonatal mortality, RR=15.4, followed by preterm-AGA, RR=8.1, and term-SGA, RR=2.4 [46]. This pattern was also observed for cognitive outcomes (Table 2). By contrast for undernutrition (wasting, stunting), the preterm-SGA group had the highest increased risk. For example, when compared to term-AGA, the preterm-SGA risk for stunting was aOR=4.5, followed by term-SGA, aOR=2.4, and preterm-AGA aOR=1.9 (Table 2)[160]. The remaining seven studies (36 meta-analyses) either compared preterm-SGA, preterm-AGA to term-AGA only, or term-SGA to term-AGA or looked at term LBW compared to term normal body weight [42-45,84,87,172]. Table 2 also shows that binarizing gestational age may mask a u-shaped variation in risk and join a higher risk group (HBW) with a lower risk one (normal birthweight), inflating risk in the comparator. For example, very preterm (<34 weeks)-SGA neonates had very high mortality risks (OR=57.0) when compared to term-AGA, while for 34-36 week preterm-SGA births, the risks were lower (OR=19.9)[48].

EXPOSURES

EPT(<28wks)	Extremely preterm
ELBW(<1000g)	Extremely low birthweight
VPT(<32wks)	Very preterm
VLBW(<1500g)	Very low birthweight
PT (<37wks)	Preterm
LBW(<2500g)	Low birthweight
SGA(<10th percentile)	Small for gestational age
BW (cont.)	Birthweight continuous
GA (cont.)	Gestational age continuous
Post Term(>42 wks)	Post term
HBW(>4000g)	High birthweight
LGA(>90th percentile)	Large for gestational age

SYMBOLS in EXPOSURES

X	As defined in exposure

GA

26	GA<26 wks
v	GA- 28/29-31/32 wks
^	GA<34 wks
LLT	GA- 32-36 wks
LT	GA- 34/33 - 36 wks
ET	GA- 37-38 wks
41	GA≥41 wks

BW

X	1500<BW<2500g
o	1000<BW<1500g
^	BW<2000g
X_{GA}	Adjusted and unadjusted for GA
GA	BW adjusted for GA
~	BW 4260-4750g
~~	BW 4760-5250g

SGA

()	SGA<3rd, 5th, and 10th percentile/value x by SD for GA
(	SGA<3rd percentile/value x by SD for GA
BT	SGA between 3 to 10th percentile
P_3	SGA< 3 percentile
P_5	SGA< 5 percentile
XI	SGA with IUGR defined as per footnote
I	IUGR defined as per footnote

REFERENCE

◊	Reference category (2500-4000 g)
◊	Reference category (3260–3750g)
T	Reference category (37≤term≤41)

OUTCOMES

	Harmful effect
	No effect
	Beneficial effect
italic	Calculation/post review publication

aβ	Adjusted β Correlation
aHR	Adjusted Hazard Ratio
aOR	Adjusted Odds Ratio
aRR	Adjusted Relative Risk
aSMD	Adjusted Standardized Mean Difference
HR	Hazard Ratio
MD	Mean Difference
OR	Odds Ratio
RR	Relative Risk
SD	Standard Deviation
SMD	Standardized Mean Difference
SMDH	Standardized Mean Difference for Heteroscedastic Population Variances
WMD	Weighted Mean Difference

ABBREVIATIONS

ABPM	Ambulatory Blood Pressure Monitoring
ADHD	Attention Deficit Hyperactivity Disorder
AGTE	Ankara-Gelisim-Tarama-Envanteri (Ankara Developmental Screening Inventory)
APGAR	Appearance, Pulse, Grimace, Activity and Respiration
ASQ	Ages and Stages Questionnaire
BMI	Body Mass Index
BOTMP	Bruininks-Oseretsky Test of Motor Proficiency
BPD	Bronchopulmonary dysplasia
BSID	Bayley Scales of Infant Development
CELF	Clinical Evaluation of Language Fundamentals
CLD	Chronic Lung Disease
CNS	Central Nervous System
d	Day
DLCO	Diffusion Capacity of the Lung for Carbon Monoxide
EBP	Externalizing Behavioural Problems
eGFR	Estimated Glomerular Filtration Rate
ESRD	End-Stage Renal Disease
$FEF_{25-75\%}$	Forced Expiratory Flow between 25%-75% of Forced Vital Capacity
FEF_{75}	Forced Expiratory Flow at 75% of Forced Vital Capacity
FeNO	Fractional Exhaled Nitric Oxide
FEV_1	Forced Expiratory Volume in 1 second
FGR	Fetal Growth Retardation
FTFQ	Five to Fifteen Questionnaire
FVC	Forced Vital Capacity
GDS-II	Griffiths Developmental Scales Second Edition Motor Subscale
GFR	Glomerular Filtration Rate
h	Hour
HDL	High Density Lipoprotein
HOMA-IR	Homeostasis Model Assessmentof Insulin Resistance
HSCS	Health Status Classification System
hsPDA	Hemodynamically Significant Patent Ductus Arteriosus
HSU	Health Service Use
HUI2/HUI3	Health Utilities Index Mark 2, HUI3 Health Utilities Index Mark 3
IU	International Units
JLO	Judgment of Line Orientation
K-ABC	Kaufman Assessment Battery for Children
KTK	Körperkoordinationstest Für Kinder
LDL	Low Density Lipoprotein
m	Month
MABC	Movement Assessment Battery for Children
MEF_{50}	Maximum Expiratory Flow at 50% of Forced Vital Capacity
min	Minutes
mmHg	Millimeters of Mercury
MRSA	Methicillin-Resistant Staphylococcus Aureus
ms	Millisecond
MSCA	McCarthy Scales of Children's Ability
MVPT	Motor-Free Visual Perception Test Revised
NEPSY	Developmental NEuroPSYchological Assessment
NICU	Neonatal Intensive Care Unit
OGTT	Oral Glucose Tolerance Test
pc	Percentile
PDA	Patent Ductus Arteriosus
PDMS	Peabody Developmental Motor Scales
PEDI	Paediatric Evaluation of Disability Inventory
RSV	Respiratory Syncytial Virus
SDM	Seed-based d Mapping
Touwen	Touwen Neurological Examination
TVPS-R	Test of Visual Perceptual Skills Revised
VMI	Beery-Buktenica Developmental Test of Visual Motor Integration
VO_2	Volume of oxygen
Wee-FIM	Functional Independence Measure for Children
wks	Weeks
y	Year

Table 1 a- Associations between size-at-birth and mortality and hospitalization outcomes

Ref	Exposures (size at birth)												Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large					
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th percentile)			
														Mortality	
46			X										<7d	Early Neonatal Mortality	RR= 34.77 [18.10, 66.79]
46					X								<7d	Early Neonatal Mortality	RR= 7.07 [3.50, 14.28]
46					LT								<7d	Early Neonatal Mortality	RR= 2.86 [1.75, 4.67]
46							X						<7d	Early Neonatal Mortality	RR= 1.98 [1.45, 2.70]
46							P3						<7d	Early Neonatal Mortality	RR= 2.81 [1.93, 4.11]
46			X										8-28d	Late Neonatal Mortality	RR= 24.68 [12.60, 48.36]
46					X								8-28d	Late Neonatal Mortality	RR= 5.53 [3.01, 10.17]
46					LT								8-28d	Late Neonatal Mortality	RR= 3.38 [2.37, 4.82]
46							X						8-28d	Late Neonatal Mortality	RR= 2.08 [1.41, 3.06]
46							P3						8-28d	Late Neonatal Mortality	RR= 2.84 [1.84, 4.38]
47	X												Neonates	Neonatal Mortality	*Prevalence ratio= 0.25*
47		X											Neonates	Neonatal Mortality	*Prevalence ratio= 0.5*
47			v										Neonates	Neonatal Mortality	*Prevalence ratio= 1.5*
46			X										<28d	Neonatal Mortality	RR= 28.82 [15.51, 53.56]
48			^										≤28d	Neonatal Mortality	OR= 58.74 [28.41, 121.45]
47				o									Neonates	Neonatal Mortality	*Prevalence ratio= 1.5*
46					X								<28d	Neonatal Mortality	RR= 6.82 [3.56, 13.07]
47					LT								Neonates	Neonatal Mortality	*Prevalence ratio= 0.75*
48					LT								≤28d	Neonatal Mortality	OR= 6.25 [3.03, 12.87]
46					LT								<28d	Neonatal Mortality	RR= 3.05 [2.02, 4.60]
47						X							Neonates	Neonatal Mortality	*Prevalence ratio= 1.5*
48						X							≤28d	Neonatal Mortality	OR= 7.64 [4.8, 12.15]
46							P3						<28d	Neonatal Mortality	RR= 2.41 [1.66, 3.50]
46							X						<28d	Neonatal Mortality	RR= 1.83 [1.34, 2.50]
48							X						≤28d	Neonatal Mortality	OR= 2.14 [1.33, 3.45]
47										X			Neonates	Neonatal Mortality	*Prevalence ratio= 0.25*
49											X		Neonates	Perinatal Death	OR= 1.77 [0.30, 10.34]
49											~		Neonates	Perinatal Death	OR= 0.73 [0.28, 1.90]
46			X										29-365d	Post Neonatal Mortality	RR= 5.71 [2.70, 12.06]
46					X								29-365d	Post Neonatal Mortality	RR= 2.50 [1.48, 4.22]
46					LT								29-365d	Post Neonatal Mortality	RR= 2.28 [1.62, 3.19]
46							X						29-365d	Post Neonatal Mortality	RR= 1.90 [1.32, 2.73]
46							P3						29-365d	Post Neonatal Mortality	RR= 2.15 [1.48, 4.22]
46			X										<365d	Infant Mortality	RR= 18.42 [8.93, 38.01]
46					X								<365d	Infant Mortality	RR= 4.65 [2.32, 9.33]
46					LT								<365d	Infant Mortality	RR= 2.49 [1.64, 3.78]
46							X						<365d	Infant Mortality	RR= 1.85 [1.28, 2.67]
46							P3						<365d	Infant Mortality	RR= 2.44 [1.53, 3.89]
50					X								<5y	Mortality	OR= 3.81 [1.68, 8.63]
51								X					13-100y	All-cause Mortality	HR= 0.94 [0.92, 0.97] per kg increase
51											◊		13-100y	All-cause Mortality	HR= 1.02 [0.99, 1.05]
														Hospitalization	
52					LT								<14d	Jaundice/Hyperbilirubinemia Admission	OR= 3.87 [2.63, 5.69]
52					LT								<28d	Nonjaundice Admission	OR= 1.35 [0.84, 2.18]
52					LT								≤1m	All-cause Health Service Use (HSU)	OR= 2.24 [1.17, 4.30]
52					LT								≤1y	All-cause Health Service Use (HSU)	OR= 1.73 [1.44, 2.07]
52					LT								1-6y	All-cause Health Service Use (HSU)	OR= 1.37 [1.28, 1.47]
52					ET								<28d	All-cause Health Service Use (HSU)	OR= 2.13 [1.90, 2.40]
52					ET								≤1y	All-cause Health Service Use (HSU)	OR= 1.12 [1.02, 1.23]
49											X		Neonates	Neonatal Intensive Care Unit (NICU) Admission	OR= 1.79 [1.41, 2.26]
49											~		Neonates	Neonatal Intensive Care Unit (NICU) Admission	OR= 2.02 [1.54, 2.63]

Table 1 b- Associations between size-at-birth and neonatal and early childhood ill-health outcomes

Ref	Exposures (size at birth)													Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large						
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th percentile)				
															Primarily neonatal outcomes	
															Congenital defects	
53							XI							<10d	Patent Ductus Arteriosus (PDA)	OR= 0.82 [0.70, 0.96]
53							X							<10d	Patent Ductus Arteriosus (PDA)	OR= 0.81 [0.66, 0.98]
53							P5							<10d	Patent Ductus Arteriosus (PDA)	OR= 0.63 [0.26, 1.52]
53							P3							<10d	Patent Ductus Arteriosus (PDA)	OR= 1.09 [0.70, 1.71]
53							XI							<10d	Hemodynamically Significant PDA and PDA Treatment	OR= 0.87 [0.72, 1.04]
53							XI							<10d	Hemodynamically Significant PDA	OR= 0.92 [0.71, 1.20]
53							XI							<10d	PDA Requiring Treatment	OR= 0.82 [0.64, 1.06]
															Asphyxia	
54					X									1-5min life	Low APGAR Score, Neonatal Asphyxia	aOR= 3.98 [3.00, 5.29]
54						X								1-5min life	Low APGAR Score, Neonatal Asphyxia	aOR= 5.17 [2.62, 10.22]
49											X			Neonates	Neonatal Asphyxia	OR= 2.88 [1.34, 6.22]
49											~			Neonates	Neonatal Asphyxia	OR= 2.45 [0.24, 25.59]
															Retinopathy	
55	X													<28d	Retinopathy of Prematurity	OR= 6.26 [4.86, 8.06]
55		X												<28d	Retinopathy of Prematurity	OR= 5.8 [4.8, 6.8]
55				X										<28d	Retinopathy of Prematurity	OR= 4.81 [3.77, 6.13]
55							X							<28d	Retinopathy of Prematurity	OR= 1.2 [0.9, 1.80]
															Birth Traumas	
49											X			Neonates	Shoulder Dystocia	OR= 7.18 [2.06, 25.00]
49											~			Neonates	Shoulder Dystocia	OR= 7.33 [5.13, 10.48]
49											~~			Neonates	Shoulder Dystocia	OR= 16.16 [7.62, 34.26]
49											X			Neonates	Other Birth Trauma	OR= 2.99 [1.28, 7.02]
49											~			Neonates	Other Birth Trauma	OR= 25.69 [3.26, 32.13]
49											X			Neonates	Erb's Palsy	OR= 3.45 [1.56, 7.61]
															Primarily children outcomes	
															Caries/Oral Health	
56					X									2–72m	Dental Caries	*Prevalence Ratio= 1.30*
57					X									1-6y	Dental Caries	OR= 1.59 [1.36, 1.87]
57					X									≤3y	Dental Caries	OR= 0.90 [0.59, 1.37]
56						X								2-72m	Dental Caries	*Prevalence Ratio= 1.21*
57						X								≤3y	Dental Caries	OR= 0.78 [0.24, 2.51]
57						X								6m-6y	Dental Caries	OR= 1.12 [0.94, 1.33]
58					X									9-10y	Molar Incisor Hypomineralisation	OR= 1.57 [1.07, 2.31]
59					X									72-336m	Molar Incisor Hypomineralisation	OR= 1.65 [1.14, 2.38]
58						X								8.4-12y	Molar Incisor Hypomineralisation	OR= 3.25 [2.28, 4.62]
59					X									9-156m	Enamel Hypoplasia	OR= 6.63 [3.61, 12.18]
59					X									9-156m	Enamel Opacity	OR= 1.98 [1.21, 3.25]
59					X									9-156m	Developmental Defects of Enamel	OR= 3.27 [2.02, 5.30]
59					X									9-156m	Developmental Defects of Enamel Primary Dentition	OR= 4.07 [2.49, 6.65]
59					X									9-156m	Developmental Defects of Enamel Permanent Dentition	OR= 1.57 [0.88, 2.77]
															Infection/Sepsis	
60					X									<28d	Neonatal Sepsis	OR= 3.36 [2.50, 4.54]
60						X								<28d	Neonatal Sepsis	OR= 1.42 [1.07, 1.88]
61			X											Neonates	Methicillin-Resistant Staphylococcus Aureus (MRSA) Infection	OR= 2.67 [1.35, 5.27]
61				X										Neonates	Methicillin-Resistant Staphylococcus Aureus (MRSA) Infection	OR= 2.63 [1.25, 5.55]
62			X											0-5y	Respiratory Syncytial Virus Acute Lower Respiratory Infection	OR= 2.79 [2.19, 3.55]
50			X											<5y	Respiratory Syncytial Virus Acute Lower Respiratory Infection	OR= 5.90 [2.35, 14.83]
50					X									<5y	Respiratory Syncytial Virus Acute Lower Respiratory Infection	OR= 2.73 [1.92, 3.87]
62					X									0-5y	Respiratory Syncytial Virus Acute Lower Respiratory Infection	OR= 1.96 [1.44, 2.67]
62						X								0-5y	Respiratory Syncytial Virus Acute Lower Respiratory Infection	OR= 1.91 [1.45, 2.53]
63					X									0-5y	Pneumonia Acute Lower Respiratory Infection	OR= 1.9 [1.3, 2.8]
63						X								0-5y	Pneumonia Acute Lower Respiratory Infection	OR= 3.18 [1.02, 9.90]
52					LT									<1y	Infection Admission	OR= 1.44 [1.03, 2.00]

Ref	Exposures (size at birth)													Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large						
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th percentile)				
															Epilepsy	
64					X									0-85y	Epilepsy	OR= 2.16 [1.80, 2.58]
64					X									<5y	Epilepsy	OR= 3.01 [1.95, 4.66]
64					X									≥5y	Epilepsy	OR= 2.01 [1.73, 2.34]
64										41				0-85y	Epilepsy	OR= 1.05 [0.98, 1.12]
															Quality of life	
65		X												8-28y	Health Utility (HUI2, HUI3)	β= -0.068 [-0.098, -0.038]
65				X										8-28y	Health Utility (HUI2, HUI3)	β= -0.030 [-0.030, -0.030]
65					X									5-28y	Health Utility (HUI2, HUI3)	β= -0.066 [-0.098, -0.035]
66									X					3-36m	Total Sleep Duration	β= -0.11 [-0.15, -0.06] per wk increase
66									X					3-36m	Night Sleep Duration	β= -0.05 [-0.08, -0.02] per wk increase
66									X					3-36m	Nap Duration	β= -0.04 [-0.06, -0.01] per wk increase

(53) symbol (XI) IUGR is defined as BW<10th percentile or BW<5th percentile or BW<3rd percentile (or -2 standard deviations); or the combination of BW percentile; or as ultrasound fetal weight

Table 1 c-Associations between size-at-birth and allergies and lung related ill-health outcomes

Ref	Exposures (size at birth)												Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large					
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th			
														Atopic dermatitis	
67			X										1-27y	Atopic dermatitis (Eczema)	RR= 0.78 [0.72, 0.85]
67					X								1-27y	Atopic dermatitis (Eczema)	RR= 0.87 [0.83, 0.91]
67					X								≤2y	Atopic dermatitis (Eczema)	RR= 0.92 [0.59, 1.41]
67					X								>2-5y	Atopic dermatitis (Eczema)	RR= 0.88 [0.84, 0.91]
67					X								>5y	Atopic dermatitis (Eczema)	RR= 0.87 [0.83, 0.90]
67					LT								1-27y	Atopic dermatitis (Eczema)	RR= 0.88 [0.77, 1.00]
68						◊							1-8y	Atopic dermatitis (Eczema)	OR= 0.68 [0.63, 0.75]
69								X					≤6-16y	Atopic dermatitis (ever)	OR= 1.17 [1.04, 1.32] per kg increase
69								X					6m-11y	Atopic dermatitis (current)	OR= 1.03 [0.87, 1.22] per kg increase
69								X					≤2y	Atopic dermatitis (ever or current)	OR= 1.34 [1.08, 1.68] per kg increase
68											◊		1-8y	Atopic dermatitis (Eczema)	OR= 1.09 [1.02, 1.17]
														Other Allergies	
69								X					18m-10y	Food Allergy	OR= 1.44 [1.04, 1.99]
69								X					≤16y	Allergic Rhinitis (ever)	OR= 1.02 [0.91, 1.14]
69								X					4-10y	Allergic Rhinitis (current)	OR= 0.92 [0.69, 1.23]
														Lung Function	
70			X	X									16-33y	FEV_1	MD= -0.78 [-0.96, -0.61]
70			X	X									16-33y	FVC	MD= -0.25 [-0.40, -0.10]
70			X	X									16-33y	FEV_1/FVC	MD= -0.74 [-0.85, -0.64]
70			X	X									16-33y	FEF_{25-75}	MD= -0.88 [-1.12, -0.65]
71			X										6-14y	%FEV_1 (without BPD)	MD= -7.41 [-9.46, -5.37]
71			X										6-14y	%FEV_1 (mild to severe BPD)	MD= -10.54 [-12.90, -8.19]
71			X										6-14y	%FEV_1 (moderate to severe BPD)	MD= -17.76 [-20.04, -15.47]
71			X										6-14y	FVC (without BPD)	MD= -3.0 [-7.8, 1.7]
71			X										6-14y	FVC (mild BPD)	MD= -4.2 [-9.4, 1.0]
71			X										6-14y	FVC (moderate to severe BPD)	MD= -6.3 [-12.6, -0.1]
71			X										6-14y	FEV_1 (without BPD)	MD= -5.6 [-10.6, -0.7]
71			X										6-14y	FEV_1 (mild BPD)	MD= -9.9 [-15.3, -4.4]
71			X										6-14y	FEV_1 (moderate to severe BPD)	MD= -12.1 [-18.6, -5.6]
71			X										6-14y	FEV_1/FVC (without BPD)	MD= -2.8 [-6.2, 0.7]
71			X										6-14y	FEV_1/FVC (mild BPD)	MD= -5.5 [-9.3, -1.7]
71			X										6-14y	FEV_1/FVC (moderate to severe BPD)	MD= -6.8 [-11.3, -2.2]
71			X										6-14y	MEF_{50} (without BPD)	MD= -13.5 [-23.3, -3.7]
71			X										6-14y	MEF_{50} (mild BPD)	MD= -22.0 [-32.7, -11.2]
71			X										6-14y	MEF_{50} (moderate to severe BPD)	MD= -26.6 [-39.5, -13.8]
71			X										6-14y	DLCO (without BPD)	MD= -1.8 [-7.7, 4.1]
71			X										6-14y	DLCO (mild BPD)	MD= -8.0 [-14.7, -1.4]
71			X										6-14y	DLCO (moderate to severe BPD)	MD= -9.9 [-17.6, -2.2]
72					X								7-19y	%FEV_1 (without BPD cases)	MD= -7.15 [-8.73, -5.58]
72					X								7-19y	%FEV_1 (including BPD cases)	MD= -8.70 [-10.98, -6.42]
73					X								3.9-19.1y	FEV_1	β= -0.20 [-0.26, -0.14]
73					X								3.9-19.1y	FEV_1/FVC	β= -0.15 [-0.21, -0.09]
73					X								3.9-19.1y	FEF_{75}	β= -0.19 [-0.27, -0.11]
73						X							3.9-19.1y	FEV_1	β= -0.29 [-0.38, -0.21]
73						X							3.9-19.1y	FEV_1/FVC	β= -0.16 [-0.25, -0.08]
73						X							3.9-19.1y	FEF_{75}	β= -0.17 [-0.26, -0.08]
70									X				16-33y	FEV_1	MD= 0.08 [0.04, 0.12] per wk increase
70									X				16-33y	FVC	MD= 0.04 [0.004, 0.07] per wk increase
70									X				16-33y	FEV_1/FVC	MD= 0.06 [0.03, 0.09] per wk increase
70									X				16-33y	$FEF_{25-75\%}$	MD= 0.06 [0.03, 0.10] per wk increase
														Lung Diseases (Asthma/wheezing)	
74			X										9m-12y	Wheezing Disorders	OR= 3.00 [2.61, 3.44]
74					X								0-14y	Wheezing Disorders	OR= 1.71 [1.57, 1.87]
74					X								<5y	Wheezing Disorders	OR= 1.70 [1.49, 1.94]
74					X								≥5y	Wheezing Disorders	OR= 1.71 [1.44, 2.03]
74					X								0.5-11y	Wheezing	OR= 1.63 [1.40, 1.90]

