Supplementary Table 1. Genotyping quality control data by study

Study	Genotyping method	If GWAS: directly genotyped (DG), or imputed (I)?	Call Rate (%)	HWE P value	% Samples Duplicated for Genotyping	% Concordance of Duplicated Samples
ALSPAC Mothers	KASPar[a]	-	98.20	0.25	8.0	99.9
ALSPAC Offspring	KASPar[a]	-	98.10	0.81	2.0	100.0
BWHHS	KASPar[a]	-	98.21	0.58	0.5	100.0
DNBC_GOYA	Illumina 610-Quad	DG	100.00	0.84	-	-
DNBC_PTB Mothers	Illu660W-Quad	DG	99.95	0.35	2.1	100.0
DNBC_PTB Offspring	Illu660W-Quad	DG	99.95	0.25	-	-
EFSOCH Mothers	KASPar[a]	-	94.90	0.91	12.0	99.5
EFSOCH Offspring	KASPar[a]	-	93.40	0.10	12.0	99.5
Generation R Mothers	Taqman	-	97.79	0.07	2.3	99.4
Generation R Offspring	Ilumina 610-Quad	DG	99.96	0.18	-	-
HAPO Mothers	KASPar[a]	-	99.28	0.58	3.3	99.7
HAPO Offspring	KASPar[a]	-	99.28	0.66	3.3	99.7
MIDSPAN	Taqman	-	94.50	0.92	-	-
MoBa Mothers	Illu660W-Quad	DG	99.95	0.49	-	-
MoBa Offspring	Illu660W-Quad	DG	99.95	0.77	-	-
NCCGP Mothers	KASPar[a]	-	91.90	0.08	8.1	100.0
NCCGP Offspring	KASPar[a]	-	96.40	0.58	7.8	100.0
NFBC1966	Illumina Human CNV370DUO Analysis Bead Chip	DG	99.98	0.95	-	-
Raine Mothers	KASPar[a]	-	99.95	0.27	-	-
Raine Offspring	Illu660W-Quad	DG	99.95	0.40	-	-
1958BC_T1DGC	Illumina 550K Infinium	DG	100.00	0.27	-	-
1958BC_WTCCC2	Affymetrix Genome-wide Human SNP Array 6.0	DG	99.62	0.56	-	-

[a]KASPar is the system of fluorescence-based competitive allele-specific PCR used by KBiosciences (Hoddesdon, UK; www.kbioscience.co.uk).

