

Gestational Duration Summary Data (2019)

We are releasing the summary data from our fetal genome-wide meta-analyses of gestational duration, early preterm (<34 completed weeks of gestation), preterm (<37 weeks), and postterm (≥ 42 weeks) birth, combining data from the Lundbeck Foundation Initiative for Integrative Psychiatric Research (iPSYCH) study and the early growth genetics (EGG) consortium. Data from the iPSYCH study were imputed up to the 1000 Genomes Project (Phase 3) reference panel and data from the EGG Consortium were imputed up to the HRC reference panel.

Four genome-wide association meta-analyses were conducted (see paper for full details):

1. Gestational duration: this is the fetal genetic effect on quantile transformed gestational duration.
2. Early preterm birth: this is the fetal genetic effect on the dichotomous outcome early preterm birth (< 34 weeks) versus controls (≥ 39 weeks and <42 weeks).
3. Preterm birth: this is the fetal genetic effect on the dichotomous outcome preterm birth (< 37 weeks) versus controls (≥ 39 weeks and <42 weeks).
4. Postterm birth: this is the fetal genetic effect on the dichotomous outcome postterm birth (≥ 42 weeks) versus controls (≥ 39 weeks and <42 weeks).

Gestational duration in days was regressed on infant sex and the resulting residuals were quantile transformed to a standard normal distribution before being tested for association with fetal SNP genotypes using linear regression. The dichotomous outcomes early preterm birth, preterm birth, and postterm birth were analyzed using logistic regression.

Summary files provide information on chromosome, genomic position (NCBI build 37), rsID, effect allele, other allele, beta, standard error, P value, heterogeneity P value, sample size, and Marker name at approximately 7.5 million variants passing quality control.

Dataset Details

We have four sets of summary files:

1. Fetal GWAS meta-analysis of gestational duration in up to 84,689 individuals; the data as a gzipped text file can be downloaded from the iPSYCH web page:
2. Fetal GWAS meta-analysis of early preterm birth in up to 1,139 cases and controls; the data as a gzipped text file can be downloaded from the iPSYCH web page.
3. Fetal GWAS meta-analysis of preterm birth in up to 4,775 cases and controls; the data as a gzipped text file can be downloaded from the iPSYCH web page.
4. Fetal GWAS meta-analysis of postterm birth in up to 7,888 cases and controls; the data as a gzipped text file can be downloaded from the iPSYCH web page.

The files can be downloaded from the iPSYCH web page: <https://ipsych.au.dk/downloads/>

Acknowledging The Data

When using data from the downloadable meta-analyses results please acknowledge the source of the data as follows:

Data on gestational duration has been contributed by the EGG Consortium and the iPSYCH Consortium and has been downloaded from <https://ipsych.au.dk/downloads/>

In addition to the above acknowledgement, please cite the paper below:

Liu X, Helenius D, Skotte L, Beaumont RN, Wielscher M, Geller F, Juodakis J, Ma-hajan A, Bradfield JP, Lin FTJ, Vogelezang S, Bustamante M, Ahluwalia TS, Pitkänen N, Wang CA, Bacelis J, Borges MC, Zhang G, Bedell BA, Rossi RM, Skogstrand K, Peng S, Thompson WK, Appadurai V, Lawlor DA, Kalliala I, Power C, McCarthy MI, Boyd HA, Marazita ML, Hakonarson H, Hayes MG, Scholtens DM, Rivadeneira F, Jaddoe VWV, Vinding RK, Bisgaard H, Knight BA, Pahkala K, Rai-takari O, Helgeland Ø, Johansson S, Njølstad PR, Fadista J, Schork AJ, Nudel R, Miller DE, Chen X, Weirauch MT, Mortensen PB, Børghlum AD, Nordentoft M, Mors O, Hao K, Ryckman KK, Hougaard DM, Kottyan LC, Pennell CE, Lyytikäinen L-P, Bønnelykke K, Vrijheid M, Felix JF, Lowe WL, Grant SFA, Hyppönen E, Jacob-sson B, Jarvelin M-R, Muglia LJ, Murray JC, Freathy RM, Werge TM, Melbye M, Buil A, Feenstra B. Variants in the fetal genome near pro-inflammatory cytokine genes on 2q13 associate with gestational duration. *Nature Communications* 2019 doi:10.1038/s41467-019-11881-8