Ref	Exposures (size at birth)													Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large						
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th				
74					X									0-14y	Asthma	OR= 1.76 [1.57, 1.96]
75					X									1-4y	Wheezing	OR= 1.34 [1.25, 1.43]
76					X									1-31y	Asthma	aOR= 1.36 [1.30, 1.43]
76					X									<10y	Asthma	OR= 1.40 [1.11, 1.90]
76					X									≥10y	Asthma	OR= 1.19 [0.93, 1.51]
73					X									3.9-19.1y	Asthma	aOR= 1.34 [1.15, 1.57]
77					X									0-6y	Asthma	HR= 1.29 [0.74, 2.23]
75					X									5-10y	Asthma	OR= 1.40 [1.18,1.67]
74					LT									9m-11y	Wheezing Disorders	OR= 1.49 [1.34, 1.66]
78						X								6m-16y	Wheezing Disorders	OR= 1.60 [1.39, 1.85]
78						X								1-16y	Asthma	OR= 1.60 [1.36, 1.89]
78						X								6m-16y	Wheezing	OR= 1.50 [0.95, 2.39]
75						X								1-4y	Wheezing	OR= 1.10 [1.00, 1.21]
79						X								<3-16y	Asthma	Risk ratio= 1.15 [1.08, 1.22]
79						X								≤10y	Asthma	Risk ratio= 1.17 [1.06, 1.28]
79						X								>10y	Asthma	Risk ratio= 1.15 [1.07, 1.23]
73						X								3.9-19.1y	Asthma	aOR= 1.32 [1.07,1.62]
77						X								0-6y	Asthma	HR= 1.43 [0.76, 2.70]
80						X								Children	Asthma	OR= 1.28 [1.09, 1.50]
75						X								5-10y	Asthma	OR= 1.13 [1.01, 1.27]
80						◊								Children	Asthma	OR= 1.34 [1.13, 1.60]
78						◊								1-18y	Wheezing Disorders	OR= 1.37 [1.05, 1.79]
73							X							3.9-19.1y	Asthma	aOR= 1.18 [1.01 , 1.37]
73								X						3.9-19.1y	Asthma	aOR= 0.94 [0.90,0.97] per 500g increase
73								X						3.9-19.1y	Asthma	aOR= 0.98 [0.94, 1.03] per SDS increase
74									X					0.5-14y	Wheezing Disorders	aOR= 0.94 [0.92, 0.96] per wk increase
74									X					<5y	Wheezing Disorders	aOR= 0.96 [0.94, 0.97] per wk increase
74									X					≥5y	Wheezing Disorders	aOR= 0.93 [0.92, 0.95] per wk increase
74									X					9m-14y	Wheezing Disorders (parental reported)	aOR= 0.95 [0.92, 0.97] per wk increase
74									X					0.5-11y	Wheezing Disorders (doctor diagnosed)	aOR= 0.93 [0.91, 0.96] per wk increase
74									X					0.5-6y	Wheezing	aOR= 0.95 [0.93, 0.96] per wk increase
74									X					1-14y	Asthma	aOR= 0.93 [0.90, 0.96] per wk increase
73									X					3.9-19.1y	Asthma	aOR= 0.94 [0.92, 0.97] per wk increase
77										X				0-6y	Asthma	HR= 1.02 [0.71, 1.47]
78											X			1-18y	Wheezing Disorders	OR= 1.02 [0.99, 1.04]
78											X			1-18y	Asthma	OR= 1.33 [0.95, 1.85]
81											X			6m-31y	Asthma	RR= 1.2 [1.1, 1.3]
77											X			0-6y	Asthma	HR= 0.93 [0.72, 1.21]
80											X			Children	Asthma	OR= 1.06 [0.93, 1.21]
80											◊			Children	Asthma	OR= 1.04 [0.92, 1.19]
52					LT									2-6y	Asthma Admission	HR= 1.22 [1.13, 1.32]
															Other lung related outcomes	
52					LT									<1y	Respiratory Problem Admission	OR= 2.02 [1.26, 3.23]
82					X									6-33y	Fractional Exhaled Nitric Oxide (FeNO) (ppb)	MD= -0.74 [-1.88, 0.41]
82					X									6-33y	Fractional Exhaled Nitric Oxide (FeNO) with CLD (ppb)	MD= -2.82 [-5.87, 0.22]
83					X									5-22y	Bronchial Hyper-Responsiveness	OR= 1.88 [1.32, 2.66]
83					X									7-22y	Bronchial Hyper-Responsiveness (after methacholine challenge)	OR= 1.89 [1.12, 3.19]
83					X									6-14y	Bronchial Hyper-Responsiveness (after an exercise test)	OR= 2.59 [1.50, 4.50]
83					X									5-22y	Bronchial Hyper-Responsiveness had CLD	OR= 4.54 [2.68, 7.69]
83					X									7-22y	Bronchial Hyper-Responsiveness had CLD (after methacholine ch	OR= 4.35 [2.36, 8.03]
83					X									6-14y	Bronchial Hyper-Responsiveness had CLD(after an exercise test)	OR= 5.13 [1.82, 14.47]

Table 1 d-Associations between size-at-birth and chronic ill-health outcomes

Ref	Exposures (size at birth)												Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large					
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th			
														Hypertension	
84	X												Child/Adult	Systolic Blood Pressure (mmHg)	MD= 2.31 [0.27, 4.36]
84	X												Child/Adult	Diastolic Blood Pressure (mmHg)	MD= 0.61 [-0.28, 1.50]
85		X	^										11y	Systolic Blood Pressure (mmHg)	*MD= 4.6 (0.73)*
85		X	^										11y	Systolic Blood Pressure (pc)	*MD= 9.8 (1.2)*
85		X	^										11y	Diastolic Blood Pressure (pc)	*MD= 9.3 (5.9)*
85		X	^										11y	Diastolic Blood Pressure (mmHg)	*MD= 2.3 (0.9)*
85		X	^										11y	Blood Pressure >95 pc	*OR= 1.37, p= 0.049*
84			X										Child/Adult	Systolic Blood Pressure (mmHg)	MD= 2.12 [1.25, 3.00]
84			X										Child/Adult	Diastolic Blood Pressure (mmHg)	MD= 0.45 [-0.22, 1.12]
86			X	X									7-20.7y	Systolic Blood Pressure (mmHg)	MD= 3.30 [2.43, 4.18]
86				X	X								5-30y	Systolic Blood Pressure (mmHg)	MD= 2.50 [1.67, 3.32]
84					X								5-45y	Systolic Blood Pressure (mmHg)	MD= 3.26 [2.08, 4.44]
84					X								<10y	Systolic Blood Pressure (mmHg)	MD= 1.03 [-1.13, 3.18]
84					X								<10-19y	Systolic Blood Pressure (mmHg)	MD= 2.00 [1.17, 2.83]
84					X								10-19y	Systolic Blood Pressure (mmHg)	MD= 3.24 [0.90, 5.57]
87					X								6.6-49y	Systolic Blood Pressure (mmHg)	SMD= 0.35 [0.22, 0.48]
87					X								10.6-26y	ABPM-Systolic Blood Pressure	SMD= 0.33 [0.18, 0.49]
87					X								10.6-35.8y	ABPM-Systolic Blood Pressure Daytime	SMD= 0.35 [0.20, 0.49]
87					X								10.6-35.8y	ABPM-Systolic Blood Pressure Night-time	SMD= 0.22 [0.07, 0.37]
84					X								5-45y	Diastolic Blood Pressure (mmHg)	MD= 1.32 [0.61, 2.04]
84					X								<10y	Diastolic Blood Pressure (mmHg)	MD= 1.46 [0.33, 2.60]
84					X								<10-19y	Diastolic Blood Pressure (mmHg)	MD= -0.98 [-0.41, 1.45]
84					X								10-19y	Diastolic Blood Pressure (mmHg)	MD= 1.14 [-0.36, 2.63]
87					X								6.6-49y	Diastolic Blood Pressure	SMD= 0.33 [0.20, 0.47]
87					X								10.6-26y	ABPM-Diastolic Blood Pressure	SMD= 0.23 [0.07, 0.39]
87					X								10.6-35.8y	ABPM-Diastolic Blood Pressure Daytime	SMD= 0.19 [0.05, 0.33]
87					X								10.6-35.8y	ABPM-Diastolic Blood Pressure Night-time	SMD= 0.19 [-0.01, 0.38]
88						X							4-84y	Systolic Blood Pressure (mmHg)	MD= 2.58 [1.51, 3.64]
88						X							5-84y	Diastolic Blood Pressure (mmHg)	MD= 1.01 [0.19, 1.83]
89								X					Child/Adult	Systolic Blood Pressure (mmHg)	aβ= -2.00 [-2.49, -1.50] per kg increase
89								X					<18y	Systolic Blood Pressure (mmHg)	aβ= -1.64 [-2.16, -1.12] per kg increase
90								X					0-71y	Systolic Blood Pressure (mmHg)	β= -1.38 [-1.66, -1.10] per kg increase
91								X_{GA}					8.1-38.1y	Systolic Blood Pressure (mmHg)	β= -2.02 [-3.07, -0.97]
91								GA					8.1-38.1y	Systolic Blood Pressure (mmHg)	β= -0.84 [-3.55, 1.87]
91								X					8.1-38.1y	Systolic Blood Pressure (mmHg)	β= -2.30 [-3.53, -1.07]
91								X					14.5-32.8y	Diastolic Blood Pressure (mmHg)	β= -0.74 [-1.64, 0.10]
92											X		16-70y	Systolic Blood Pressure (Females) (mmHg/kg)	β= 3.27 [1.39, 5.16]
92											X		16-70y	Systolic Blood Pressure (Males) (mmHg/kg)	β= 0.42 [0.02, 0.83]
92											◊		16-70y	Systolic Blood Pressure (Females) (mmHg/kg)	β= 2.96 [0.85, 5.07]
92											◊		16-70y	Systolic Blood Pressure (Males) (mmHg/kg)	β= 0.44 [-0.02, 0.89]
88											X		5-84y	Systolic Blood Pressure (mmHg)	MD= -2.08 [-2.98, -1.17]
88											X		5-84y	Diastolic Blood Pressure (mmHg)	MD= -0.37 [-1.19, 0.45]
93											◊	X	6-59y	Systolic Blood Pressure (mmHg)	WMD= -0.25 [-0.92, 0.42]
93											◊	X	6-11y	Systolic Blood Pressure (mmHg)	WMD= 1.40 [0.20, 2.61]
93											◊	X	6-60y	Diastolic Blood Pressure (mmHg)	WMD= 0.20 [-0.23, 0.62]
93											◊	X	6-12y	Diastolic Blood Pressure (mmHg)	WMD= 0.96 [0.57, 1.35]
94							XI						0.04-48.6y	Blood Pressure (mmHg)	MD= -0.56 [-1.72, 0.60]
94							XI						<18y	Blood Pressure (mmHg)	MD= -0.54 [-1.88, 0.81]
95								X					7-50y	Blood pressure (mmHg): Unpaired twins	aβ= -2.0 [-3.2, -0.8] per kg increase
95								X					7-50y	Blood pressure (mmHg): Paired twins	aβ= -0.4 [-1.5, 0.7] per kg increase
88						X							6-84y	Hypertension	OR= 1.21 [1.13, 1.30]
88											X		12-84y	Hypertension	OR= 0.78 [0.71, 0.86]
93											◊	X	4-80y	Hypertension	RR= 1.00 [0.93, 1.06]
93											◊	X	4-12y	Hypertension	RR= 1.18 [1.05, 1.32]
														Hypercholesterolaemia	
84					X								8-35.7y	Total Cholesterol (mmol/L)	SMD= 0.12 [-0.05, 0.30]
84					X								10-19y	Total Cholesterol (mmol/L)	SMD= -0.02 [-0.10, 0.07]

Ref	Exposures (size at birth)											Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large				
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th			
91								X_{GA}					16.5-50.4y	Cholesterol (mmol/L)	β= -0.07 [-0.11, -0.04]
96								X					0-84y	Cholesterol (mmol/L)	aWMD= -0.036 [-0.047, -0.025]
97								X					13-16y	Total Cholesterol (mmol/L)	β= -0.061 [-0.131, 0.008]per kg increase
97								X					0-70y	Total Cholesterol (mmol/L)	β= -0.048 [-0.078, -0.018]per kg increase
98								X					6-70y	Total Cholesterol: Males (mmol/L)	aβ= -0.04 [-0.07, -0.02] per kg increase
98								X					6-70y	Total Cholesterol: Females (mmol/L)	aβ= -0.01 [-0.04, 0.02]] per kg increase
99								X					16-75y	Total Cholesterol (mmol/L)	aβ= 0.038 [0.00984, 0.0661] per kg lower
84					X								8-35.7y	High Density Lipoprotein (HDL) (mmol/L)	SMD= -0.00 [-0.12, 0.11]
84					X								10-19y	High Density Lipoprotein (mmol/L)	SMD= 0.00 [-0.08, 0.08]
84					X								9-35.7y	Low Density Lipoprotein (LDL) (mmol/L)	SMD= 0.02 [-0.10, 0.14]
84					X								8-45y	Triglycerides (mmol/L)	SMD= 0.03 [-0.06, 0.12]
84					X								10-19y	Triglycerides (mmol/L)	SMD= 0.02 [-0.11, 0.07]
99								X					16-75y	Total Triglycerides (mmol/L)	aβ= 0.043 [0.0301, 0.0563] per kg lower
99								X					16-75y	Total Phospholipids (mmol/L)	aβ= 0.015 [0.000414, 0.0298] per kg lower
99								X					16-75y	Total Fatty acids (mmol/L)	aβ= 0.197 [0.122, 0.272] per kg lower
100								X					0.9-75.8y	Circulating Cortisol Levels (nmol/L)	β= 25.3 [5.9, 44.8] (per 1 kg lowe)
99								X					16-75y	Saturated Fatty Acids (mmol/L)	aβ= 0.082 [0.0521, 0.112] per kg lower
														Coronary Heart Disease and Heart Function	
101			X										>1-35y	Left Ventricular Ejection Fraction (%)	WMD= 1.15 [0.35 , 1.95]
101			X										<28d	Left Ventricular Ejection Fraction (%)	WMD= -2.48 [-5.78 , 0.82]
101			X										≥28d-1y	Left Ventricular Ejection Fraction (%)	WMD= -1.97 [-4.38, 0.44]
101			X										>1-≤14y	Left Ventricular Ejection Fraction (%)	WMD= 1.67 [-0.48, 3.82]
101			X										>1-35y	Left Ventricular Peak Systolic Tissue Velocity (cm/s)	WMD= -0.61 [-0.88, -0.34]
101			X										<28d	Left Ventricular Peak Systolic Tissue Velocity (cm/s)	WMD= -0.93 [-1.15, -0.71]
101			X										≥28d-1y	Left Ventricular Peak Systolic Tissue Velocity (cm/s)	WMD= -0.10 [-0.60, 0.40]
101			X										>1-≤14y	Left Ventricular Peak Systolic Tissue Velocity (cm/s)	WMD= -0.73 [-1.05, -0.41]
101			X										>1-35y	Right Ventricular Strain (%)	WMD= 3.02 [2.23, 3.82]
101			X										<28d	Right Ventricular Strain (%)	WMD= 3.87 [1.54, 6.20]
101			X										≥28d-1y	Right Ventricular Strain (%)	WMD= 3.01 [0.81, 5.22]
101			X										>1-35y	Left Ventricular Peak Early Diastolic Tissue velocity(cm/s)	WMD= -1.12 [-1.54, -0.70]
101			X										<28d	Left Ventricular Peak Early Diastolic Tissue velocity(cm/s)	WMD= -1.93 [-2.46, -1.39]
101			X										≥28d-1y	Left Ventricular Peak Early DiastolicTissue velocity(cm/s)	WMD= -1.48 [-2.63, -0.32]
101			X										>1-≤14y	Left Ventricular Peak Early Diastolic Tissue velocity(cm/s)	WMD= -1.28 [-1.82, -0.74]
102					X								3m-16y	Carotid Intima-Media Thickness (cm)	SMD= 0.03 [-0.17, 0.22]
102					X								2-16y	Carotid Intima-Media Thickness (cm)	SMD= 0.02 [-0.20, 0.25]
101					X								>1-35y	Left Ventricular Ejection Fraction (%)	WMD= 0.79 [0.02, 1.55]
101					X								<28d	Left Ventricular Ejection Fraction (%)	WMD= -2.89 [-5.18, -0.61]
101					X								≥28d-1y	Left Ventricular Ejection Fraction (%)	WMD= -1.58 [-3.60, 0.44]
101					X								>1-≤14y	Left Ventricular Ejection Fraction (%)	WMD= 1.67 [-0.48, 3.82]
101					X								>1-35y	Left Ventricular Peak Systolic Tissue Velocity (cm/s)	WMD= -0.34 [-0.83, 0.14]
101					X								<28d	Left Ventricular Peak Systolic Tissue Velocity (cm/s)	WMD= -0.81 [-1.13, -0.49]
101					X								≥28d-1y	Left Ventricular Peak Systolic Tissue Velocity (cm/s)	WMD= 0.13 [-0.52, 0.78]
101					X								>1-≤14y	Left Ventricular Peak Systolic Tissue Velocity (cm/s)	WMD= -0.73 [-1.05, -0.41]
101					X								<28d	Right Ventricular Strain (%)	WMD= 2.94 (0.54, 5.35)
101					X								≥28d-1y	Right Ventricular Strain (%)	WMD= 2.73 [0.89, 4.57]
101					X								>1-35y	Right Ventricular Strain (%)	WMD= 3.02 [2.23, 3.82]
101					X								>1-35y	Left Ventricular Peak Early Diastolic Tissue velocity(cm/s)	WMD= -1.05 [-1.46, -0.65]
101					X								<28d	Left Ventricular Peak Early Diastolic Tissue velocity (cm/s)	WMD= -1.19 [-1.76, -0.62]
101					X								≥28d-1y	Left Ventricular Peak Early Diastolic Tissue velocity(cm/s)	WMD= -0.87 [-1.50, -0.23]
101					X								>1-≤14y	Left Ventricular Peak Early Diastolic Tissue velocity(cm/s)	WMD= -1.28 [-1.82, -0.74]
102							X						0-16y	Left Ventricular Peak Early Diastolic Tissue velocity (cm/s)	SMD= 0.40 [0.15, 0.64]
102							X						0-1y	Left Ventricular Peak Early Diastolic Tissue velocity	SMD= 0.63 [-0.02, 1.27]
102							X						2-16y	Left Ventricular Peak Early Diastolic Tissue velocity(cm/s)	SMD= 0.31 [0.06, 0.55]
102							XI						0-16y	Carotid Intima-Media Thickness (cm)	SMD= 0.35 [-0.06, 0.77]
102								X					0-16y	Carotid Intima-Media Thickness (cm)	β= -0.06 [-0.19, 0.08]
103								X					11-85y	Non-fatal and Fatal Ischemic Heart Disease	aRR= 0.84 [0.81, 0.88] per 1kg increase
103								X					15-85y	Fatal Ischemic Heart Disease	aRR= 0.84 [0.80, 0.88] per kg increase
104								X					11-85y	Combined for Non-Fatal And Fatal CHD	RR= 0.83 [0.80, 0.86] per kg increase
101													11-85y	Additional data on paper 101 in appendix	Additional data on paper 101 in appendix