Supplementary Table 2. Associations between maternal rs1051730 genotype and birth weight in the individual studies, stratified by pregnancy smoking status
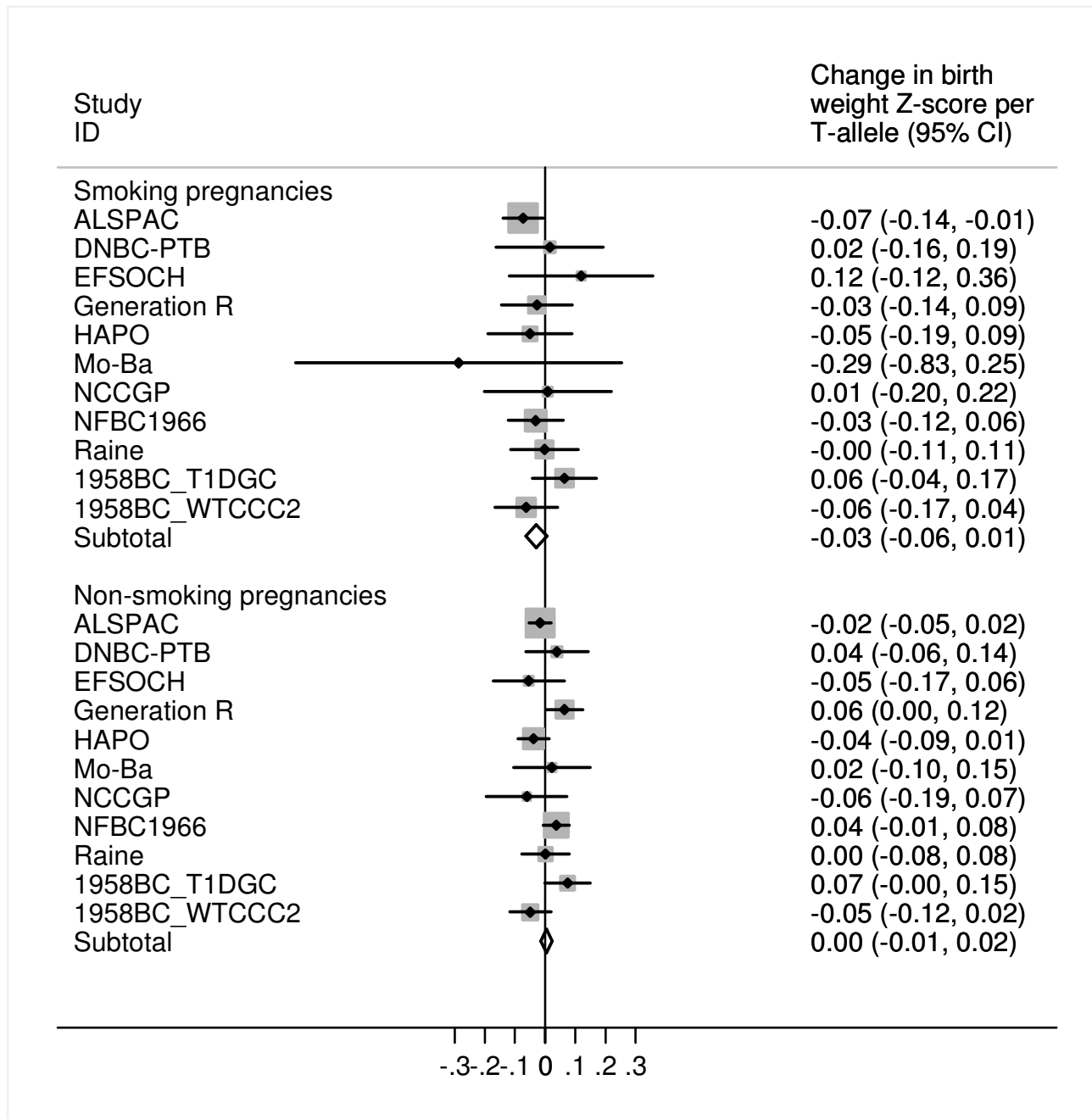
Study	Total no. of participants	Total *n* by genotype			Per-T allele change in BW *Z*-score (SE)[a]	P value[a]
		CC	CT	TT		
Non-smoking pregnancies						
ALSPAC	4687	2105	2059	523	0.007 (0.020)	0.739
BWHHS	1702	770	720	212	0.030 (0.033)	0.358
DNBC-GOYA	1338	592	620	126	-0.007 (0.039)	0.854
DNBC-PTB	731	324	339	68	0.056 (0.054)	0.299
EFSOCH	650	297	290	63	-0.028 (0.053)	0.598
Generation R	2512	1155	1072	285	0.057 (0.026)	0.031
HAPO	3113	1426	1365	322	-0.012 (0.025)	0.627
MIDSPAN[b]	408	175	192	41	-0.047 (0.057)	0.418
MoBa	660	308	287	65	0.105 (0.057)	0.068
NFBC1966	1748	798	766	184	-0.026 (0.033)	0.439
NCCGP	425	202	175	48	-0.010 (0.066)	0.129
Raine	904	434	373	97	-0.018 (0.040)	0.654
1958BC_T1DGC	551	270	216	65	0.09 (0.057)	0.113
1958BC_WTCCC2	582	257	255	70	0.054 (0.058	0.354
Totals	**20011**	**9113**	**8729**	**2169**		
Smoking pregnancies						
ALSPAC	1636	701	738	197	-0.064 (0.034)	0.064
BWHHS	509	226	236	47	-0.086 (0.065)	0.187
DNBC-GOYA	466	216	187	63	-0.046 (0.060)	0.441
DNBC-PTB	260	119	112	29	-0.051 (0.088)	0.566
EFSOCH	158	78	62	18	-0.043 (0.111)	0.701
Generation R	872	378	389	105	-0.05 (0.044)	0.254
HAPO	548	248	250	50	-0.037 (0.061)	0.540
MIDSPAN[b]	292	149	113	30	-0.008 (0.0074)	0.913
MoBa	103	39	54	10	-0.147 (0.155)	0.347
NFBC1966	320	141	142	37	-0.003 (0.08)	0.972

