

## Additional File 1: Summary of existing data by participant group

Table A1.1 Summary of existing data by participant group

	Mother	Child	Father
<b>Recruited</b>	12453 mothers (across 13776 pregnancies)	13858 children	3353 fathers
<b>Pregnancy/birth</b>			
Socio-demographics and health questionnaire at recruitment	10519 mothers (across 11395 pregnancies)		3287 fathers (across 3387 pregnancies)
Stored biosamples	<p><i>Pregnancy bloods:</i> 11625 mothers Stored as serum, EDTA plasma, red blood cells, whole blood.</p> <p><i>DNA:</i> 10531 mothers (across 11436 pregnancies)</p> <p><i>Pregnancy urine:</i> 6996 pregnancies</p>	<p><i>Cord bloods:</i> 9303 children Stored as serum, EDTA plasma, red blood cells, whole blood</p> <p><i>DNA:</i> 9158 children</p> <p><i>Infant serum:</i> 1688 children at 12m 1536 children at 24m 664 children at 48m</p>	<p><i>DNA:</i> 2938 fathers (across 3022 pregnancies)</p>
Blood biomarkers	10685 mothers (across 11625 pregnancies)	7910 children	
Metabolite profiles	<p><i>High throughput NMR:</i> 10574 mothers fasted blood samples 24-28 weeks gestation (across 11479 pregnancies)</p> <p><i>Mass-spectrometry:</i> 3000 mothers fasted blood samples 24-28 weeks gestation, 1000 of which paired with child</p>	<p><i>High throughput NMR:</i> 7890 children at birth (cord-blood) 1690 children at 12m 1536 children at 24m</p> <p><i>Mass-spectrometry:</i> 1000 children paired with mother</p>	

	<b>Mother</b>	<b>Child</b>	<b>Father</b>
Genome-wide SNPs, sequencing, and DNA methylation	<i>Genome-wide SNPs:</i> 10531 mothers  <i>Exome sequencing:</i> 3005 mothers  <i>White blood cell DNA methylation:</i> 1000 mothers on samples taken 24-28 weeks gestation (paired with child)	<i>Genome-wide SNPs:</i> 9158 children  <i>Exome sequencing:</i> 262 children  <i>White blood cell DNA methylation:</i> 1000 children taken from cord-blood (paired with mother)	<i>Genome-wide SNPs:</i> 1283 fathers
<b>Anthropometry</b> Counts of participants measured in time periods relative to child age, taken from multiple sources: Primary and secondary care records, health visiting records, National Child Measurement Programme, school nurse visits, and researcher-led clinics.			
Pregnancy booking Pregnancy recruitment Pregnancy 3 <sup>rd</sup> trimester Child birth Child at 1m to 9m Child at 10m to 15m Child at 16m to 21m Child at 22m to 33m Child at 34m to 45m Child at 46m to 69m	11532 mothers 10146 mothers 5681 mothers  1282 mothers 1495 mothers 1217 mothers 1136 mothers 1049 mothers	13656 children 12809 children 4074 children 2433 children 8256 children 1049 children 10188 children	
<b>Routine data linkage</b>			
Glucose tolerance test at pregnancy recruitment	11231 mothers (12331 across pregnancies)		
Maternity data linkage	<i>Maternity electronic patient record:</i> 13361 pregnancies  <i>Abstraction from maternity notes:</i> 10939 pregnancies  <i>Ultrasound scans:</i> 13248 pregnancies	<i>Maternity electronic patient record:</i> 13525 children	
Primary care records	12311 mothers	13776 children	3296 fathers
Secondary care records	12342 mothers	12469 children	

	<b>Mother</b>	<b>Child</b>	<b>Father</b>
Education records		11667 children	
<b>Child sub-cohort follow-ups</b>			
Behavioural correlates of obesity survey (6, 12, 18, 24, 36 month follow-ups)		1763 children	
Allergies and infections survey (12, 24, 48 month follow-ups)		2553 children at 12m 2067 children at 24m 2594 children at 48m	
Cognitive assessments at school entry (4-5 years)		3444 children	