Ref	Exposures (size at birth)													Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large						
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th				
															Kidney Related Diseases	
105		X												5.3-20.7y	Glomerular Filtration Rate (mL/min/1.73m^2) (%)	MD= -13 [-8, -25]
85		X	^											11y	Estimated Glomerular Filtration Rate (mL/min/1.73m^2)	*MD= -11.27 (1.27)*
85		X	^											11y	Glomerular Filtration Rate <90 (mL/min/1.73m^2)	*Prevalence ratio= 3.08 , p<0.001*
87					X									8-14y	Glomerular Filtration Rate	SMD= -0.54 [-0.85, -0.22]
106						X								6.1-41y	Glomerular Filtration Rate (mL/min/1.73m^2)	WMD= -4.55 [-9.08, -0.23]
106								X						6-64y	Estimated Glomerular Filtration Rate (mL/min/1.73m^2)	OR= 2.09 [1.33, 2.85] per kg increase
85		X	^											11y	Cystatin (mg/L)	*MD= 0.085 (0.031)*
85		X	^											11y	High Serum Cystatin C Level >0.95 mg/L	*Prevalence ratio= 3.13 , p<0.001*
87					X									10.7-23.2y	Cystatin-C	SMD= 0.36 [-0.12, 0.85]
85		X	^											11y	Absolute Left Kidney Length (cm)	*MD= -0.449 (0.02)*
85		X	^											11y	Relative Left Kidney Length	*MD= -0.03 (0.001)*
85		X	^											11y	Absolute Right Kidney Length (cm)	*MD= -0.447 (0.07)*
85		X	^											11y	Relative Right Kidney Length	*MD= -0.02 (0.007)*
87					X									10.7-20.7y	Kidney Length (cm)	SMD= -0.73 [-1.04, -0.41]
87					X									10.7-23.2y	Kidney Volume (cm^3)	SMD= -0.82 [-1.05, -0.60]
87					X									10.7-23.2y	Relative Kidney Volume (cm^3/m^2)	SMD= -0.57 [-0.79, -0.35]
85									X					11y	Low Relative Kidney Length	OR= 0.712 per week increase
87					X									10.7-14y	Blood Urea Nitrogen	SMD= 0.13 [-0.27, 0.52]
87					X									20.7-23.2y	Serum Renin	SMD= -0.07 [-0.49, 0.34]
87					X									8-26y	Effective Renal Plasma Flow	SMD= -0.39 [-0.74, -0.04]
87					X									6.7-23.2y	Urine Albumin To Creatinine Ratio	SMD= 0.25 [0.07, 0.43]
87					X									8.6-23.2y	Serum Creatinine (mg/dL)	SMD= -0.03 [-0.21, 0.16]
106						X								5.8-38y	Albumin Creatinine Ratio	WMD= -1.09 [-2.32, 0.14]
107						X								8.8-61y	Albuminuria	OR= 1.81 [1.19, 2.77]
107						X								8.8-61y	Risk of Chronic Kidney Disease(Albuminuria, ESRD, EGFR,Other)	OR= 1.73 [1.44, 2.08]
106						X								<1-75y	Chronic Kidney Disease (assessed by blood)	OR= 1.77 [1.42, 2.20]
106						X								8.8-61y	Chronic Kidney Disease (assessed by urine)	OR= 1.68 [1.27, 2.33]
106											X			<1-75y	Chronic Kidney Disease	OR= 1.09 [0.91, 1.32]
															Diabetes	
															Type 1 Diabetes	
108					X									<6-37y	Type 1 Diabetes	OR= 1.18 [1.11, 1.25]
109						X								≤20y	Type 1 Diabetes	OR= 0.82 [0.54, 1.23]
110						◊								Children	Type 1 Diabetes	HR= 0.78 [0.69, 0.88]
111						◊								0-19y	Type 1 Diabetes	OR= 0.98 [0.84, 1.13]
109						◊								≤20y	Type 1 Diabetes	OR= 1.02 [0.71, 1.46]
110								X						Children	Type 1 Diabetes	β= -0.00032, p= 0.001
109								X						≤20y	Type 1 Diabetes	OR= 1.07 [0.99, 1.15] per kg increase
112											X			<18y	Type 1 Diabetes	OR= 1.15 [1.05, 1.26]
109											X			≤20y	Type 1 Diabetes	OR= 1.17 [1.09, 1.26]
109											◊			≤20y	Type 1 Diabetes	OR= 1.19 [1.02, 1.38]
110											◊			Children	Type 1 Diabetes	HR= 1.08 [1.00, 1.17]
111											◊			0-19y	Type 1 Diabetes	OR= 1.10 [1.03, 1.18]
112												X		<18y	Type 1 Diabetes	OR= 1.10 [1.03, 1.21]
															Type 2 Diabetes	
113						X								6-84y	Type 2 Diabetes	OR= 1.51 [1.43, 1.58]
114						X								6-75y	Type 2 Diabetes	OR= 1.32 [1.06, 1.64]
113						◊								6-76y	Type 2 Diabetes	OR= 1.41 [1.26, 1.58]
114						◊								6-75y	Type 2 Diabetes	OR= 1.47 [1.26, 1.72]
114											X			6-75y	Type 2 Diabetes	OR= 1.27 [1.01, 1.59]
114											◊			6-75y	Type 2 Diabetes	OR= 1.36 [1.07, 1.73]
113											◊			6-76y	Type 2 Diabetes	OR= 1.1 [1.00,1.24]
															Diabetes related measurement	
84					X									3-45y	Fasting Blood Glucose (mg/dl)	SMD= -0.32 [-0.70, 0.07]
84					X									10-19y	Fasting Blood Glucose (mg/dl)	SMD= -0.12 [-0.35, 0.12]
115						X	X							6.5-41y	Fasting Blood Glucose (mmol/L)	MD= 0.05 [-0.03, 0.14]
115						X	X							≤10y	Fasting Blood Glucose (mmol/L)	MD= 0.08 [-0.04, 0.20]

Ref	Exposures (size at birth)													Population	Outcomes	Effect size [confidence interval], direction of association
	Small								Cont		Large					
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th				
115						X	X							>10-20y	Fasting Blood Glucose (mmol/L)	MD= 0.14 [0.04, 0.24]
115						X	X							8.6-41y	OGTT 2-h Glucose (mmol/L)	MD= 0.32 [0.13, 0.52]
115						X	X							>10-20y	OGTT 2-h Glucose (mmol/L)	MD= 0.40 [0.08, 0.71]
84					X									3-35.7y	Fasting Insulin (mIU/mL)	SMD= 0.06 [-0.34, 0.45]
84					X									<10y	Fasting Insulin (mIU/mL)	SMD= -0.54 [-1.13, 0.04]
115						X	X							6.5-26y	Fasting Insulin (pmol/L)	MD= 7.47 [1.77, 13.17]
115						X	X							≤10y	Fasting Insulin (pmol/L)	MD= 5.15 [-4.49, 14.79]
115						X	X							>10-20y	Fasting Insulin (pmol/L)	MD= 6.56 [-4.54, 17.65]
115						X	X							8.6-23.9y	OGTT 2-h Insulin (pmol/L)	MD= 105.55 [65.43, 145.66]
115						X	X							≤10y	OGTT 2-h Insulin (pmol/L)	MD= 118.51 [56.8, 180.22]
115						X	X							>10-20y	OGTT 2-h Insulin (pmol/L)	MD= 65.89 [-50, 181.78]
99								X						16-75y	Insulin (IU/L)	aβ= 0.0426 [0.0282, 0.0569] per kg lower
99								X						16-75y	Glycolysis and Gluconeogenesis: Glucose (mmol/L)	aβ= 0.00367 [-0.000407, 0.00775] per kg lower
99								X						16-75y	Glycolysis and Gluconeogenesis: Pyruvate (µmol/L)	aβ= 2.12 [1.29, 2.95] per kg lower
															Cancer	
															Paediatric CNS Tumour	
116					X									28d-≤21y	Neuroblastoma	OR= 1.09 [0.90, 1.32]
117						X								0-18y	Neuroblastoma	OR= 1.24 [1.00, 1.55]
117						◊								0-18y	Neuroblastoma	OR= 1.23 [0.98, 1.55]
117								X						0-18y	Neuroblastoma	β= 0.52 [0.28, 0.96]
117											X			0-18y	Neuroblastoma	OR= 1.19 [1.04, 1.36]
117											◊			0-18y	Neuroblastoma	OR= 1.21 [1.05, 1.39]
118						X								<19y	Astrocytoma	OR= 0.85 [0.58, 1.25]
119						X								<19y	Astrocytoma	OR= 0.96 [0.79, 1.16]
120						X								0-19y	Astrocytoma	OR= 0.98 [0.86, 1.11]
120						X								0-14y	Astrocytoma	OR= 0.99 [0.82, 1.19]
120						X								0-19y	Low-grade Astrocytoma	OR= 0.75 [0.60, 0.95]
120						X								0-19y	High-grade Astrocytoma	OR= 1.18 [0.78, 1.79]
120							X							0-15y	Astrocytoma	OR= 0.70 [0.51, 0.97]
120								X						0-19y	Astrocytoma	OR= 1.04 [1.02, 1.05] per 500g increase
120								X						0-19y	Low-grade Astrocytoma	OR= 1.02 [0.99, 1.05] per 500g increase
120								X						0-19y	High-grade Astrocytoma	OR= 1.05 [1.02, 1.08] per 500g increase
118								X						<19y	Astrocytoma	linear trend= 19% [4, 36] increase per 1000g
119											X			<19y	Astrocytoma	OR= 1.60 [1.23, 2.09]
118											X			<19y	Astrocytoma	OR= 1.38 [1.07, 1.79]
120											X			0-19y	Astrocytoma	OR= 1.22 [1.13, 1.31]
120											X			0-5y	Astrocytoma	OR= 1.34 [0.93, 1.93]
120											X			0-14y	Astrocytoma	OR= 1.25 [1.14, 1.37]
120											X			0-19y	Low-grade Astrocytoma	OR= 1.15 [1.02, 1.29]
120											X			0-19y	High-grade Astrocytoma	OR= 1.60 [1.21, 2.11]
120												X		0-15y	Astrocytoma	OR= 0.96 [0.75, 1.21]
118						X								<15y	Ependymoma	OR= 1.65 [0.60, 4.53]
119						X								≤15y	Ependymoma	OR= 0.87 [0.54, 1.39]
120						X								0-38y	Ependymoma	OR= 1.10 [0.76, 1.61]
120						X								0-14y	Ependymoma	OR= 0.98 [0.53, 1.79]
120							X							0-15y	Ependymoma	OR= 1.89 [1.00, 3.58]
120								X						0-17y	Ependymoma	OR= 1.01 [0.98, 1.05] per 500g increase
120											X			0-38y	Ependymoma	OR= 1.12 [0.94, 1.34]
120											X			0-14y	Ependymoma	OR= 1.27 [1.05, 1.55]
118											X			<15y	Ependymoma	OR= 1.15 [0.65, 2.04]
119											X			≤15y	Ependymoma	OR= 1.18 [0.97, 1.43]
120												X		0-15y	Ependymoma	OR= 1.52 [0.95, 2.54]
116					X									≤15y	Primary Central Nervous System Tumour	OR= 1.05 [0.93, 1.17]
120						X								0-19y	Central Nervous System Tumour	OR= 1.03 [0.93, 1.13]
120						X								0-5y	Central Nervous System Tumour	OR= 1.02 [0.75, 1.39]
120						X								0-14y	Central Nervous System Tumour	OR= 1.04 [0.95, 1.14]
120							X							0-14y	Central Nervous System Tumour	OR= 0.93 [0.84, 1.02]
120								X						0-19y	Central Nervous System Tumour	OR= 1.03 [1.01, 1.04] per 500g increase

Ref	Exposures (size at birth)												Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large					
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th			
120											X		0-24y	Central Nervous System Tumour	OR= 1.14 [1.08, 1.20]
120											X		0-5y	Central Nervous System Tumour	OR= 1.20 [1.07, 1.36]
120											X		0-14y	Central Nervous System Tumour	OR= 1.14 [1.09, 1.20]
112											X		Children	Central Nervous System Tumour	aOR= 1.15 [1.05, 1.27]
120												X	0-14y	Central Nervous System Tumour	OR= 1.12 [1.03, 1.22]
112												X	Children	Central Nervous System Tumour	aOR= 1.09 [0.95, 1.23]
120						X							0-19y	Embryonal Tumour	OR= 1.06 [0.88, 1.26]
120						X							0-14y	Embryonal Tumour	OR= 1.14 [0.94, 1.38]
120						X							0-19y	Medulloblastoma	OR= 0.98 [0.62, 1.56]
120							X						0-15y	Embryonal Tumour	OR= 1.18 [0.57, 2.44]
120								X					0-19y	Embryonal Tumour	OR= 1.02 [1.01, 1.04] per 500g increase
120								X					0-19y	Medulloblastoma	OR= 1.03 [0.94, 1.13] per 500g increase
120											X		0-19y	Embryonal Tumour	OR= 1.16 [1.04, 1.29]
120											X		0-5y	Embryonal Tumour	OR= 1.15 [0.79, 1.67]
120											X		0-14y	Embryonal Tumour	OR= 1.18 [1.05,1.32]
120												X	0-15y	Embryonal Tumour	OR= 1.10 [0.68, 1.77]
118						X							<19y	Medulloblastoma and Primitive Neuroectodermal Tumours	OR= 1.64 [0.42, 6.48]
119						X							<19y	Medulloblastoma and Primitive Neuroectodermal Tumours	OR= 1.19 [1.02, 1.39]
119						X							≤15y	Medulloblastoma	OR= 1.15 [0.92, 1.43]
118											X		<19y	Medulloblastoma and Primitive Neuroectodermal Tumours	OR= 1.27 [1.02, 1.60]
119											X		<19y	Medulloblastoma and Primitive Neuroectodermal Tumours	OR= 1.20 [1.07, 1.35]
119											X		<16y	Medulloblastoma	OR= 1.31 [1.08, 1.58]
120											X		0-19y	Medulloblastoma	OR= 0.91 [0.69, 1.21]
119						X							<19y	Primitive Neuroectodermal Tumours	OR= 1.24 [0.96, 1.60]
119											X		<19y	Primitive Neuroectodermal Tumours	OR= 1.16 [0.92, 1.46]
120						X							0-21y	Other Gliomas	OR= 0.99 [0.59, 1.66]
120								X					0-21y	Other Gliomas	OR= 1.02 [0.99, 1.06] per 500g increase
120											X		0-21y	Other Gliomas	OR= 1.21 [0.93, 1.56]
120						X							0-21y	Other Specified Tumours	OR= 0.75 [0.48, 1.19]
120								X					0-21y	Other Specified Tumours	OR= 1.03 [0.96, 1.10] per 500g increase
120											X		0-21y	Other Specified Tumours	OR= 1.14 [0.90, 1.45]
120						X							0-21y	Unspecified Tumours	OR= 1.26 [0.68, 2.32]
120								X					0-21y	Unspecified Tumours	OR= 1.01 [0.95, 1.06] per 500g increase
120											X		0-21y	Unspecified Tumours	OR= 1.19 [0.84, 1.67]
														Leukaemia	
121					X								<20y	Acute Leukaemia	OR= 1.09 [1.02, 1.17]
121					X								<5y	Acute Leukaemia	OR= 1.05 [0.97, 1.15]
122					X								<38y	Leukaemia	OR= 1.06 [0.98, 1.13]
123								X					<15y	Leukaemia	HR= 1.25 [0.89, 1.75]
123								X					<3y	Leukaemia	HR= 1.29 [0.79, 2.11]
123								X					≥3y	Leukaemia	HR= 1.57 [0.96, 2.57]
122										X			<38y	Leukaemia	OR= 1.01 [0.90, 1.13]
122										X			≤9y	Leukaemia	OR= 0.91 [0.79, 1.04]
122										X			9-16y	Leukaemia	OR= 1.03 [0.92, 1.15]
123											X		<15y	Leukaemia	HR= 1.25 [0.80, 1.96]
123											X		<3y	Leukaemia	HR= 1.08 [0.55, 2.13]
123											X		≥3y	Leukaemia	HR= 1.56 [0.84, 2.88]
112											X		Children	Leukaemia	aOR= 1.29 [1.20, 1.39]
124						X							<20y	Leukaemia	OR= 1.03 [0.87, 1.23]
124						X							<20y	Acute Lymphoblastic Leukaemia	OR= 0.97 [0.81, 1.16]
124						X							<20y	Acute Myeloid Leukaemia	OR= 1.50 [1.05,2.13]
124								X					<20y	Leukaemia	OR= 1.18 [1.12, 1.23] per kg increase
124								X					<20y	Acute Lymphoblastic Leukaemia	OR= 1.18 [1.12,1.23] per kg increase
125								X					0-29y	Acute Lymphoblastic Leukaemia and Leukaemia Combined	OR= 1.14 [1.08, 1.20]
125											X		0-29y	Acute Lymphoblastic Leukaemia and Leukaemia Combined	OR= 1.26 [1.17, 1.37]
124											X		<20y	Leukaemia	OR= 1.35 [1.24, 1.48]
124											X		<20y	Acute Lymphoblastic Leukaemia	OR= 1.24 [1.16, 1.33]
124											X		<20y	Acute Myeloid Leukaemia	OR= 1.40 [1.11, 1.76]
122					X								<38y	Acute Lymphoblastic Leukaemia	OR= 1.04 [0.97, 1.11]

Ref	Exposures (size at birth)													Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large						
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th				
121					X									<15y	Acute Lymphoblastic Leukaemia	OR= 1.04 [0.96, 1.13]
121					X									<5y	Acute Lymphoblastic Leukaemia	OR= 1.04 [0.93, 1.16]
126							X							0-15y	Acute Lymphoblastic Leukaemia	OR= 0.83 [0.75, 0.92]
126								X						0-15y	Acute Lymphoblastic Leukaemia	OR= 1.16 [1.09, 1.24] (per 1SD increase)
126								X						0-1y	Acute Lymphoblastic Leukaemia	aOR= 1.09 [0.87, 1.37]
126								X						>1-5y	Acute Lymphoblastic Leukaemia	aOR= 1.17 [1.08, 1.27]
126								X						>5y	Acute Lymphoblastic Leukaemia	aOR= 1.18 [1.06, 1.31]
123								X						<15y	Acute Lymphoblastic Leukaemia	HR= 1.16 [0.81, 1.67]
123								X						<3y	Acute Lymphoblastic Leukaemia	HR= 1.23 [0.72, 2.11]
123								X						≥3y	Acute Lymphoblastic Leukaemia	HR= 1.34 [0.78, 2.30]
122										X				<38y	Acute Lymphoblastic Leukaemia	OR= 1.03 [0.95, 1.12]
122										X				≤9y	Acute Lymphoblastic Leukaemia	OR= 0.91 [0.78, 1.05]
122										X				9-16y	Acute Lymphoblastic Leukaemia	OR= 1.03 [0.94, 1.13]
123											X			<15y	Acute Lymphoblastic Leukaemia	HR= 1.21 [0.74, 1.96]
123											X			<3y	Acute Lymphoblastic Leukaemia	HR= 1.02 [0.48, 2.15]
123											X			≥3y	Acute Lymphoblastic Leukaemia	HR= 1.49 [0.77, 2.88]
126												X		0-15y	Acute Lymphoblastic Leukaemia	OR= 1.24 [1.13, 1.36]
126												X		0-1y	Acute Lymphoblastic Leukaemia	aOR= 1.04 [0.75, 1.44]
126												X		>1-5y	Acute Lymphoblastic Leukaemia	aOR= 1.20 [1.06, 1.35]
126												X		>5y	Acute Lymphoblastic Leukaemia	aOR= 1.26 [1.08, 1.46]
122					X									<38y	Acute Myeloid Leukaemia	OR= 1.20 [1.00, 1.44]
127					X									<1y	Acute Myeloid Leukaemia	*OR= 0.92 [0.60, 1.41]*
127					X									1-14y	Acute Myeloid Leukaemia	*OR= 0.98 [0.81, 1.19]*
121					X									<15y	Acute Myeloid Leukaemia	OR= 1.42 [1.21, 1.67]
121					X									<5y	Acute Myeloid Leukaemia	OR= 1.35 [1.07, 1.70]
127						X								<1y	Acute Myeloid Leukaemia	*OR= 1.51 [1.04, 2.19]*
127						X								1-14y	Acute Myeloid Leukaemia	*OR= 1.13 [0.99, 1.29]*
122										X				<38y	Acute Myeloid Leukaemia	OR= 1.20 [1.00, 1.43]
127											X			<1y	Acute Myeloid Leukaemia	*OR= 0.96 [0.68, 1.35]*
127											X			1-14y	Acute Myeloid Leukaemia	*OR= 1.31 [0.99, 1.29]*
125											X			0-29y	Acute Myeloid Leukaemia	OR= 1.27 [0.73, 2.20]
															Lymphoma	
128						X								0-17y	Lymphoma	OR= 1.03 [0.79, 1.33]
128						◊								0-17y	Lymphoma	OR= 1.02 [0.79, 1.33]
128											X			0-17y	Lymphoma	OR= 0.95 [0.79, 1.14]
128											◊			0-17y	Lymphoma	OR= 1.09 [0.76, 1.56]
128						X								0-17y	Non-Hodgkin Lymphoma	OR= 1.03 [0.70, 1.51]
128						◊								0-17y	Non-Hodgkin Lymphoma	OR= 1.07 [0.71, 1.62]
128											X			0-17y	Non-Hodgkin Lymphoma	OR= 1.18 [0.84, 1.67]
128											◊			<18y	Non-Hodgkin Lymphoma	OR= 1.17 [0.76, 1.80]
128						X								0-17y	Hodgkin Lymphoma	OR= 0.94 [0.54, 1.64]
128						◊								0-17y	Hodgkin Lymphoma	OR= 0.94 [0.54, 1.65]
128											X			0-17y	Hodgkin Lymphoma	OR= 0.92 [0.66, 1.24]
128											◊			<18y	Hodgkin Lymphoma	OR= 0.94 [0.64, 1.38]
															Wilm's Tumour (Nephroblastoma)	
129					X									0-15y	Wilms' Tumour	OR= 1.42 [1.14, 1.79]
129						◊								0-15y	Wilms' Tumour	OR= 0.90 [0.67, 1.22]
129											X			0-15y	Wilms' Tumour	OR= 1.36 [1.12, 1.65]
129											X			<24m	Wilms' Tumour	OR= 1.27 [0.97, 1.65]
129											X			24m-15y	Wilms' Tumour	OR= 1.66 [1.28, 2.16]
112											X			Children	Wilms' Tumour	aOR= 1.68 [1.38, 2.06]
129												X		0-15y	Wilms' Tumour	OR= 1.51 [1.25, 1.83]
112												X		Children	Wilms' Tumour	aOR= 1.77 [1.31, 2.39]
															Other tumours	
130						◊								1-59y	Testicular Cancer	OR= 1.18 [1.01, 1.38]
130						◊								1-55y	Testicular Cancer: Seminoma and Non-seminoma	OR= 1.18 [0.98, 1.41]
130						◊								1-55y	Seminoma	OR= 1.44 [1.11, 1.88]
130						◊								1-55y	Non-seminoma	OR= 0.98 [0.81, 1.17]
130											◊			1-59y	Testicular Cancer	OR= 1.12 [1.02, 1.22]