NCCGP	142	61	57	24	-0.022 (0.091)	0.808
Raine	302	128	136	38	0.009 (0.059)	0.883
1958BC_T1DGC	285	125	125	35	0.026 (0.084)	0.762
1958BC_WTCCC2	337	129	160	48	-0.040 (0.073)	0.583
Totals	**6230**	**2738**	**2761**	**731**		
Smoking during first trimester only						
ALSPAC	313	158	127	28	0.215 (0.09)	0.012
DNBC-GOYA	154	79	61	14	-0.046 (0.115)	0.686
DNBC-PTB	60	32	22	6	-0.049 (0.206)	0.811
EFSOCH	48	23	21	4	-0.111 (0.170)	0.52
Generation R	303	143	121	39	-0.005 (0.073)	0.946
NFBC1966	110	53	47	10	0.171 (0.128)	0.186
Raine	45	13	26	6	0.185 (0.155)	0.240
1958BC_T1DGC	82	37	35	10	-0.135 (0.137)	0.329
1958BC_WTCCC2	112	52	48	12	-0.022 (0.120)	0.858
Totals	**1227**	**590**	**508**	**129**		
Smoking beyond first trimester						
ALSPAC	1049	428	485	136	-0.099 (0.041)	0.016
DNBC-GOYA	312	137	126	49	-0.021 (0.069)	0.764
DNBC-PTB	178	76	82	20	0.009 (0.104)	0.9303
EFSOCH	91	40	37	14	-0.006 (0.148)	0.968
Generation R	569	235	268	66	-0.065 (0.054)	0.234
NFBC1966	210	88	95	27	-0.048 (0.010)	0.6312
Raine	215	98	91	26	-0.060 (0.070)	0.393
1958BC_T1DGC	203	88	90	25	0.083 (0.100)	0.41
1958BC_WTCCC2	225	77	112	36	0.002 (0.091)	0.98
Totals	**3052**	**1267**	**1386**	**399**		

[a]Association statistics are from linear regression of offspring birth weight Z-score against maternal rs1051730 genotype (coded as 0, 1 or 2 T-alleles), with offspring sex and gestational age as covariables.

[b]In the MIDSPAN study, analysis allowed for multiple offspring per mother: $n = 1479$ pregnancies (896 non-smoking; 583 smoking)

Supplementary Figure 1: Meta-analysis plot of the association between fetal rs1051730 genotype and offspring birth weight, stratified by maternal smoking status (non-smoking vs. smoking mothers). There was weak evidence of heterogeneity between the strata ($P = 0.105$). In the smoking pregnancies, the effect size equates to a -14 g (95%CI: -29, 5 g) lower birth weight per T-allele. In the non-smoking pregnancies, the estimated birth weight difference per T-allele was 5 g (95% CI: -5, 9 g).

Study ID		Change in birth weight Z-score per T-allele (95% CI)
Smoking pregnancies		
ALSPAC		-0.07 (-0.14, -0.01)
DNBC-PTB		0.02 (-0.16, 0.19)
EFSOCH		0.12 (-0.12, 0.36)
Generation R		-0.03 (-0.14, 0.09)
HAPO		-0.05 (-0.19, 0.09)
Mo-Ba		-0.29 (-0.83, 0.25)
NCCGP		0.01 (-0.20, 0.22)
NFBC1966		-0.03 (-0.12, 0.06)
Raine		-0.00 (-0.11, 0.11)
1958BC_T1DGC		0.06 (-0.04, 0.17)
1958BC_WTCCC2		-0.06 (-0.17, 0.04)
Subtotal		-0.03 (-0.06, 0.01)
Non-smoking pregnancies		
ALSPAC		-0.02 (-0.05, 0.02)
DNBC-PTB		0.04 (-0.06, 0.14)
EFSOCH		-0.05 (-0.17, 0.06)
Generation R		0.06 (0.00, 0.12)
HAPO		-0.04 (-0.09, 0.01)
Mo-Ba		0.02 (-0.10, 0.15)
NCCGP		-0.06 (-0.19, 0.07)
NFBC1966		0.04 (-0.01, 0.08)
Raine		0.00 (-0.08, 0.08)
1958BC_T1DGC		0.07 (-0.00, 0.15)
1958BC_WTCCC2		-0.05 (-0.12, 0.02)
Subtotal		0.00 (-0.01, 0.02)

-.3 -.2 -.1 0 .1 .2 .3

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