Ref	Exposures (size at birth)													Population	Outcomes	Effect size [confidence interval], direction of association
	Small								Cont		Large					
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)		BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th			
130												◊		1-55y	Testicular Cancer: Seminoma and Non-seminoma	OR= 1.05 [0.95, 1.15]
130												◊		1-55y	Seminoma	OR= 1.04 [0.89, 1.22]
130												◊		1-55y	Non-seminoma	OR= 1.05 [0.93, 1.19]
123									X					<15y	Non-Leukaemia	HR= 1.04 [0.83,1.28] per kg increase
123									X					<3y	Non-Leukaemia	HR= 0.99 [0.71,1.38] per kg increase
123									X					≥3y	Non-Leukaemia	HR= 1.39 [1.02,1.91] per kg increase
123												X		<15y	Non-Leukaemia	HR= 1.09 [0.79, 1.50]
123												X		<3y	Non-Leukaemia	HR= 0.75 [0.45,1.24]
123												X		≥3y	Non-Leukaemia	HR= 1.62 [1.06, 2.46]
131									X					<45y	Bone Tumour	OR= 1.01 [1.00, 1.02] (per 500g increase)
131												X		<45y	Bone Tumour	OR= 1.13 [0.96, 1.33]
131												X		<18y	Bone Tumour	OR= 1.17 [0.96, 1.42]
131												X		<18y	Osteosarcoma	OR= 1.25 [0.91, 1.72]
131												X		<18y	Ewing Sarcoma	OR= 0.81 [0.54, 1.21]
131												X		<18y	Chondrosarcoma	OR= 1.39 [0.55, 3.54]
123									X					<15y	Cancer	aHR= 1.26 [1.02, 1.54] per kg increase
123									X					<15y	Cancer	HR= 1.10 [0.91, 1.31] per kg increase
123									X					<3y	Cancer	HR= 1.08 [0.82,1.42] per kg increase
123									X					≥3y	Cancer	HR= 1.44 [1.11,1.88] per kg increase
123												X		<15y	Cancer	HR= 1.14 [0.88, 1.48]
123												X		<3y	Cancer	HR= 0.84 [0.56, 1.27]
123												X		≥3y	Cancer	HR= 1.60 [1.13, 2.26]
															Metabolic Syndrome	
132					X									9-29y	Metabolic Syndrome (overweight, insulin resistance)	OR= 1.48 [1.00, 2.21]
132						X								7-74y	Metabolic Syndrome (overweight, insulin resistance)	OR= 1.37 [1.17, 1.61]
															Metabolic Biomarkers	
99									X					16-75y	Amino acid: Alanine (µmol/L)	aβ= 5.26 [3.14, 7.38] per kg lower
99									X					16-75y	Ketone bodies: Acetoacetate (µmol/L)	aβ= 0.0177 [-0.00279, 0.0381] per kg lower
99									X					16-75y	Miscellaneous: Albumin	aβ= 0.219 cu [-0.0485, 0.487] per kg lower
99									X					16-75y	Liver function markers: Alanine aminotransferase (cu)	aβ= 0.00282 [0.000213, 0.00542] per kg lower
99									X					16-75y	Inflammatory markers: C-reactive protein (mg/L)	aβ= 0.0518 [0.00349, 0.1] per kg lower
99															Additional data on paper 99 in appendix	Additional data on paper 99 in appendix

(94) IUGR is defined as BW<10th percentile or BW<5th percentile or BW<3rd percentile (or -2 standard deviations); or the combination of BW and length <-2 standard deviations; or BW<2500g and <-2 standard deviations; or BW<1500g and <-2 standard deviations; or ELBW with BW<10th percentile; or BW<10th percentile and BW ratio<0.85; or BW<-2 standard deviations and estimated fetal weight<-15%; or BW ratio<0.8; or estimated fetal weight<10th percentile or abdominal circumference<5th percentile and placental insufficiency>2SD; or VLBW with BW<-2 standard deviations

(102) IUGR is defined based on fetal biometry or Doppler velocimetry

Table 1 e- Associations between size-at-birth and behavioural and mental health outcomes

Ref	Exposures (size at birth)													Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large						
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th percentile)				
															Depressive/ Anxiety Disorders	
133			X	X										11-20y	Anxiety	OR= 2.27 [1.15, 4.47]
134					X	X								3-19y	Clinically Unspecified Anxiety	OR= 2.17 [1.43, 3.29]
134					X	X								5-18y	Generalized Anxiety Disorder	OR= 2.20 [1.26, 3.84]
134					X	X								5-11y	Separation Anxiety Disorder	OR= 1.56 [0.90, 2.71]
134					X	X								7-14y	Clinically Unspecified Depression	OR= 1.55 [0.45, 5.33]
134					X	X								9.7-18y	Major Depressive Disorder	OR= 1.14 [0.71, 1.82]
135					X	X								11-25y	Anxiety and Depressive Disorder Diagnosis	OR= 2.92 [1.82, 4.67]
136					X									7-31y	Depression	OR= 1.38 [1.00, 1.90]
137						X								11-68y	Depression	OR= 1.15 [1.00, 1.32]
136						X								6-45y	Depression	OR= 1.44 [1.17, 1.76]
136							X							11-33y	Depression	OR= 1.46 [1.11, 1.94]
138			^	X										7-17.8y	Anxiety or Depression: Child Behaviour Checklist	Cohen's d= -0.20 [-0.48, 0.08]
138			^	X										7-11.6y	Anxiety or Depression: Teachers Report Form	Cohen's d= -0.28 [-0.45, -0.12]
															Other Psychological	
134					X	X								5-18y	Specific Phobia	OR= 1.93 [1.05, 3.52]
134					X	X								5-18y	Social Phobia	OR= 2.63 [0.87, 7.95]
135					X	X								11-25y	Any Psychiatric Diagnosis	OR= 3.66 [2.57, 5.21]
139					X									1-60m	Negative Affect	Cohen's d= -0.17 [-0.42, 0.08]
139					X									1-60m	Falling Reactivity	Cohen's d= -0.92 [-2.59, 0.75]
139					X									1-60m	Fear	Cohen's d= 0.14 [-0.05, 0.33]
139					X									1-60m	Frustration/Distress to Limitations	Cohen's d= -0.03 [-0.25, 0.20]
139					X									1-60m	Sadness	Cohen's d= 0.10 [-0.07, 0.28]
139					X									1-60m	Discomfort	Cohen's d= -0.07 [-0.54, 0.51]
139					X									1-60m	Perceptual Sensitivity	Cohen's d= -0.05 [-0.29, 0.19]
139					X									1-60m	Shyness	Cohen's d= 0.06 [-0.18, 0.30]
139					X									3-60m	Surgency: Activity level	Cohen's d= -0.20 [-0.38, -0.02]
139					X									1-60m	Surgency: High-intensity Pleasure	Cohen's d= -0.28 [-0.72, 0.16]
139					X									1-60m	Surgency: Impulsivity	dCohen's d= -0.04 [-0.28, 0.20]
139					X									1-60m	Surgency: Vocal Reactivity	Cohen's d= -0.58 [-1.62, 0.46]
139					X									1-60m	Surgency: Smiling and Laughter	Cohen's d= -0.09 [-0.27, 0.09]
139					X									1-60m	Surgency: Approach	Cohen's d= -0.09 [-0.27, 0.09]
139					X									1-60m	Effortful Control	Cohen's d= 0.26 [0.007, 0.52]
139					X									1-60m	Cuddliness	Cohen's d= 0.13 [-0.38, 0.65]
139					X									1-60m	Duration of Orientation	Cohen's d= -0.18 [-0.56, 0.20]
139					X									1-60m	Low-intensity Pleasure	Cohen's d= -0.15 [-0.33, -0.03]
139					X									1-60m	Soothability	Cohen's d= -0.13 [-0.40, 0.14]
															Behavioural	
140		X												6-12y	Internalizing: Parent-Reported	SMD= 0.42 [0.26, 0.58]
140		X												6-12y	Internalizing: Teacher-Reported	SMD= 0.32 [0.12, 0.52]
140		X												15.6-19.7y	Internalizing: Parent-Reported	SMD= 0.51 [0.26, 0.76]
140		X												15.6-18.4y	Internalizing: Self-Reported	SMD= 0.31 [-0.44, 1.06]
140		X												5-36y	Externalizing: Parent-Reported	SMD= 0.15 [0.02, 0.28]
140		X												16.3-19.7y	Externalizing: Parent-Reported	SMD= 0.29 [-0.26, 0.84]
140		X												5-36y	Externalizing: Teacher-Reported	SMD= 0.14 [0.00, 0.29]
140		X												5-36y	Oppositional Defiant Disorder: Parent-Reported	SMD= 0.14 [-0.01, 0.28]
140		X												5-36y	Oppositional Defiant Disorder: Teacher-Reported	SMD= 0.79 [0.40, 1.17]
140		X												14.1-14.7y	Oppositional Defiant Disorder: Parent-Reported	SMD= -0.03 [-0.21, 0.14]
140		X												14.1-14.7y	Oppositional Defiant Disorder: Self-Reported	SMD= -0.34 [-0.54, -0.13]
140		X												5-10y	Social Problems: Parent-Reported	SMD= 0.46 [0.31, 0.61]
140		X												15.6-19.7y	Social Problems: Parent-Reported	SMD= 0.52 [0.00, 1.03]
140		X												15.6-18.4y	Social Problems: Self-Reported	SMD= 0.21 [-0.16, 0.57]
140		X												6-12y	Conduct Disorder: Parent-Reported	SMD= 0.23 [0.09, 0.37]
140		X												6-12y	Conduct Disorder: Teacher-Reported	SMD= 0.19 [-0.01, 0.38]
140		X												14.1-19.7y	Conduct Disorder: Parent-Reported	SMD= -0.30 [-1.58, 0.98]

Ref	Exposures (size at birth)												Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large					
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th percentile)			
140		X											14.1-18.4y	Conduct Disorder: Self-Reported	SMD= -0.17 [-0.38, 0.05]
138			^	X									7-17.8y	Externalizing Behavioural Problem: Child Behaviour Checklist	Cohen's d= -0.09 [-0.05, 0.22]
138			^	X									7-11.6y	Externalizing Behaviour Problem: Teachers Report Form	Cohen's d= -0.08 [-0.24, 0.07]
139					X								1-60m	Adaptability (Behaviour)	Cohen's d= -0.08 [-0.68, 0.51]
139					X								1-60m	Approach (Behaviour)	Cohen's d= -0.07 [-0.27, 0.13]
139					X								1-60m	Difficult (category) (Behaviour)	OR= 0.78 [0.41, 1.50]
139					X								1-60m	Difficult (mean) (Behaviour)	Cohen's d= -0.02 [-0.15, 0.10]
139					X								1-60m	Easy (category) (Behaviour)	OR= 1.67 [0.90, 3.01]
139					X								1-60m	Intensity (Behaviour)	Cohen's d= 0.25 [-0.46, 0.96]
139					X								1-60m	Negativity (Behaviour)	Cohen's d= -0.16 [-0.68, 0.36]
139					X								1-60m	Persistence (Behaviour)	Cohen's d= 0.15 [-0.11, 0.41]
139					X								1-60m	Rhythmicity (Behaviour)	Cohen's d= -0.12 [-0.38, 0.13]
139					X								1-60m	Social Orientation (Behaviour)	Cohen's d= 0.09 [-0.16, 0.34]
139					X								1-60m	Threshold (Behaviour)	Cohen's d= -0.19 [-0.75, 0.38]
139					X								1-60m	Unadaptable (Behaviour)	Cohen's d= -0.22 [-0.63, 0.20]
139					X								1-60m	Unpredictable (Behaviour)	Cohen's d= -0.004 [-0.15, 0.14]
139					X								1-60m	Mood (Behaviour)	Cohen's d= -0.12 [-1.26, 1.03]
139					X								1-60m	Positive emotions (Behaviour)	Cohen's d= -0.16 [-0.61, 0.29]
139					X								1-60m	Activity (Behaviour)	Cohen's d= 0.26 [–0.06, 0.59]
141					X								2-18y	Behaviour Test Score	SMD= -0.32 [-0.41, -0.24]
141					X								4-11y	Behaviour Test Score	SMD= -0.34 [-0.45, -0.23]
141					X								11-18y	Behaviour Test Score	SMD= -0.72 [-0.97, -0.47]
142							X						5-14y	Behavioural Problems	SMD= 0.31 [0.13, 0.48]
														Physical Activity	
143					X								5.8-19y	Exercise Capacity VO_2 max (mL/kg/min)	SMD= -0.33 [-0.58, -0.09]
144						X							14-69y	Leisure Time Physical Activity	OR= 0.72 [0.59, 0.88]
144											◊		14-69y	Leisure Time Physical Activity	OR= 0.92 [0.81 - 1.03]
144											◊		14-69y	Leisure Time Physical Activity	OR= 0.65 [0.50, 0.86]
145								X					0-18y	Physical Activity (counts per minute)	β= -3.08 [-10.20, 4.04] per kg increase
														Attention	
146			X	X									4-5y	Selective Visual Attention (per correct answer)	Cohen's d= -0.36 [-0.53, -0.19]
138			^	X									7-17.8y	Attention Problems using Child Behaviour Checklist	Cohen's d= -0.59 [-0.74, - 0.44]
138			^	X									7-11.6y	Attention Problems using Teachers Report Form	Cohen's d= -0.43 [-0.61, - 0.25]
147					X								0-14m	Latency to Fixate	Cohen's d= -0.18 [-0.33, -0.02]
147					X								0-14m	Habituation	Cohen's d= -0.10 [-0.22, 0.03]
147					X								0-14m	Novelty Preference	Cohen's d= -0.20 [-0.32, -0.08]
147					X								6-24m	Focused Attention	Cohen's d= -0.28 [-0.45, -0.11]
139					X								10-60m	Attention Span (Behaviour)	Cohen's d= 0.26 [0.005, 0.51]
139					X								28-60m	Attentional Focusing (Psychological)	Cohen's d= 0.48 [0.24, 0.73]
139					X								1-60m	Attentional Shifting (Psychological)	Cohen's d= -0.22 [-0.46, -0.02]
148					X								2-17y	Selective Attention	Cohen's d= 0.38 [0.21, 0.54]
148	26												2-17y	Selective Attention	Cohen's d= 0.58 [0.43, 0.74]
148					X								2-17y	Sustained Attention	Cohen's d= 0.45 [0.23, 0.66]
148	26												2-17y	Sustained Attention	Cohen's d= 0.67 [0.31, 1.03]
														Attention-Deficit/Hyperactivity Disorder (ADHD)	
141	X												6-11y	ADHD	OR= 3.3 [2.0, 5.6]
149	X												3-22.5y	ADHD	R= -0.15 [-0.43, 0.13]
140		X											6-12y	Combined ADHD: Teacher-Reported	SMD= 0.54 [0.29, 0.79]
140		X											6-12y	Inattentive ADHD: Teacher-Reported	SMD= 0.54 [0.27, 0.82]
140		X											6-12y	Hyperactive ADHD: Teacher-Reported	SMD= 0.35 [0.19, 0.50]
140		X											6-12y	Combined ADHD: Parent-Reported	SMD= 0.68 [0.56, 0.80]
140		X											6-12y	Inattentive ADHD: Parent-Reported	SMD= 0.58 [0.39, 0.77]
140		X											6-12y	Hyperactive ADHD: Parent-Reported	SMD= 0.46 [0.37, 0.55]
140		X											14.1-18.4y	ADHD: Self-Reported	SMD= -0.03 [-0.28, 0.23]
140		X											14.1-19.7y	Combined ADHD: Parent-Reported	SMD= 0.52 [0.19, 0.85]
140		X											14.7-17.4y	Inattentive ADHD: Parent-Reported	SMD= 0.40 [0.24, 0.56]
140		X											14.7-17.4y	Hyperactive ADHD: Parent-Reported	SMD= 0.26 [0.10, 0.43]

Ref	Exposures (size at birth)													Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large						
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th percentile)				
150			X	X										2-23.2y	ADHD: Combined Symptoms	SMD= 0.55 [0.42, 0.68]
150	X	X												2.5-23.2y	ADHD: Combined Symptoms	SMD= 0.66 [0.39, 0.92]
150			X	X										2-20y	ADHD: Combined Symptoms	SMD= 0.50 [0.38, 0.61]
150			X	X										3-32y	ADHD: Categorically Defined	OR= 3.04 [2.19, 4.21]
150	X	X												5.96-32y	ADHD: Categorically Defined	OR= 4.05 [2.38, 6.87]
150			X	X										3-14y	ADHD: Categorically Defined	OR= 2.25 [1.56, 3.26]
150			X	X										2-23.2y	ADHD: Hyperactivity or Impulsivity Symptoms	SMD= 0.74 [0.35, 1.13]
150	X	X												6.2-23.2y	ADHD: Hyperactivity or Impulsivity Symptoms	SMD= 0.73 [-0.27, 1.18]
150			X	X										2-20y	ADHD: Hyperactivity or Impulsivity Symptoms	SMD= 0.70 [0.00, 1.41]
150			X	X										2-20y	ADHD: Inattentive Symptoms	SMD= 1.31 [0.66,1.96]
150	X	X												8-17.3y	ADHD: Inattentive Symptoms	SMD= 1.23 [0.50, 1.96]
150			X	X										2-20y	ADHD: Inattentive Symptoms	SMD= 1.34 [0.00, 2.69]
149				X										3-22.5y	ADHD	R= -0.09 [-0.30, 0.11]
149					X									3-22.5y	ADHD	r= -0.16 [-0.24, -0.08]
151					X									5-14y	ADHD	RR= 2.64 [1.85, 3.78]
141					X									5-19y	ADHD	OR= 1.6 [1.3, 1.8]
141			v											7-14y	ADHD	OR= 3.7 [1.8, 7.7]
141					LT									5-19y	ADHD	OR= 1.3 [1.1, 1.5]
149						X								3-22.5y	ADHD	R= -0.20 [-0.28, -0.13]
142							X							5-14y	ADHD	OR= 2.36 [0.78, 7.11]
149								X						3-22.5y	ADHD	R= -0.15 [-0.16, -0.13]
149									X					3-22.5y	ADHD	Intercept= -0.12/ SE (0.0089)
															Autism Spectrum Disorder	
140		X												8-11y	Autistic Symptoms Parent-Reported	SMD= 0.56 [0.29, 0.83]
152					X									Children	Autism Spectrum Disorder	Risk ratio= 1.31 [1.16, 1.48]
152						X								Children	Autism Spectrum Disorder	Risk ratio= 1.26 [1.20, 1.34]
153							X							<2-15y	Autism Spectrum Disorder	OR= 1.17 [1.09, 1.24]
															Suicidal Behaviour	
154					X									10-76y	Suicide Attempt	OR= 1.18 [1.12, 1.25]
154						X								10-49y	Suicide Attempt	OR= 1.39 [1.23, 1.56]
154					X									10-87y	Suicide	OR= 1.11 [0.98, 1.25]
154						X								1-51y	Suicide	OR= 1.30 [1.09, 1.55]
154							X							10-87y	Suicide	OR= 1.18 [1.00, 1.40]

Table 1 f- Associations between size-at-birth and nutrition and growth outcomes

Ref	Exposures (size at birth)												Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large					
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th percentile)			
														Body Composition	
155					X								Infants	Length (cm)	MD= -3.71 [-4.60, -2.81]
85		X											11y	Height (cm)	*z-score difference= -0.92 (-0.03), p <0.001*
155					X								Infants	Weight (kg)	MD= -0.59 [-0.75, -0.44]
85		X											11y	Weight (kg)	*z-score difference= -0.61 (0.18), p <0.001*
155					X								Infants	Head Circumference (cm)	MD= -1.03 [-1.52, -0.54]
85		X											11y	Head Circumference (cm)	*z-score difference= -1.52 (0.44), p <0.001*
85		X											11y	Body Surface Area	*z-score difference= -0.10 (-0.01), p <0.001*
155					X								Infants	Total Body Fat (%)	MD= 3.06 [0.25, 5.88]
156					X								4-7y	Total Body Fat (%)	SMD= -3.05 [-8.73, 2.62]
155					X								Infants	Fat Mass (kg)	MD= -0.05 [-0.09, -0.01]
155					X								Infants	Fat Free Mass (kg)	MD= -0.46 [-0.64, -0.27]
156					X								4-7y	Fat Mass Index	SMD= -1.31 [-5.42, 2.81]
156					X								4-7y	Childhood Trunk Fat Index	SMD= 1.03 [-1.64, 3.71]
157							()						At birth	Cord Blood Adiponectin Concentrations	SMD= -1.14 [-2.15, -0.12]
157							(						At birth	Cord Blood Adiponectin Concentrations	SMD= -1.93 [-4.093, -0.022]
157							X						At birth	Cord Blood Adiponectin Concentrations	SMD= -0.383 [-0.744, -0.022]
158							X						0.5h-11d	Total Body Water (%)	*MD= 4.40 [2.83, 5.96]*
158									X				6h-7d	Total Body Water (%)	β= -1.44 [-0.63, -2.24] per week
158												X	0.5h-11d	Total Body Water (%)	*MD= -5.23 [-4.54, -5.91]*
														Bone Mineralization	
159								X					10y	Bone Mass Content	β= 0.02 [0.01, 0.04]
159								X					10y	Bone Mass Density	β= 0.01 [-0.01, 0.03]
														BMI	
84	X												6-32y	Body Mass Index (BMI) (kg/m^2)	MD= -0.50 [-1.10 ,0.09]
84		X											5-30y	Body Mass Index (BMI) (kg/m^2)	MD= -0.30 [-0.54, -0.05]
84					X								4.5-35.7y	Body Mass Index (BMI) (kg/m^2)	MD= -0.13 [-0.40, 0.14]
84					X								<10y	Body Mass Index (BMI) (kg/m^2)	MD= -0.70 [-1.13, -2.28]
84					X								<19y	Body Mass Index (BMI) (kg/m^2)	MD= 5.20 [-3.82, 14.21]
84					X								10-19y	Body Mass Index (BMI) (kg/m^2)	MD= -0.25 [-0.76, 0.26]
91								X_{GA}					16-46.9y	Body Mass Index (BMI) (kg/m^2)	β= 0.52 [0.20, 0.84] per kg increase
91								GA					16-46.9y	Body Mass Index (BMI) (kg/m^2)	β= 0.51 [-0.08, 1.11] per kg increase
91								X					16-46.9y	Body Mass Index (BMI) (kg/m^2)	β= 0.52 [0.17, 0.86] per kg increase
77					T								0-2y	BMI Trajectory: Class 2 (Rapid Growth up to 2 years)	aOR= 2.02 [1.49, 2.74]
77					T								0-6y	BMI Trajectory: Class 3 (Persistent Rapid Growth up to 6 years)	aOR= 1.89 [0.42, 8.49]
77						◊							0-2y	BMI Trajectory: Class 2 (Rapid Growth)	aOR= 1.48 [1.05, 2.10]
77						◊							0-6y	BMI Trajectory: Class 3 (Persistent Rapid Growth)	aOR= 0.78 [0.10, 6.45]
77										X			0-2y	BMI Trajectory: Class 2 (Rapid Growth)	aOR= 0.81 [0.68,0.96]
77										X			0-6y	BMI Trajectory: Class 3 (Persistent Rapid Growth)	aOR= 0.48 [0.15, 1.53]
77											T		0-2y	BMI Trajectory: Class 2 (Rapid Growth)	aOR= 0.98 [0.86, 1.12]
77											T		0-6y	BMI Trajectory: Class 3 (Persistent Rapid Growth)	aOR= 1.62 [0.88, 2.99]
														Undernutrition	
160					X								12-60m	Wasting (weight for length/height for age <2 z-scores)	OR= 1.55 [1.21, 1.97]
160						X							12-60m	Wasting (weight for length/height for age <2 z-scores)	OR= 2.68 [2.23, 3.21]
160							X						12-60m	Wasting (weight for length/height for age <2 z-scores)	OR= 2.36 [2.14, 2.60]
160					X								12-60m	Stunting (length/height for age <2 z-scores)	OR= 1.69 [1.48, 1.93]
160						X							12-60m	Stunting (length/height for age <2 z-scores)	OR= 2.92 [2.56, 3.33]
160							X						12-60m	Stunting (length/height for age <2 z-scores)	OR= 2.32 [2.12, 2.54]
160					X								12-60m	Underweight (weight for age less than 2 z-scores)	OR= 1.66 [1.42, 1.95]
160						X							12-60m	Underweight (weight for age less than 2 z-scores)	OR= 3.48 [3.14, 3.87]
160							X						12-60m	Underweight (weight for age less than 2 z-scores)	OR= 2.96 [2.61, 3.36]
														Overnutrition	
161						X							0-18y	Overweight	OR= 0.60 [0.54, 0.67]
161								X					1-75y	Overweight	β= 0.34 [(0.28, 0.40)] per kg increase
161											X		0-18y	Overweight	OR= 1.76 [1.65, 1.87]

Ref	Exposures (size at birth)												Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large					
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th percentile)			
156					X								6-14y	Obesity	OR= 1.19 [1.13, 1.26]
162						◊							3-18y	Obesity	OR= 0.87 [0.69, 1.08]
162						X							1-17y	Obesity	OR= 0.61 [0.46, 0.80]
162						X							<6y	Obesity	OR= 0.61 [0.43, 0.88]
162						X							6-13y	Obesity	OR= 0.54 [0.32, 0.90]
162						X							13-17y	Obesity	OR= 0.74 [0.37, 1.49]
163								X					7-11y	Obesity	β= 0.649 per kg increase
162											◊		1-16y	Obesity	OR= 2.23 [1.91, 2.61]
162											X		0-17y	Obesity	OR= 2.07 [1.91, 2.24]
162											X		<6y	Obesity	OR= 2.10 [1.93, 2.29]
162											X		6-13y	Obesity	OR= 1.76 [1.36, 2.20]
162											X		13-17y	Obesity	OR= 2.58 [1.56, 4.26]

Table 1 g- Associations between size-at-birth and developmental (neurodevelopmental, motor, cognitive and educational) outcomes

Ref	Exposures (size at birth)												Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large					
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th percentile)			
														Brain neurodevelopment	
164			X	X									8-18y	Total Brain Volume	Cohen's d= -0.58 [-0.43, -0.73]
164			X	X									8-18y	White Matter Volume	Cohen's d= -0.53 [-0.40, -0.67]
164			X	X									8-18y	Grey Matter Volume	Cohen's d= -0.62 [-0.48, -0.76]
164			X	X									14-18y	Cerebellar Volume	Cohen's d= -0.74 [-0.56, -0.92]
164			X	X									14-17y	Hippocampus Volume	Cohen's d= -0.47 [-0.26, -0.69]
164			X	X									14-19y	Size of Corpus Callosum	Cohen's d= -0.71 [-0.34, -1.07]
165					X								3d-20y	Fractional Anisotropy Splenium of Corpus Callosum	SMD= -0.75 [-0.93, -0.57]
165					X								3d-20y	Fractional Anisotropy Genu of Corpus Callosum	SMD= -0.65 [-0.97, -0.33]
165					X								3d-20y	Fractional Anisotropy Body of Corpus Callosum	SMD= -0.73 [-1.13, -0.32]
166					X								Newborn	Auditory Brainstem Response Interval Between Peaks III &V (ms)	MD= 0.081 [0.055, 0.110]
166					X								Newborn	Auditory Brainstem Response: Interval Between Peaks I-V (ms)	MD= 0.073 [0.036, 0.122]
166					X								Newborn	Auditory Brainstem Response: Latency of Peak V (ms)	MD= 0.112 [0.058, 0.165]
166					X								Newborn	Auditory Brainstem Response: Latency of Peak I (ms)	MD= 0.048 [0.008, 0.087]
167					X								9.3-26.5y	Grey matter Left Cuneus Cortex, Brodmann Area 18	SDM= 1343, p<0.05
167					X								9.3-26.5y	Grey Matter Left Superior Frontal Gyrus, Medial Area 8	SDM= 1.554, p<0.05
167					X								9.3-26.5y	Grey Matter Right Anterior Cingulate, Brodmann Area 32	SDM= 1.363, p<0.05
167					X								9.3-26.5y	Grey Matter Right Inferior Temporal Gyrus, Brodmann Area 20	SDM= -4.061, p<0.05
167					X								9.3-26.5y	Grey Matter Left Inferior Temporal Gyrus, Brodmann Area 20	SDM= -3.967, p<0.05
167					X								9.3-26.5y	Grey Matter Left Superior Frontal Gyrus, Orbital Area 11	SDM= -2.198, p<0.05
167					X								9.3-26.5y	Grey Matter Right Caudate Nucleus	SDM= -2.197, p<0.05
167					X								9.3-20.2y	White Matter Right Fusiform Gyrus, Brodmann Area 37	SDM= 2.934, p<0.05
167					X								9.3-20.2y	White Matter Right praecuneus, Brodmann Area 30	SDM= 2.920, p<0.05
167					X								9.3-20.2y	White Matter Left Inferior Temporal Gyrus, Brodmann Area 19	SDM= -5.404, p<0.05
167					X								9.3-20.2y	White Matter Right Inferior Temporal Gyrus, BrodmannArea 20	SDM= -4.278, p<0.05
167					X								9.3-20.2y	White Matter Left Cortico-Spinal Projections	SDM= -2.960, p<0.05
167					X								9.3-20.2y	White Matter Right Inferior Frontal Gyrus	SDM= -3.599, p<0.05
														Motor	
														Visuomotor	
147					X								0-14m	Visual Following	Cohen's d= -0.13 [-0.49, 0.23]
147					X								Neonates	Visual Following (animate stimuli)	Cohen's d= -0.45 [-0.86, -0.04]
147					X								Neonates	Visual Following	Cohen's d= 0.22 [0.03, 0.04]
147					X								Infants	Visual Following	Cohen's d= -0.77 [-1.23, -0.31]
168			X	X									5.1-7y	Visual Perception Abilities (K-ABC)	Cohen's d= -0.10 [-0.22, 0.03]
168			X	X									5.2-11.5y	Visual Perception Abilities (MVPT)	Cohen's d= -0.10 [-0.31, 0.11]
168			X	X									8-16.8y	Visual Perception Abilities (JLO)	Cohen's d= -0.60 [-0.87, -0.32]
168			X	X									6.0-8.7y	Visual Perception Abilities (NEPSY)	Cohen's d= -0.92 [-1.44, -0.40]
168			X	X									5.5-8.0y	Visual Perception Abilities (TVPS-R)	Cohen's d= -0.72 [-1.2, -0.23]
168			X	X									3.5-16.8y	Visual Motor Integration (VMI)	Cohen's d= -0.69 [-0.80, -0.58]
146			X	X									3-5y	Visuomotor Integration Skill: Graphomotor Skill	Cohen's d= -0.57 [-0.72, - 0.43]
169								X					10-11y	Unaided Distance Vision of 6/12 or Worse (indicative of myopia)	aOR= 0.85 [0.76, 0.95] per kg increase
169								X					15-16y	Unaided Distance Vision of 6/12 or Worse (indicative of myopia)	aOR= 1.00 [0.90, 1.11] per kg increase
														Cerebral Palsy	
170	X												1-10y	Cerebral Palsy	*Prevalence Ratio= 129.20*
171	X												2-8y	Cerebral Palsy	*Prevalence Ratio= 60.92*
171		X											2-8y	Cerebral Palsy	*Prevalence Ratio= 42.58*
170			v										1-10y	Cerebral Palsy	*Prevalence Ratio= 54.80*
171			v										2-8y	Cerebral Palsy	*Prevalence Ratio= 31.96*
171				o									2-8y	Cerebral Palsy	*Prevalence Ratio= 44.49*
170					LLT								1-10y	Cerebral Palsy	*Prevalence Ratio= 4.42*
172					LLT								Infants	Cerebral Palsy	RR= 1.89 [1.04–3.43]
171					LT								2-8y	Cerebral Palsy	*Prevalence Ratio= 5.00*
172					LT								Infants	Cerebral Palsy	RR= 3.47 [1.29, 9.31]
173					ET								4-19y	Cerebral Palsy	Risk Ratio= 1.75 [1.32, 2.31]
171						X							2-8y	Cerebral Palsy	*Prevalence Ratio= 7.64*
172							X						Infants	Cerebral Palsy	RR= 3.48 [1.86, 6.49]
172							X						Infants	Cerebral Palsy	RR= 1.39 [0.95, 2.03]

Ref	Exposures (size at birth)												Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large					
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th percentile)			
170									X				1-10y	Cerebral Palsy	logit= -0.4x+8.6 [8.4, 8.8] per GA category
														Physical Motor	
174			^										<7y	Motor Development	aSMD= -0.26 [-0.53, 0.006]
174					LT								<7y	Motor Development	aSMD= -0.14 [-0.33, 0.04]
174						X							<7y	Motor Development	aSMD= -0.14 [-0.23, -0.06]
174						X							<7y	Motor Development	aSMD= -0.11 [-0.20, -0.02]
174						^							<7y	Motor Development	aSMD= -0.26 [-0.40,-0.12]
174							BT						<7y	Motor Development	aSMD= -0.01 [-0.10, 0.07]
174							P3						<7y	Motor Development	aSMD= 0.02 [-0.09,0.12]
175			X	X									6-36m	Motor Skills (BSID-II)	Cohen's d= -0.88 [-0.96, -0.80]
175			X	X									5-15y	Motor Skills (MABC)	Cohen's d= -0.65 [-0.70, -0.60]
175			X	X									6-9y	Fine Motor Skills (BOTMP)	Cohen's d= -0.86 [-0.99, -0.73]
175			X	X									8-9y	Gross Motor Skills (BOTMP)	Cohen's d= -0.53 [-0.60, -0.46]
141					X								2-4y	Standardised Score for Motor Skills	SMD= -0.44 [-0.50, -0.37]
141					X								4-11y	Standardised Score for Motor Skills	SMD= -0.59 [-0.89, -0.28]
176			X	X									3-6y	Motor Performance(VMI, MSCA, MABC-2, PDMS BSID-II, PEDI, GD	SMD= -0.71 [-0.80, -0.62]
176			X	X									3.7-5y	Visual Motor Integration (VMI)	SMD= -0.70 [-0.87, -0.54]
176			X	X									4y	Motor (MSCA)	SMD= -0.92 [-1.16, -0.68]
176			X	X									3-6y	Movement Assessment (MABC-2)	SMD= -0.71 [-0.92, -0.50]
176			X	X									5.1-6y	Motor Skills (PDMS)	SMD= -0.71 [-0.98, -0.44]
176			X	X									3-6.2y	Activity Limitation (BSID-II,MABC-1, ASQ, HSCS, AGTE, FTFQ)	RR= 3.39 [2.68, 4.27]
176			X	X									3y	Motor Skills (BSID-II)	RR= 13.94 [3.45, 56.42]
176			X	X									5.5-6.2y	Movement Assessment (MABC-1)	RR= 2.69 [1.72, 4.22]
175			X	X									8-15y	General Motor Proficiency: Battery Composite (BOTMP)	Cohen's d= -0.57 [-0.68, -0.46]
177						^							<10y	Motor Scores	WMD= -6.45 [-9.64, -3.27]
177						^							<10y	Motor Scores	RR= 3.72 [1.32, 10.54]
177						X							10m-5y	Motor Scores	WMD= -4.16 [-5.42, - 2.89]
177						X							<10y	Motor Impairment	RR= 3.32 [1.56, 7.06]
176			X	X									3-6y	Motor Coordination (KTK and VMI)	SMD= -0.47 [-0.76, -0.17]
176			X	X									3-6y	Upper and Lower Limb Coordination (MSCA)	SMD= -0.98 [-1.38, -0.58]
178			X	X									7.5-14.2y	Developmental Coordination Disorder(<5th percentile MABC)	OR= 6.29 [4.37, 9.05]
178			X	X									8-13y	Developmental Coordination Disorder(<5-15th percentile MABC)	OR= 8.66 [3.40, 22.07]
139					X								1-60m	Motor activity (Behaviour)	Cohen's d= -0.07 [-0.25, 0.39]
179					X								0-21y	Neuromusculoskeletal and Movement-Related Functions	Cohen's d= 0.068, p<0.358
179						X							0-21y	Neuromusculoskeletal and Movement-Related Functions	Cohen's d= -0.391, p<0.000
180								X					5-67y	Grip muscle Strength	aβ= 0.86 [0.58, 1.15] per kg increase
180								X					<21	Grip muscle Strength	aβ= 0.48 [0.05, 0.92] per kg increase
175								X					6-36m	Psychomotor Development Outcomes (BSID-II)	R= 0.54, p= 0.008
175									X				6-36m	Psychomotor Development Outcomes (BSID-II)	R= 0.42, p= 0.05
175								X					5-15y	Overall Motor Impairment (MABC)	R= 0.25, p= 0.53
175									X				5-15y	Overall Motor Impairment (MABC)	R= 0.21, p= 0.58
														Cognitive	
														Intellectual Disabilities	
181			X										4-17y	Executive Functioning	Hedge's g= -0.51 [-0.58, -0.44]
181			X										4-10y	Executive Functioning	Hedge's g= -0.51 [-0.60, -0.42]
181			X										11-17y	Executive Functioning	Hedge's g= -0.52 [-0.62, -0.42]
181			X										4-17y	Processing Speed	Hedge's g= -0.49 [-0.60, -0.39]
181			X										4-10y	Processing Speed	Hedge's g= -0.53 [-0.65, -0.41]
181			X										11-17y	Processing Speed	Hedge's g= -0.30 [-0.52, -0.08]
141					X								4-11y	Processing Speed	SMD= -0.53 [-0.66, -0.41]
148					X								2-17y	Inhibition	Cohen's d= 0.25 [0.03, 0.47]
148	26												2-17y	Inhibition	Cohen's d= 0.50 [0.10, 0.89]
182					X	X							4y-11y	Inhibition	SMD= 0.39 [0.55, 0.23]
148					X								2-17y	Planning	Cohen's d= 0.38 [0.08, 0.68]
148	26												2-17y	Planning	Cohen's d= 0.69 [0.50, 0.88]
177						X							≤3y	Developmental Delay (visual, hearing and speech difficulties)	RR= 1.97 [1.41, 2.73]
146			X	X									3-5y	Executive Functions: Global Executive Composite Score	Cohen's d= 0.49 [0.32, 0.66]
148					X								2-17y	Shifting (measured by Trail Making Test)	Cohen's d= 0.50 [0.36, 0.64]

Ref	Exposures (size at birth)												Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large					
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th percentile)			
148					X								2-17y	Shifting (measured by Sorting Tasks)	Cohen's d= 0.10 [-0.06, 0.27]
139					X								1-60m	Inhibition (Behaviour)	Cohen's d= -0.02 [-0.37, 0.32]
139					X								1-60m	Inhibitory Control (Psychological)	Cohen's d= 0.13 [-0.11, 0.37]
139					X								1-60m	Distractibility (Behaviour)	Cohen's d= 0.004 [-0.25, 0.26]
183					ET								3-6y	Cognitive: General	SMD= 0.05 [0.02, 0.08]
182					X	X							5.11-11.2y	Cognitive Flexibility	SMD= 0.51 [0.72, 0.31]
138			^	X									8.2-22.3y	Cognitive Flexibility	Cohen's d= -0.49 [-0.66, -0.33]
151					X								5-14y	Cognitive Test Scores	WMD= 10.85 [9.23, 12.47]
177						^							<10y	Cognitive Score	WMD= -7.23 [-9.20, -5.26]
177						^							<10y	Cognitive Score	RR= 3.59 [1.55, 8.32]
177						X							2m-18y	Cognitive Score	WMD= -6.14 [-8.70, -3.57]
177						X							2m-9y	Cognitive Score	WMD= -4.56 [-6.38, -2.74]
177						X							10-18y	Cognitive Score	WMD= -15.45 [-24.08, -6.83]
151								X					5-14y	Cognitive Test Scores	R^2= 0.51, p<0.001 per g increase
151									X				5-14y	Cognitive Test Scores	R^2= 0.49, p<0.001 per week increase
174			^										<7y	Cognitive Development	aSMD= -0.16 [-0.34, 0.31]
174					LT								<7y	Cognitive Development	aSMD= -0.21 [-0.39, -0.04]
174						^							<7y	Cognitive Development	aSMD= -0.27 [-0.49, -0.07]
174						X							<7y	Cognitive Development	aSMD= -0.13 [-0.20, -0.07]
174						X							<7y	Cognitive Development	aSMD= -0.07 [-0.12, -0.03]
174							BT						<7y	Cognitive Development	aSMD= -0.05 [-0.11, 0.12]
174							P3						<7y	Cognitive Development	aSMD= -0.09 [-0.24, 0.07]
179					X								0-21y	Mental Function	Cohen's d= -0.263, p<0.001
179						X							0-21y	Mental Function	Cohen's d= -0.655, p<0.001
184					X								6-18y	Special Educational Needs	RR= 2.85 [2.12, 3.84]
														Memory	
138			^	X									8-14.9y	Working Memory	Cohen's d= -0.36 [-0.47, -0.20]
141					X								4-11y	Working Memory	SMD= -0.61 [-0.72, -0.50]
141					X								11-18y	Working Memory	SMD= -0.53 [-0.72, -0.34]
182					X	X							4-14y	Working Memory	SMD= 0.52 [0.65, 0.38]
182									X				4.5-12y	Working Memory	β= 0.07 [0.01, 0.13] per wk increase
146			X	X									3-5y	Short-term Verbal Memory (per number of digits recalled)	Cohen's d= -0.49 [-0.75, -0.22]
														Intelligence Quotient (IQ)	
185	X												3-16y	Intelligence Quotient	WMD= -13.9 [-11.5, -16.2]
186		X											4-18y	Intelligence Quotient	WMD= -13.95 [-11.71, -16.20]
187		X											<10y	Intelligence Quotient/Development Quotient	*MD= -6.18*
188			X										5-20.1y	Intelligence Quotient Score	SMD= -0.86 [-0.94, -0.78]
181			X										4-17y	Intelligence Test	Hedge's g= -0.82 [-0.90, -0.74]
181			X										4-10y	Intelligence Test	Hedge's g= -0.86 [-0.99, -0.73]
181			X										11-17y	Intelligence Test	Hedge's g= -0.76 [-0.91, -0.60]
185			v										3-16y	Intelligence Quotient	WMD= -11.4 [-9.7, -13.2]
186				o									5-26y	Intelligence Quotient	WMD= -9.85 [-8.43, -11.28]
187				X									<10y	Intelligence Quotient/Development Quotient	*MD= -7.94*
185					X								3-16y	Intelligence Quotient	WMD= -11.94 [-10.47, -13.42]
141					X								2-31y	Full-Scale Intelligence Quotient	SMD= -0.70 [-0.73, -0.66]
141	X												2-18y	Full-Scale Intelligence Quotient	SMD= -0.78 [-0.85, -0.72]
141			v										2-24y	Full-Scale Intelligence Quotient	SMD= -0.73 [-0.78, -0.67]
141					LT								3-31y	Full-Scale Intelligence Quotient	SMD= -0.24 [-0.35, -0.12]
141					X								2-4y	Full-Scale Intelligence Quotient	SMD= -0.72 [-0.80, -0.65]
141					X								4-11y	Full-Scale Intelligence Quotient	SMD= -0.73 [-0.78, -0.67]
141					X								11-18y	Full-Scale Intelligence Quotient	SMD= -0.73 [-0.85, -0.62]
141					X								5-31y	Performance Intelligence Quotient	SMD= -0.67 [-0.73, -0.60]
141	X												8-18y	Performance Intelligence Quotient	SMD= -0.89 [-1.05, -0.72]
141			v										5-24y	Performance Intelligence Quotient	SMD= -0.65 [-0.73, -0.57]
141					X								4-11y	Performance Intelligence Quotient	SMD= -0.70 [-0.78, -0.61]
141					X								11-18y	Performance Intelligence Quotient	SMD= -0.90 [-1.09, -0.70]
141					X								5-31y	Verbal Intelligence Quotient	SMD= -0.53 [-0.60, -0.47]
141	X												8-18y	Verbal Intelligence Quotient	SMD= -0.67 [-0.83, -0.51]
141			v										5-24y	Verbal Intelligence Quotient	SMD= -0.55 [-0.63, -0.48]

Ref	Exposures (size at birth)													Population	Outcomes	Effect size [confidence interval], direction of association
	Small							Cont		Large						
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th percentile)				
141					LT									12-31y	Verbal Intelligence Quotient	SMD= -0.14 [-0.35, 0.07]
141					X									4-11y	Verbal Intelligence Quotient	SMD= -0.57 [-0.65, -0.48]
141					X									11-18y	Verbal Intelligence Quotient	SMD= -0.49 [-0.65, -0.33]
146			X	X										3-5y	Total Intelligence Quotient Score (per IQ score)	Cohen's d= -0.77 [-0.88, -0.66]
146			X	X										3-5y	Intelligence Quotient Vulnerability	Risk ratio= 3.61 [2.58, 5.06]
183					LT									2-6y	Cognitive: General	aRisk ratio= 1.38 [1.06, 1.79]
183					LT									3-6y	Cognitive: Verbal Intelligence Quotient	aRisk Ratio= 1.34 [0.83, 2.17]
186						X								5-14y	Intelligence Quotient	WMD= -6.83 [-4.76, -8.89]
177						X								<10y	Low Cognitive Score: IQ<25th Percentile or Mental Quotient <85	RR= 2.69 [1.34, 5.39]
177						X								10-18y	Low Cognitive Score: IQ<25th Percentile or Mental Quotient <86	RR= 1.28 [1.02, 1.61]
189						X								14-22.2y	Full-scale Intelligence Quotient Score	MD= -7.63 [-5.95, -9.31]
186						X								4-27y	Intelligence Quotient	WMD= -10.47 [-9.26, -11.68]
186						X								<10y	Intelligence Quotient	WMD= -10.58 [-8.87, -12.30]
186						X								10-18y	Intelligence Quotient	WMD= -9.82 [-7.88, -11.75]
187						X								0-10y	Intelligence Quotient/Development Quotient Score	*MD= -4.14*
187						X								≤2y	Intelligence Quotient/Development Quotient Score	*MD= -0.01 (1.77)*
187						X								2-5y	Intelligence Quotient/Development Quotient Score	*MD= -8.08 (0.86)*
187						X								5-10y	Intelligence Quotient/Development Quotient Score	*MD= -6.9 (2.33)*
142							X							5-19y	Verbal Intelligence Quotient	SMD= -0.26 [-0.36, -0.16]
142							X							5-19y	Performance Intelligence Quotient	SMD= -0.36 [-0.46, -0.25]
188							X							5-20.1y	Intelligence Quotient Score	MD= -0.04 [-0.15, 0.07]
142							X							5-18.1y	Intelligence Quotient	SMD= -0.38 [+T156:T203-0.51, -0.25]
188								X						5-20.1y	Intelligence Quotient Score	MD= 0.02 [0.003, 0.02] per g increase
142								X						5-19y	Total Intelligence Quotient	R= 0.546, p= 0.103
142								X						5-19y	Verbal Intelligence Quotient	R= 0.406, p= 0.497
142								X						5-19y	Performance Intelligence Quotient	R= 0.771, p= 0.127
188									X					5-20.1y	Intelligence Quotient Score	MD= 1.26 [0.52, 2.00] per wk increase
142									X					5-19y	Total Intelligence Quotient	R= 0.509, p= 0.133
142									X					5-19y	Verbal Intelligence Quotient	R= 0.334, p= 0.517
142									X					5-19y	Performance Intelligence Quotient	R= 0.673, p= 0.143
															Communication	
190			X	X										4-12.2y	Expressive Language: Production of Speech	Hedges' g= -0.63 [-0.80, -0.45]
190			X	X										4-6.3y	Expressive Language: Production of Speech	Hedges' g= -0.71 [-0.86, -0.55]
190			X	X										4-12.2y	Receptive Language: Comprehension of Language	Hedges' g= -0.77 [-0.94, -0.60]
190			X	X										4-6.3y	Receptive Language: Comprehension of Language	Hedges' g= -0.83 [-0.97, -0.69]
138			^	X										13.4-23.2y	Verbal Fluency	Cohen's d= -0.57 [-0.82, -0.32]
174			^											<7y	Language Development	aSMD= -0.20 [-0.55, 0.15]
191			X	X										6-8y	Total Language Score	MD= -13.20 [-15.88, -10.51]
191			X	X										5-8y	Receptive Language Score	MD= -6.10 [-8.47, -3.73]
191			X	X										5-8y	Expressive Language Score	MD= -6.16 [-8.49, -3.84]
191			X	X										4-7y	Pragmatics	MD= -8.30 [-20.76, 4.15]
191			X	X										5-8y	Phonological Awareness	MD= -1.46[-1.91, -1.01]
148					X									2-17y	Semantic Fluency	Cohen's d= 0.43 [0.28, 0.59]
148					X									2-17y	Phonemic Fluency	Cohen's d= 0.45 [0.30, 0.60]
148	26													2-17y	Phonemic Fluency	Cohen's d= 0.58 [0. 30, 0.86]
192					X									3-12y	Simple Language Function	Cohen's d= -0.45 [-0.59, -0.30]
192					X									3-12y	Total Complex Language Function	Cohen's d= -0.62 [–0.82, –0.43]
192					X									3-12y	Total Complex Language Function (measured by CELF)	Cohen's d= -0.71 [-0.85, -0.57]
192					X									3-12y	Total Complex Language Function excluding major disabilities	Cohen's d= -0.54 [-1.01, -0.07]
192					X									4-12y	Receptive Language	Cohen's d= -0.69 [-0.82, -0.55]
192					X									4-12y	Expressive Language	Cohen's d= -0.61 [-0.74, -0.47]
183					LT									2-3y	Cognitive: Language	aRR= 1.39 [1.21, 1.60]
174					LT									<7y	Language Development	aSMD= -0.05 [-0.23, 0.13]
174						^								<7y	Language Development	aSMD= -0.28 [-0.60, 0.05]
174						X								<7y	Language Development	aSMD= -0.11 [-0.22,0.00]
174						X								<7y	Language Development	aSMD= -0.05 [-0.10, 0.01]
174							BT							<7y	Language Development	aSMD= -0.06 [-0.18, 0.06]
174							P3							<7y	Language Development	aSMD= 0.03 [-0.13, 0.19]

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	Small							Cont		Large						
	EPT (<28wks)	ELBW (<1000g)	VPT (<32wks)	VLBW (<1500g)	PT (<37wks)	LBW (<2500g)	SGA(<10th percentile)	BW (cont.)	GA (cont.)	Post Term (>42 wks)	HBW (>4000g)	LGA(>90th percentile)				
															Specific Learning Disorder: Language (reading, spelling)	
193	X													5-18y	Reading	MD= -8.54 [-10.52, -6.55]
193			v											5-18y	Reading	MD= -1.42 [-4.58, 1.75]
194			X											6-12.8y	Reading comprehension	Cohen's d= -0.57 [-0.68, -0.46]
194			X											6-12.8y	Reading excluding children with major disabilities	Cohen's d= -0.59 [-1.01, -0.17]
138			^	X										5-20y	Reading	Cohen's d= -0.48 [-0.60, -0.34]
193					X	X								5-18y	Reading: Aggregate Measure of Reading	MD= -7.98 [-13.05, -2.91]
193					X	X								5-18y	Reading: Decoding	MD= -10.18 [-16.83, -3.53]
193					X	X								5-18y	Reading: Word Identification	MD= -7.44 [-9.08, -5.80]
193					X	X								5-18y	Reading: Pseudoword Decoding	MD= -5.37 [-27.41, 16.67]
193					X	X								5-18y	Reading: Reading Comprehension	MD= -7.96 [-12.15, -3.76]
193					X	X								5-8y	Reading	MD= -7.38 [-9.69, -5.07]
193					X	X								9-11y	Reading	MD= -8.93 [-14.42, -3.43]
193					X	X								12-18y	Reading	MD= -3.35 [-6.70, 0.01]
141					X									4-11y	Reading	SMD= -0.67 [-0.87, -0.47]
141					X									11-18y	Reading	SMD= -0.51 [-0.67, -0.35]
193					LT									5-18y	Reading	MD= -8.07 [-14.29, -1.84]
184					X									6-18y	Reading (SD)	SMD= -0.44 (SE 0.10), p<0.001
194			X											6-10.11y	Decoding	Cohen's d Effect= -0.42 [-0.57, -0.27]
194			X											6-10.11y	Decoding (excluding children with intellectual disabilities)	Cohen's d Effect= -0.41 [-0.56, -0.24]
194			X											6-10.11y	Decoding (excluding children with major disabilities)	Cohen's d Effect= -0.43 [-0.54, -0.32]
190			X	X										2-12.2y	Expressive: Semantics	Hedges' g= -0.38 [-0.48, -0.29]
190			X	X										2-8.7y	Expressive: Semantics	Hedges' g= -0.40 [-0.50, -0.31]
190			X	X										5.17-12.2y	Receptive: Semantics	Hedges' g= -0.59 [-0.79, -0.40]
138			^	X										5-17.8y	Spelling	Cohen's d= -0.76 [-1.13, -0.40]
141					X									4-11y	Spelling	SMD= -0.56 [-0.74, -0.38]
141					X									11-18y	Spelling	SMD= -0.51 [-0.92, -0.09]
184					X									6-18y	Spelling (SD)	SMD= -0.52 (SE 0.06), p<0.001
191			X	X										5-8y	Grammar	MD= -4.55 [-8.75, -0.34]
															Specific Learning Disorder: Mathematics	
193	X													5-18y	Mathematics	MD= -11.92 [-14.60, -9.24]
193			v											5-18y	Mathematics	MD= -7.60 [-9.25, -5.96]
138			^	X										5-20y	Mathematics	Cohen's d= -0.60 [-0.74, -0.46]
193					X	X								5-18y	Mathematics: Aggregate Measure of Mathematics	MD= -12.90 [-23.38, -2.43]
193					X	X								5-18y	Mathematics: Mathematical Knowledge	MD= -9.88 [-11.68, -8.08]
193					X	X								5-18y	Mathematics: Calculation	MD= -10.57 [-15.62, -5.52]
193					X	X								5-18y	Mathematics: Mathematical Fluency	MD= -6.89 [-13.54, -0.23]
193					X	X								5-18y	Mathematics: Applied Problems	MD= -11.41 [-17.57, -5.26]
193					X	X								5-8y	Mathematics	MD= -10.42 [-11.83, -9.01]
193					X	X								9-11y	Mathematics	MD= -10.76 [-17.12, -4.41]
193					X	X								12-18y	Mathematics	MD= -8.77 [-11.18, -6.37]
141					X									4-11y	Mathematics	SMD= -0.78 [-1.10, -0.46]
141					X									11-18y	Mathematics	SMD= -0.42 [-0.90, 0.06]
184					X									6-18y	Mathematics: Arithmetic (SD)	SMD= -0.71 (SE 0.09), p<0.001
193					LT									5-18y	Mathematics	MD= -7.98 [-12.81, -3.16]
173					ET									5-10y	Mathematical Difficulties	Risk Ratio= 1.13 [1.05,1.22]
															Others neurological related outcomes	
195					X									3-19y	Non-right Handedness	OR= 2.12 [1.59,2.78]
															Combinations of neurodevelopmental outcomes	
176			X	X										5.1-6.1y	Neurological Dysfunction (Touwen)	RR= 4.55 [1.20, 17.17]

Supplementary material 4 a- Quality of systematic reviews with meta-analyses

Johanna Briggs critical appraisal scores for systematic reviews; additive score of meeting criteria (11 questions)						
5 (low)	6	7	8	9	10	11 (high)
100	124	93	132	193	184	162
89	191	63	97	113	120	86
	107	115	78	117	133	43
	112	167	161	88	145	140
	96	83	80	118	180	150
	148	185	119	114	51	116
	70	187	130	109	181	101
	174	155	128	177	141	188
	137	76	189	178	131	72
	90	98	138	105	159	182
	95	163	149	183	175	87
	127	135	160	108	56	54
		49	64	69	57	52
		71	153	62	58	154
			68	156	67	74
			111	134	166	121
			143	45	164	42
			186	104	91	102
			103	125	122	172
			139	142	192	
			165	151	176	
			82	106	94	
			157	79	195	
			81	190	53	
			44	64	170	
			147	173	59	
			194	47	60	
			146	152	110	
			65	50	136	
			55		61	
			158		171	
			129		168	
					84	

Supplementary material 4 b Publication bias assessed.

Reference	Was the likelihood of publication bias assessed?
42	Yes
43	Yes
44	No
45	Yes
45	No
47	Yes
49	No
50	No
51	Yes
52	Yes
53	Yes
54	Yes
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56	Yes
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59	Yes
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63	No
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69	No
70	No
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74	Yes
76	Yes
78	Yes
79	Yes
80	Yes
81	Yes
82	No
83	No

84	Yes
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178	No
179	Yes
180	Yes
181	Yes

182	Yes
183	No
184	Yes
185	No
186	Yes
187	No
188	Yes
189	Yes
190	Yes
191	No
192	Yes
193	No
194	Yes
195	Yes

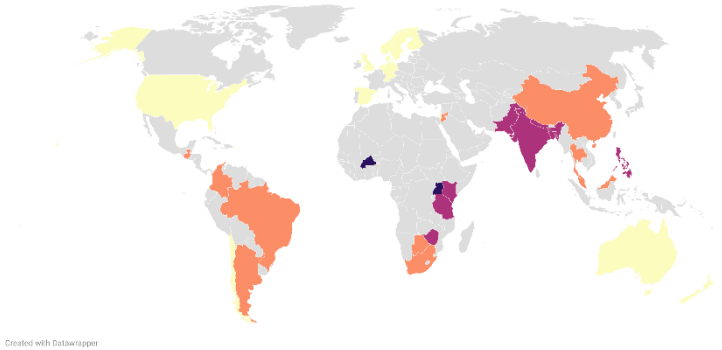
Supplementary material 5 Figure 2- Countries in systematic reviews with metanalyses covering different themes/subthemes.

Maps legends

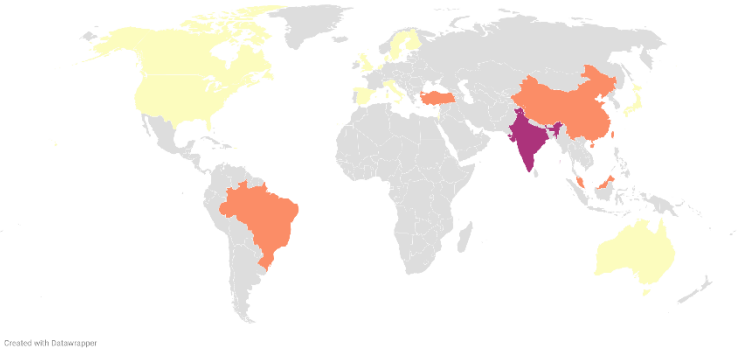
- High-income countries
- Upper middle countries
- Lower middle countries
- Low-income countries

Mortality and Hospitalization

Mortality



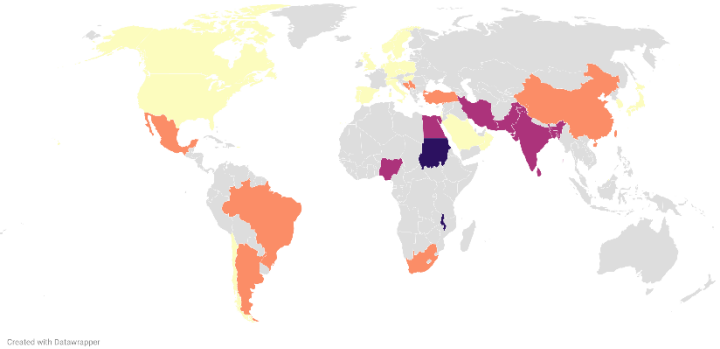
Hospitalization



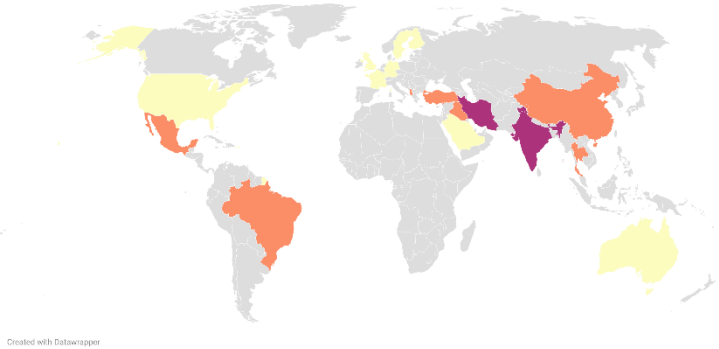
Neonatal Early Childhood Health

Asphyxia

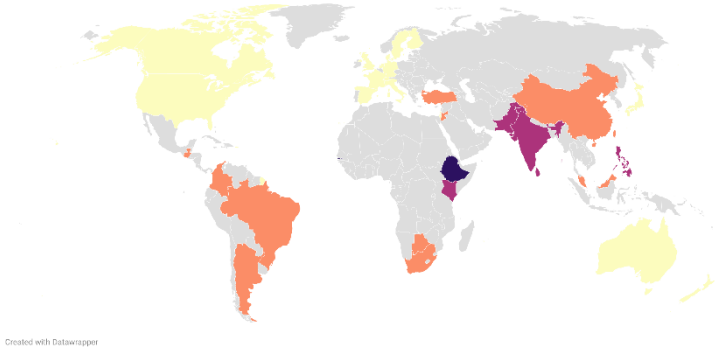
Retinopathy



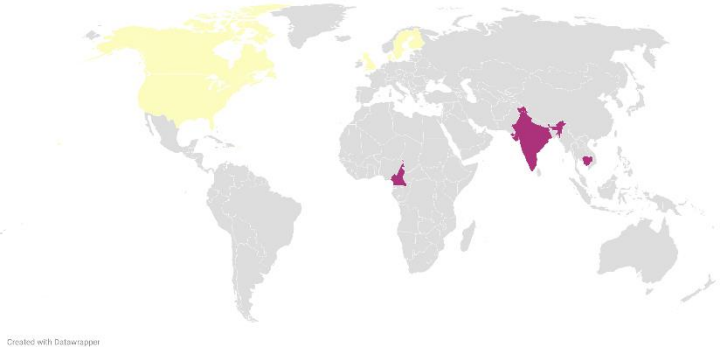
Caries/Oral Health



Infection/ Sepsis



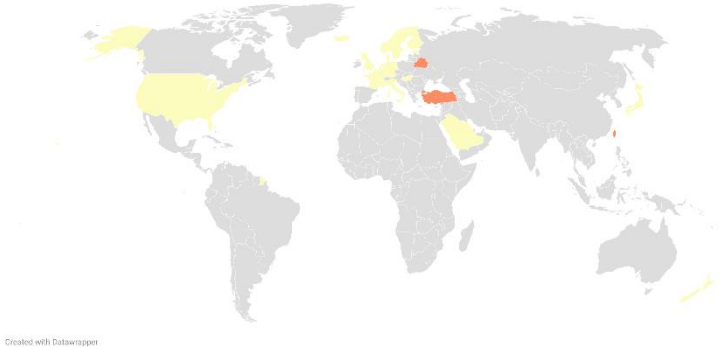
Epilepsy



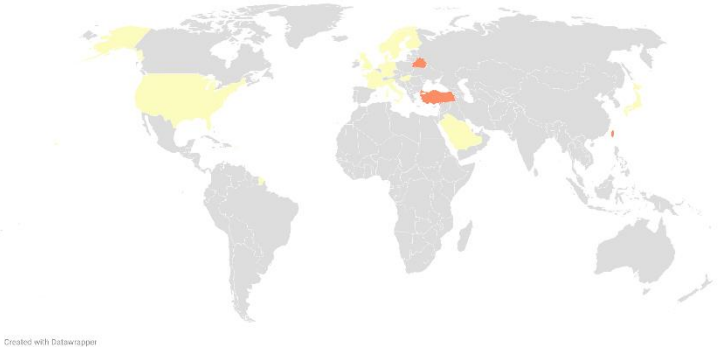
Quality of Life

Lung

Atopic Dermatitis

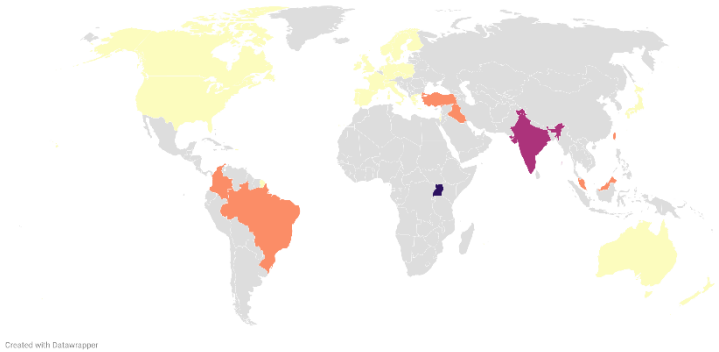


Other Allergies



Lung Function

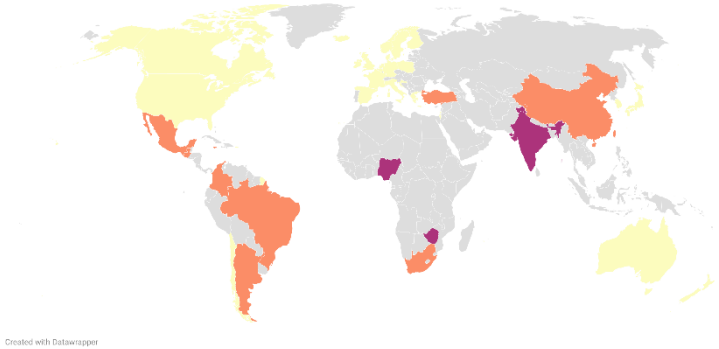
Lung Diseases (Asthma/Wheezing)



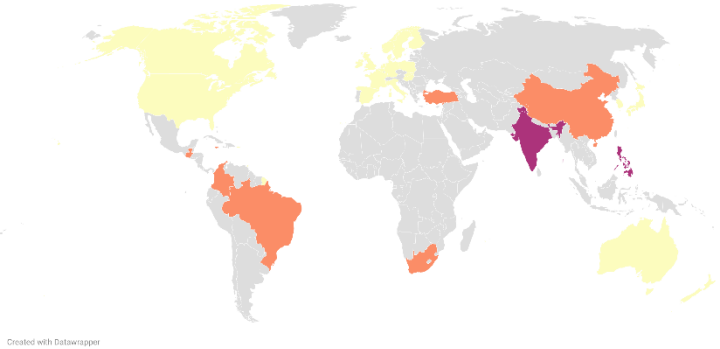
Other Lung Related Outcomes

Chronic Diseases

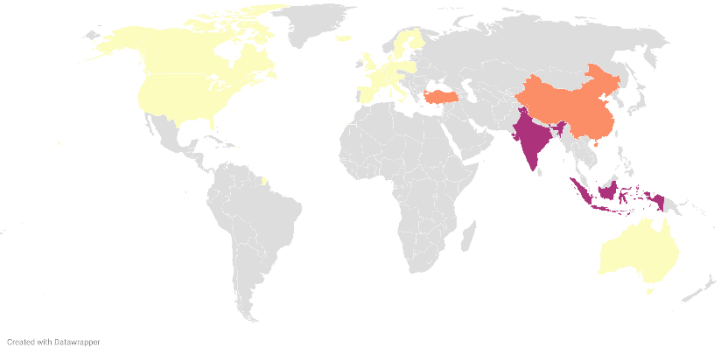
Hypertension



Hypercholesterolaemia

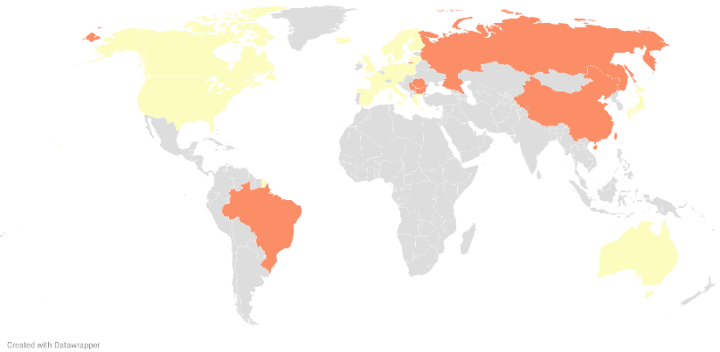


Coronary Heart Disease and Heart Function

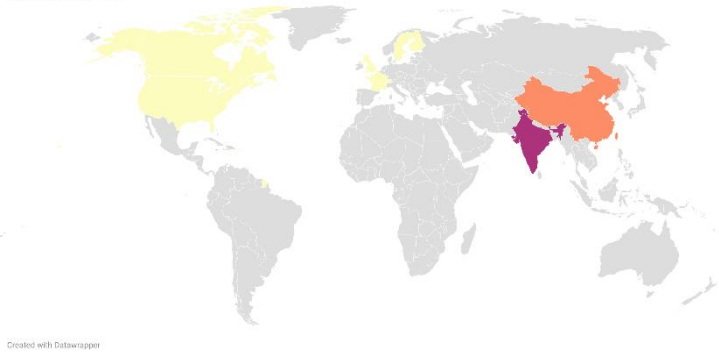


Kidney Related Diseases

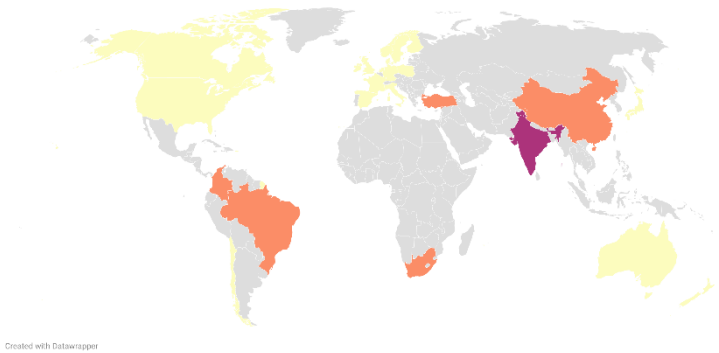
Type 1 Diabetes



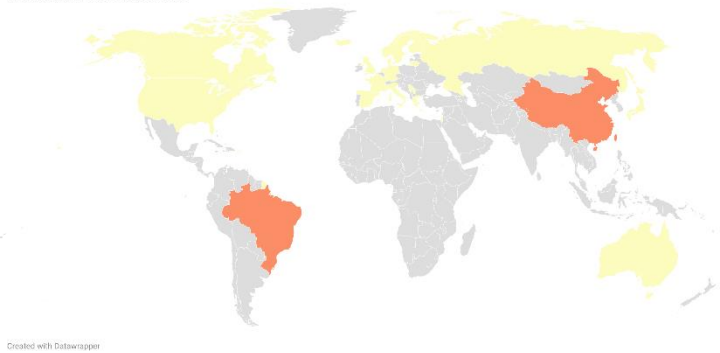
Type 2 Diabetes



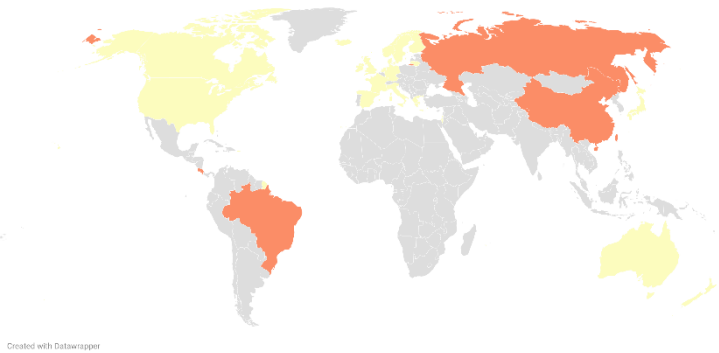
Diabetes Related Measurement



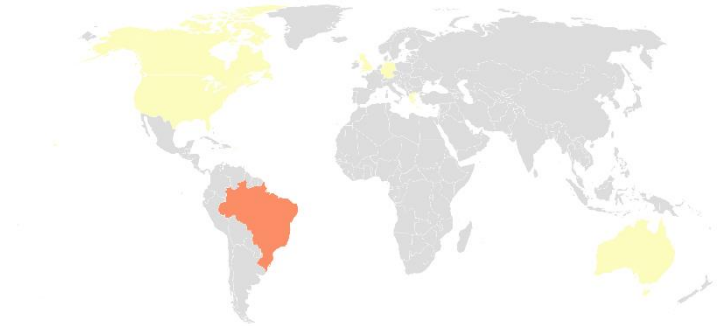
Paediatric CNS Tumours



Leukaemia

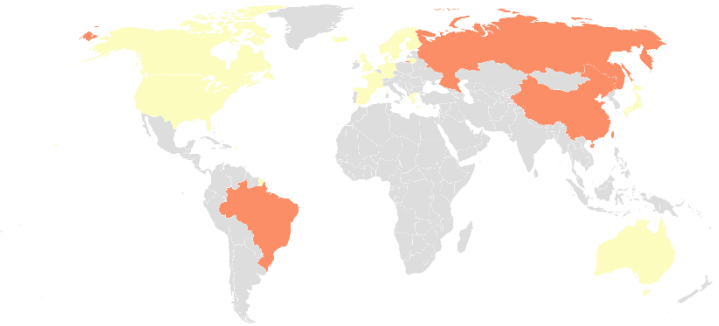


Lymphoma



Created with Datawrapper

Wilm's Tumour (Nephroblastoma)

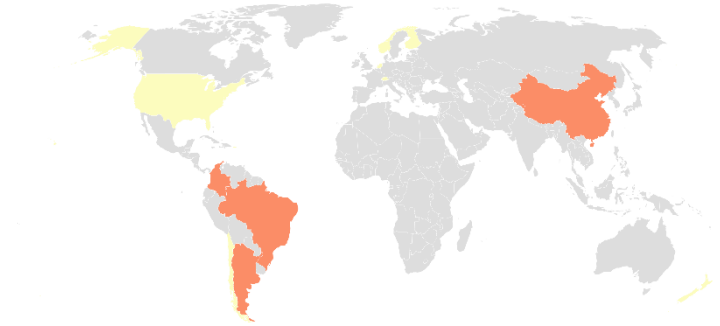


Created with Datawrapper

Other Tumours

Created with Datawrapper

Metabolic Syndrome



Created with Datawrapper

Metabolic Biomarkers

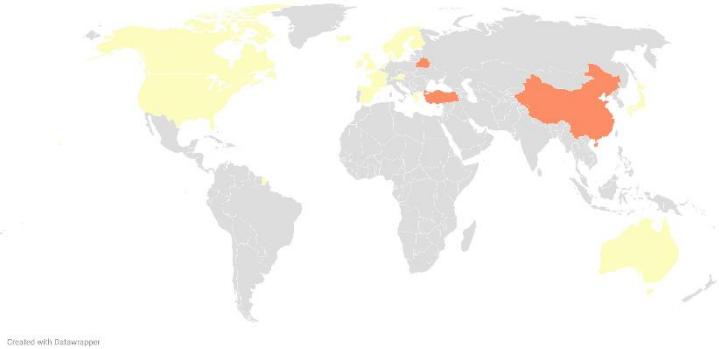
Created with Datawrapper

Developmental

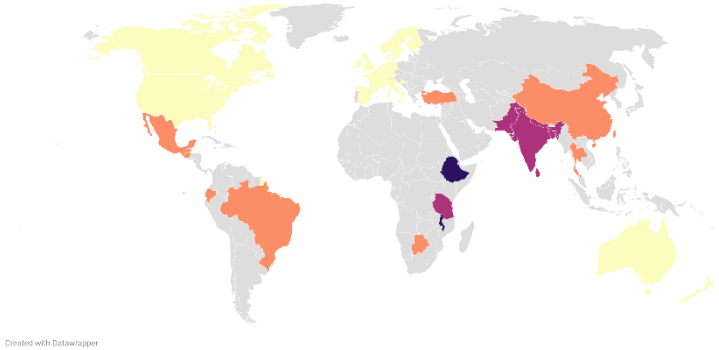
Brain Neurodevelopment

Visuomotor

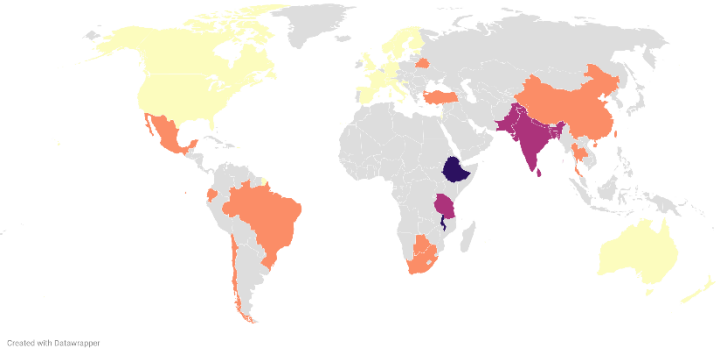
Cerebral Palsy



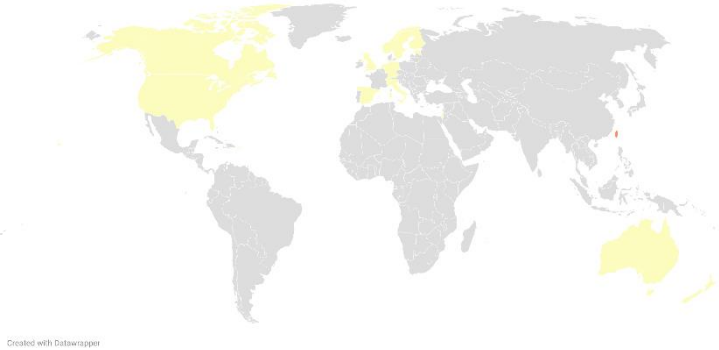
Physical Motor



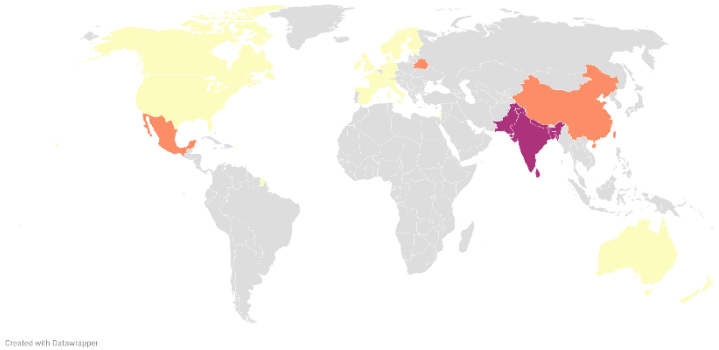
Intellectual Disabilities



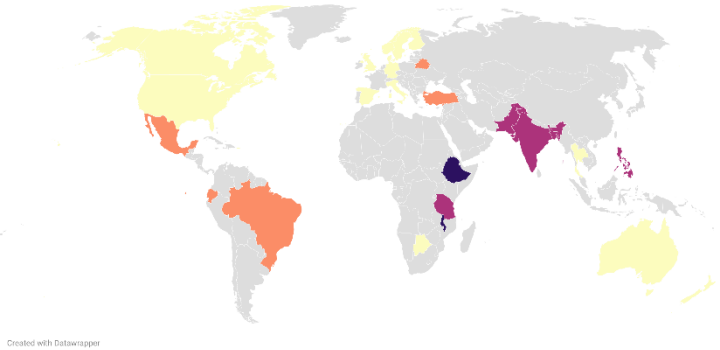
Memory



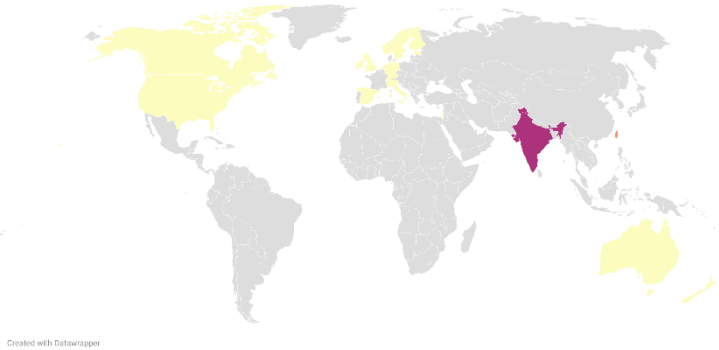
Intelligence Quotient (IQ)



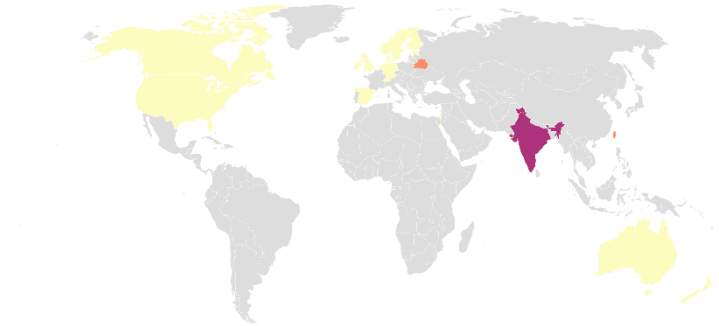
Communication



Specific Learning Disorder: Language



Specific Learning Disorder: Mathematics

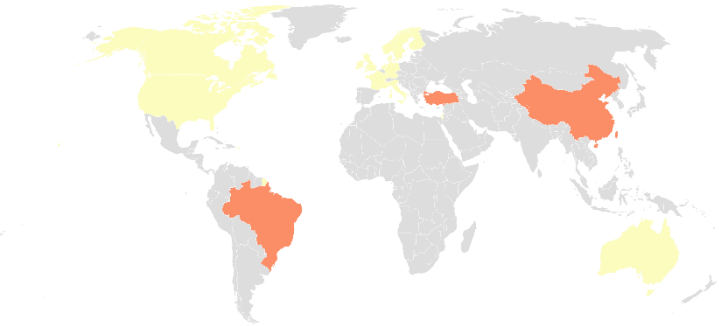


Created with Datawrapper

Others Neurological Outcomes

Created with Datawrapper

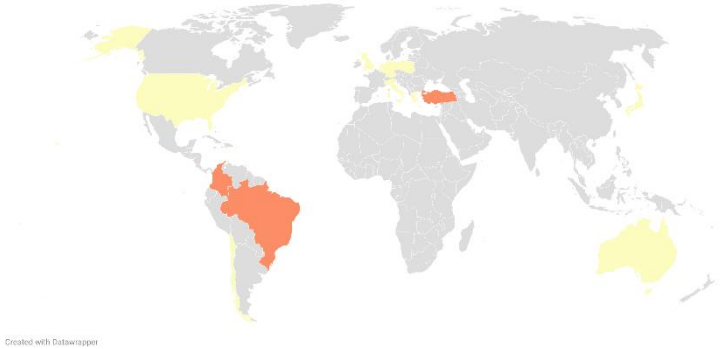
Combinations of Neurodevelopmental Outcomes



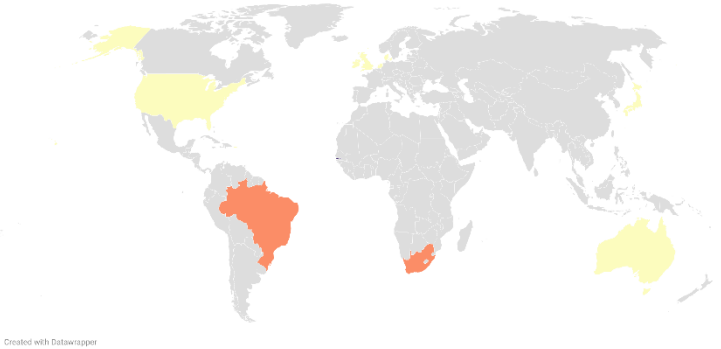
Created with Datawrapper

Growth and Nutrition

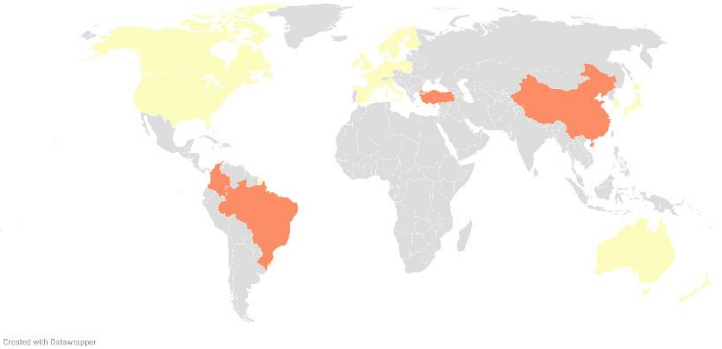
Body Composition



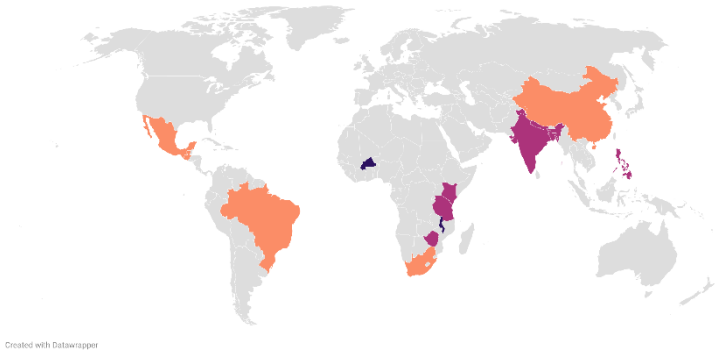
Bone Mineralization



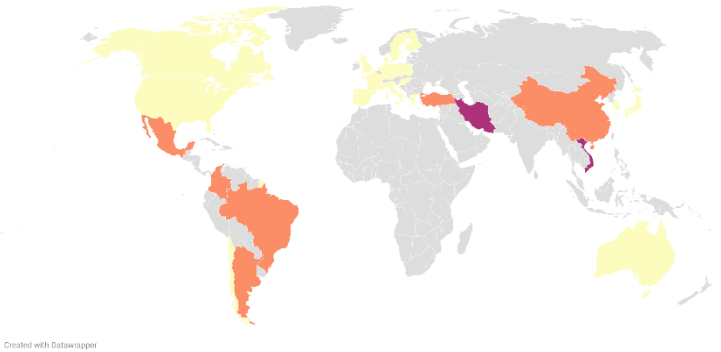
BMI



Undernutrition

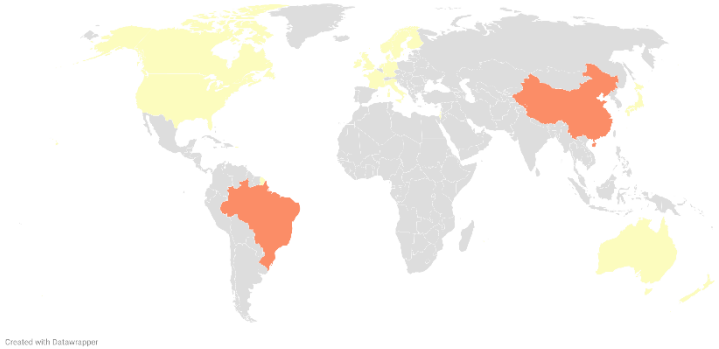


Overnutrition

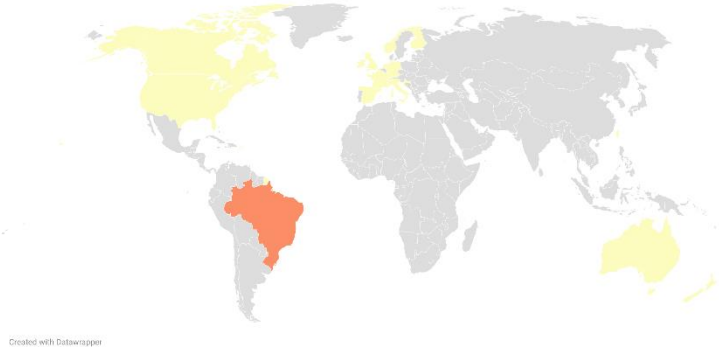


Behavioural and Mental Health

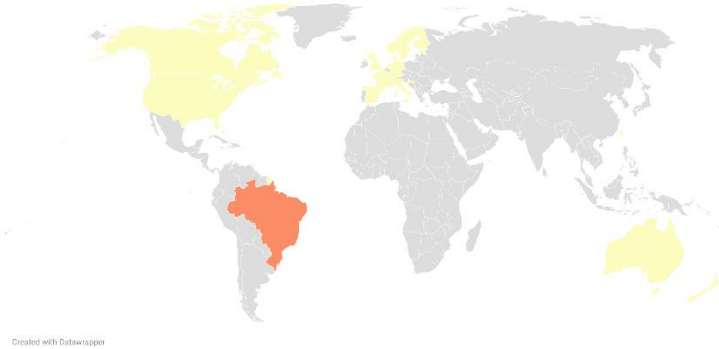
Depressive/ Anxiety Disorders



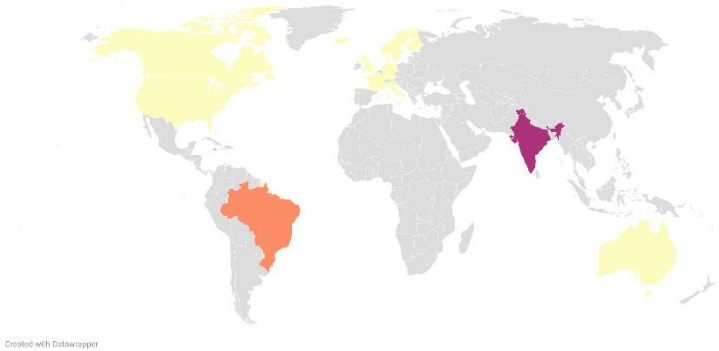
Other Psychological



Behavioural

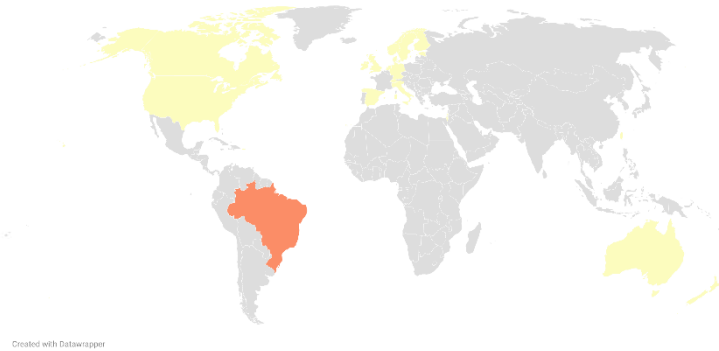


Physical Activity

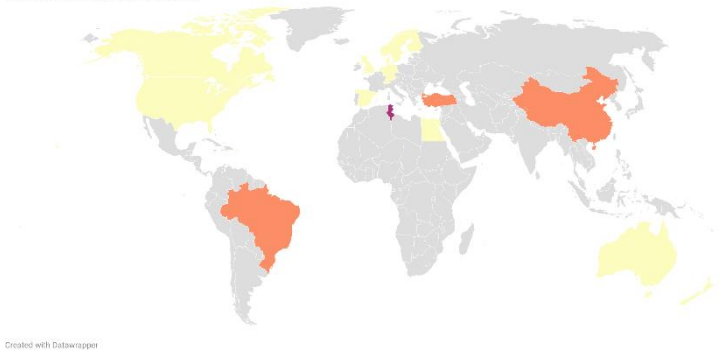


Attention

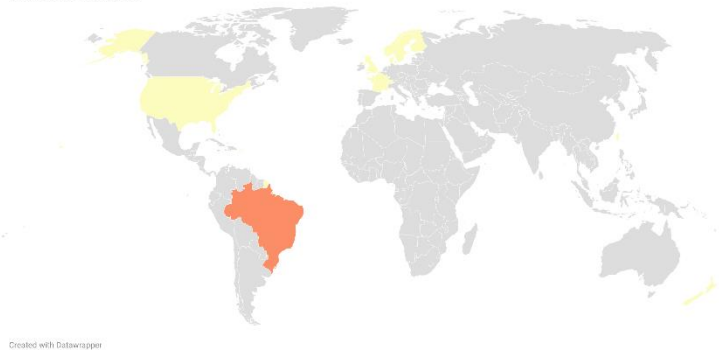
Attention-Deficit/Hyperactivity Disorder



Autism Spectrum Disorder



Suicidal Behaviour



Supplementary material 6—Additional data from two reviews with meta-analyses

Additional data from review number 99

VLDL	Very low density lipoproteins
LDL	Low density lipoproteins
HDL	High-density lipoproteins
IDL	Intermediate density lipoproteins

Metabolic measure	**Association with birth weight**
	Beta [95%CI] per 1-kg lower birth weight; P-value
Lipoprotein subclass total lipids	
Extremely large VLDL [mmol/L]*	0.120 [0.042– 0.198] P=0.0004
Very large VLDL [mmol/L]*	0.149 [0.0628– 0.235] P=0.0004
Large VLDL [mmol/L]*	0.129 [0.0648– 0.193] $P=1\times10^{-5}$
Medium VLDL [mmol/L]*	0.0546 [0.036– 0.0731] $P=2\times10^{-9}$
Small VLDL [mmol/L]	0.0167 [0.0107– 0.0226] $P=7\times10^{-9}$
Very small VLDL [mmol/L]	0.00725 [0.00342– 0.0111] $P=8\times10^{-5}$
LDL [mmol/L]	0.0102 [0.00194– 0.0185] P=0.009
Large LDL [mmol/L]	0.0149 [0.00439– 0.0254] P=0.003
Medium LDL [mmol/L]	0.0108 [0.00429– 0.0173] P=0.0006
Small LDL [mmol/L]	0.00787 [0.00366– 0.0121] $P=8\times10^{-5}$
Very large HDL [mmol/L]	-0.00905 [-0.015– -0.00315] P=0.002
Large HDL [mmol/L]	-0.0177 [-0.0266– -0.00875] $P=6\times10^{-5}$
Medium HDL [mmol/L]	0.00355 [-0.00222– 0.00932] P=0.12
Small HDL [mmol/L]	0.00956 [0.00514– 0.014] $P=1\times10^{-5}$
Lipoprotein particle size	
VLDL particle size [nm]	0.115 [0.0739– 0.156] $P=2\times10^{-8}$
LDL particle size [nm]	-0.00922 [-0.0144– -0.00408] P=0.0002
HDL particle size [nm]	-0.016 [-0.0226– -0.00942] $P=9\times10^{-7}$
Apolipoproteins	
Apolipoprotein B [g/L]	0.0128 [0.00675– 0.0188] $P=2\times10^{-5}$
Apolipoprotein A-I [g/L]	0.00222 [-0.00393– 0.00838] P=0.31
Apolipoprotein B/	0.00721 [0.00325– 0.0112]
apolipoprotein A-I	P=0.0004
Cholesterol	
Total Cholesterol [mmol/L]	0.038 [0.00984– 0.0661] P=0.006
Non-HDL Cholesterol [mmol/L]	0.0461 [0.0206– 0.0716] P=0.0003
Remnant Cholesterol [mmol/L]	0.0222 [0.011– 0.0333] $P=7\times10^{-5}$
VLDL Cholesterol [mmol/L]	0.0164 [0.0094– 0.0234] $P=3\times10^{-6}$
IDL Cholesterol [mmol/L]	0.0057 [0.000356– 0.0111] P=0.03
LDL Cholesterol [mmol/L]	0.023 [0.00762– 0.0384] P=0.002
HDL Cholesterol [mmol/L]	-0.00803 [-0.0178–0.00171] P=0.10
Esterified Cholesterol [mmol/L]	0.0278 [0.00719– 0.0484] P=0.005

Free Cholesterol [mmol/L]	0.00783 [-0.000334– 0.016] P=0.06
Esterification [%]	0.0935 [0.0373– 0.15] P=0.002
Triglycerides	
Total Triglycerides [mmol/L]*	0.0432 [0.0301– 0.0563] $P=4\times10^{-11}$
VLDL Triglycerides [mmol/L]*	0.0601 [0.0418– 0.0784] $P=1\times10^{-11}$
IDL Triglycerides [mmol/L]	0.0019 [0.000895– 0.00291] $P=4\times10^{-5}$
LDL Triglycerides [mmol/L]	0.00482 [0.00267– 0.00697] $P=8\times10^{-7}$
HDL Triglycerides [mmol/L]	0.000845 [-0.00033– 0.0020] P=0.17
Phospholipids	
Total Phospholipids [mmol/L]	0.0151 [0.000414– 0.0298] P=0.04
VLDL Phospholipids [mmol/L]	0.0127 [0.00786– 0.0175] $P=4\times10^{-8}$
IDL Phospholipids [mmol/L]	0.00218 [6.1e-06– 0.00436] P=0.02
LDL Phospholipids [mmol/L]	0.00539 [0.000773– 0.01] P=0.01
HDL Phospholipids [mmol/L]	-0.00676 [-0.0164– 0.00291] P=0.20
Phosphoglycerides [mmol/L]	0.0213 [0.00938– 0.0333] P=0.0003
Cholines [mmol/L]	0.0235 [0.0119– 0.0351] P=0.0001
Sphingomyelin [mmol/L]	0.0024 [-0.000185– 0.00498] P=0.05
Fatty acids	
Total Fatty Acids [mmol/L]	0.197 [0.122– 0.272] $P=5\times10^{-8}$
Saturated Fatty Acids [mmol/L]	0.082 [0.0521– 0.112] $P=1\times10^{-8}$
Monounsaturated Fatty Acids [mmol/L]	0.062 [0.0356– 0.0884] $P=5\times10^{-7}$
Polyunsaturated Fatty Acids [mmol/L]	0.0492 [0.0254– 0.0731] $P=1\times10^{-5}$
Omega-6 Fatty Acids [mmol/L]	0.0422 [0.0208– 0.0637] $P=4\times10^{-5}$
Linoleic Acid [mmol/L]	0.0388 [0.0208– 0.0568] $P=1\times10^{-5}$
Omega-3 Fatty Acids [mmol/L]	0.00665 [0.00302– 0.0103] P=0.0001
Docosahexaenoic Acid [mmol/L]	0.00185 [0.000217– 0.00349] P=0.01
Fatty acid ratios, relative to total fatty acids	
Saturated Fatty Acids [%]	0.11 [0.0456– 0.174] P=0.006
Monounsaturated Fatty Acids [%]	0.104 [0.0103– 0.198] P=0.009
Polyunsaturated Fatty Acids [%]	-0.195 [-0.292– -0.0979] $P=4\times10^{-5}$
Omega-6 Fatty Acids [%]	-0.187 [-0.279– -0.095] $P=2\times10^{-5}$
Linoleic Acid [%]	-0.117 [-0.215– -0.0193] P=0.007
Omega-3 Fatty Acids [%]	-0.00389 [-0.029– 0.0212] P=0.83
Docosahexaenoic Acid [%]	-0.00745 [-0.0194– 0.00449] P=0.29
Unsaturation Degree	-0.0031 [-0.0053– -0.000891] P=0.006
Amino acids	
Alanine [µmol/L]	5.26 [3.14– 7.38] $P=1\times10^{-6}$
Glutamine [µmol/L]	-3.45 [-5.9– -0.993] P=0.003
Glycine [µmol/L]	-3.48 [-5.57– -1.4] P=0.002
Histidine [µmol/L]	0.072 [-0.294– 0.438] P=0.88
Isoleucine [µmol/L]	1.18 [0.742– 1.62] $P=7.1\times10^{-8}$
Leucine [µmol/L]	1.05 [0.593– 1.52] $P=7\times10^{-7}$
Valine [µmol/L]	2.37 [1.2– 3.55] $P=3\times10^{-5}$
Phenylalanine [µmol/L]	0.435 [0.113– 0.757] P=0.0006

Tyrosine [µmol/L]	0.466 [0.092– 0.839] P=0.01
Glycolysis and gluconeogenesis	
Glucose [mmol/L]*	0.00367 [-0.000407– 0.00775] P=0.07
Lactate [mmol/L]	0.0225 [0.00971– 0.0352] P=0.0005
Pyruvate [µmol/L]	2.12 [1.29– 2.95] $P=5\times10^{-6}$
Glycerol [µmol/L]	1.93 [0.828– 3.03] P=0.0002
Ketone bodies	
Acetoacetate [µmol/L]*	0.0177 [-0.00279– 0.0381] P=0.10
Beta-hydroxybutyrate [µmol/L]	0.129 [-1.16– 1.42] P=0.77
Miscellaneous	
Citrate [µmol/L]	0.157 [-0.509– 0.823] P=0.75
Acetate [µmol/L]	0.442 [0.0941– 0.789] P=0.02
Creatinine [µmol/L]	-0.194 [-0.519– 0.131] P=0.33
Albumin [cu]	0.219 [-0.0485– 0.487] P=0.52
Inflammatory markers	
Glycoprotein Acetyls [mmol/L]	0.019 [0.0125– 0.0255] $P=4\times10^{-9}$
C-Reactive Protein [mg/L]*	0.0518 [0.00349– 0.1] P=0.04
Liver function markers	
Alanine Aminotransferase [cu]*	0.00282 [0.000213– 0.00542] P=0.12
Gamma-glutamine Aminotransferase [cu]*	0.00548 [0.00282– 0.00814] $P=4.6\times10^{-5}$
Aspartate Aminotransferase [cu]*	0.00461 [0.00153– 0.00768] P=0.003
Bilirubin [cu]*	-0.00321 [-0.0070– 0.00055] P=0.10
Hormone related	
Testosterone (Men) [nmol/L]	-0.28 [-0.643– 0.0843] P=0.13
Testosterone (Women) [nmol/L]	-0.00196 [-0.0571– 0.0531] P=0.98
Sex-hormone Binding Globulin (Men) [nmol/L]	-1.3 [-2.06– -0.546] P=0.0007
Sex-hormone Binding Globulin (Women) [nmol/L]	-0.526 [-2.72– 1.67] P=0.63
Insulin [IU/L]*	0.0426 [0.0282– 0.0569] $P=5\times10^{-9}$

Additional data from review number 101

LV E/A	Left ventricular Doppler early/late diastolic mitral inflow
LV E/e'	Left ventricular early Doppler inflow velocity/ peak early diastolic tissue velocity ratio
LV strain	Left ventricular strain
LVe'	Left ventricular peak early diastolic tissue velocity
LVEF	Left ventricular ejection fraction
LVMI	Left ventricular mass indexed to body surface area
LVs'	Left ventricular peak systolic tissue velocity
LVSVI	Left ventricular stroke volume indexed to body surface area
RV	Right ventricular
RVs'	Right ventricular peak systolic tissue velocity
TAPSE	Tricuspid annular plane systolic excursion

Exposures	**Outcomes**	
<32 wk versus T	LV E/A	WMD= -0.20 [-0.31, -0.09]
<32 wk versus T	LV E/A	WMD= 0.00 [-0.06, 0.06]
<32 wk versus T	LV E/A	WMD= 0.04 [-0.05, 0.13]
<32 wk versus T	LV E/e'	WMD= 0.40 [0.19, 0.61]
<32 wk versus T	LV E/e'	WMD= 1.73 [0.96, 2.50]
<32 wk versus T	LV E/e'	WMD= 2.55 [1.82, 3.27]
<32 wk versus T	LV E/e'	WMD= 0.57 [0.35, 0.79]
<32 wk versus T	LV strain, %	WMD= 0.06 [-2.27, 2.40]
<32 wk versus T	LV strain, %	WMD= 2.68 [0.10, 5.25]
<32 wk versus T	LV strain, %	WMD= 1.80 [1.08, 2.51]
<32 wk versus T	LV strain, %	WMD= -0.57 [-1.52, 0.37]
<32 wk versus T	LVe', cm/s	WMD= -1.12 [-1.54, -0.70]
<32 wk versus T	LVe', cm/s	WMD= -1.93 [-2.46, -1.39]
<32 wk versus T	LVe', cm/s	WMD= -1.48 [-2.63, -0.32]
<32 wk versus T	LVe', cm/s	WMD= -1.28 [-1.82, -0.74]
<32 wk versus T	LVEF, %	WMD= 1.15 [0.35, 1.95]
<32 wk versus T	LVEF, %	WMD= -2.48 [-5.78, 0.82]
<32 wk versus T	LVEF, %	WMD= -1.97 [-4.38, 0.44]
<32 wk versus T	LVEF, %	WMD= 1.67 [-0.48, 3.82]
<32 wk versus T	LVMI, g/m^2	WMD= -2.71 [-4.74, -0.68]
<32 wk versus T	LVMI, g/m^2	WMD= 4.68 [-1.25, 10.61]
<32 wk versus T	LVMI, g/m^2	WMD= -4.84 [-7.47, -2.21]
<32 wk versus T	LVs', cm/s	WMD=-0.61 [-0.88, -0.34]
<32 wk versus T	LVs', cm/s	WMD=-0.93 [-1.15, -0.71]
<32 wk versus T	LVs', cm/s	WMD= -0.10 [-0.60, 0.40]
<32 wk versus T	LVs', cm/s	WMD= -0.73 [-1.05, -0.41]
<32 wk versus T	LVSVI, mL/m^2	WMD= -0.80 [-4.83, 3.22]
<32 wk versus T	RV strain, %	WMD= 3.02 [2.23, 3.82]
<32 wk versus T	RV strain, %	WMD= 3.87 [1.54, 6.20]
<32 wk versus T	RV strain, %	WMD= 3.01 [0.81, 5.22]
<32 wk versus T	RV strain, %	WMD= 3.01 [0.81, 5.22]
<32 wk versus T	RVs', cm/s	WMD=-1.52 [-2.23, -0.80]
PT versus T	LV E/A	WMD=-0.15 [-0.20, -0.10]
PT versus T	LV E/A	WMD= 0.01 [-0.07, 0.05]

PT versus T	LV E/e’	WMD= 0.36 [0.10, 0.61]
PT versus T	LV E/e’	WMD= 0.81 [-0.18, 1.81]
PT versus T	LV E/e’	WMD= 2.10 [0.98, 3.21]
PT versus T	LV E/e’	WMD= 0.57 [0.35, 0.79]
PT versus T	LV strain, %	WMD= 0.70 [-1.13, 2.54]
PT versus T	LV strain, %	WMD= 2.53 [0.08, 4.99]
PT versus T	LV strain, %	WMD= 1.55 [0.89, 2.21]
PT versus T	LVe’, cm/s	WMD=-1.05 [-1.46, -0.65]
PT versus T	LVe’, cm/s	WMD= -1.19 [-1.76, -0.62]
PT versus T	LVe’, cm/s	WMD= -0.87 [-1.50, -0.23]
PT versus T	LVEF, %	WMD= 0.79 [0.02, 1.55]
PT versus T	LVEF, %	WMD= -2.89 [-5.18, -0.61]
PT versus T	LVEF, %	WMD= -1.58 [-3.60, 0.44]
PT versus T	LVMI, g/m^2	WMD= -1.82 [-2.71, -0.92]
PT versus T	LVMI, g/m^2	WMD=3.31 [0.45, 6.17]
PT versus T	LVs’, cm/s	WMD=-0.34 [-0.83, 0.14]
PT versus T	LVs’, cm/s	WMD=-0.81 [-1.13, -0.49]
PT versus T	LVs’, cm/s	WMD=0.13 [-0.52, 0.78]
PT versus T	RV strain, %	WMD=3.02 [2.23, 3.82]
PT versus T	RV strain, %	WMD= 2.94 [0.54, 5.35]
PT versus T	RV strain, %	WMD=2.73 [0.89, 4.57]
PT versus T	RVs’, cm/s	WMD= -0.96 [-1.30, -0.62]

Additional secondary outcomes available in review 101 LV stroke volume index (LVSVI), LV fractional shortening (LVFS), MAPSE, LV end diastolic volume index (LVEDVI), LV posterior wall thickness at end-diastole (LVPWd), LV end-diastolic dimension (LVEDD), LV length, TAPSE, RVe', and LVEF by all methods

Supplementary material 7- Prisma checklist 2020

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Title page
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Background paragraph 3
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Background paragraph 4
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Methods paragraph 4, 6, 7
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Methods: paragraph 3
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Supplementary material 2
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Methods: paragraphs 4 and 7
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Methods: paragraph 5-7 No data were sought from investigators
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g., for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	No outcomes were pre-specified. Figure 2 and Table 1 show the range of outcomes identified.
	10b	List and define all other variables for which data were sought (e.g., participant and intervention characteristics, funding sources). Describe any assumptions	Methods: paragraph 5

Section and Topic	Item #	Checklist item	Location where item is reported
		made about any missing or unclear information.	
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Methods: paragraph 6 describes quality assessment and c approach; results are in Supplementary material 3
Effect measures	12	Specify for each outcome the effect measure(s) (e.g., risk ratio, mean difference) used in the synthesis or presentation of results.	Tables 1 and 2
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g., tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Not applicable
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Tables 1-3
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g., subgroup analysis, meta-regression).	None conducted
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	None conducted
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	None conducted
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Narrative synthesis, use of colour coding
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Figure 1
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	
Study	17	Cite each included study and present its characteristics.	Tables 1 and 2

Section and Topic	Item #	Checklist item	Location where item is reported
characteristics			
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g., confidence/credible interval), ideally using structured tables or plots.	Tables 1 and 2
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g., confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	None conducted
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	None conducted
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	None conducted
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Discussion paragraphs 1-5
	23b	Discuss any limitations of the evidence included in the review.	Discussion paragraph 6
	23c	Discuss any limitations of the review processes used.	Discussion paragraph 6
	23d	Discuss implications of the results for practice, policy, and future research.	Recommendations paragraph 1-4
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	PROSPERO CRD42021268843w
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	LSHTM Data Compass
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	

Section and Topic	Item #	Checklist item	Location where item is reported
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	This research was supported by the Nagasaki University "Doctoral Program for World-leading Innovative and Smart Education" for Global Health, KYOIKU KENKYU SHIEN KEIHI ("the Stipend"). Ministry of Education, Culture, Sports, Science and Technology (MEXT). The funder had no role in study design, data collection, data analysis, data interpretation, or writing of the manuscript.
Competing interests	26	Declare any competing interests of review authors.	No competing interests
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	All materials used are in Appendices and LSHTM Data Compass https://datacompass.lshtm.ac.uk/