

## Sensitivity analyses: childhood

For each model, at CpGs with  $P < 1e-5$ , we conducted a leave-one-out analysis (systematically leaving one cohort at a time out of the meta-analysis) and plotted the resulting effect estimates and 95% confidence intervals (pages 3-22).

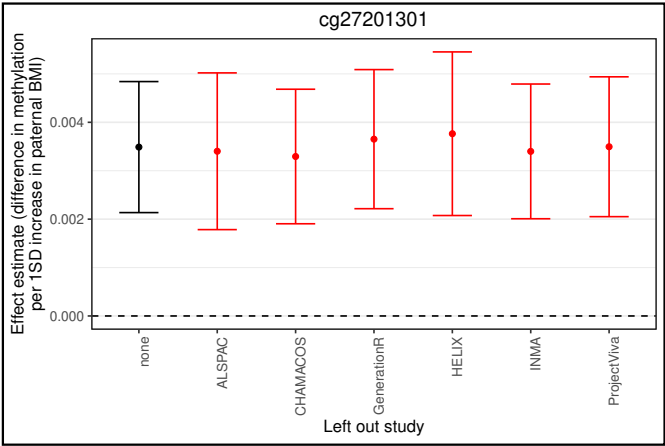
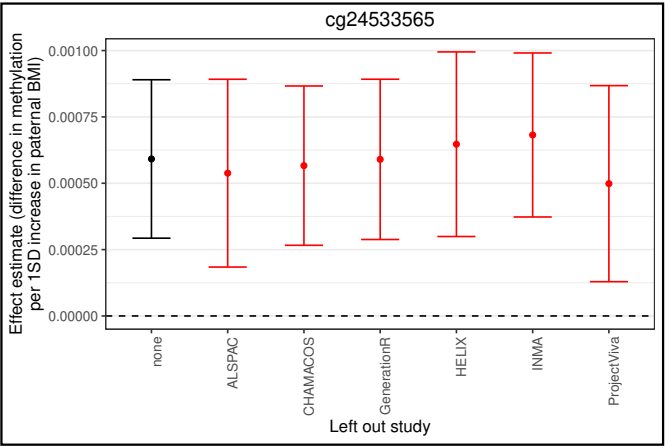
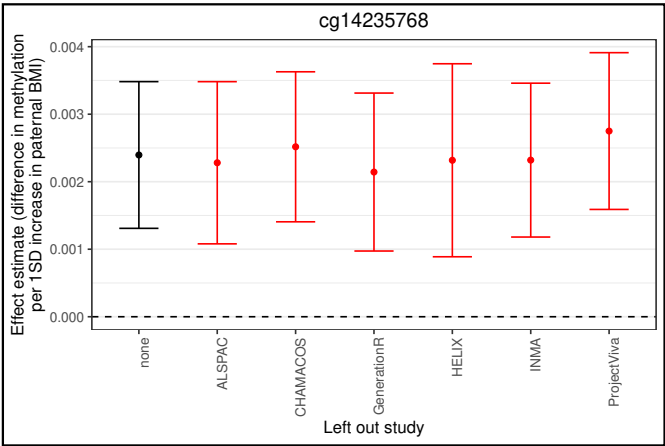
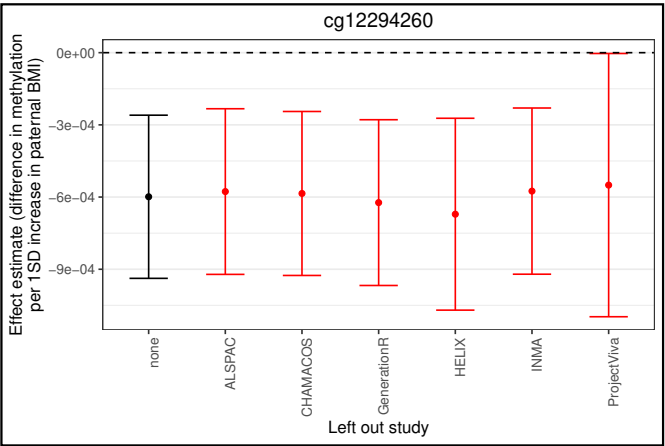
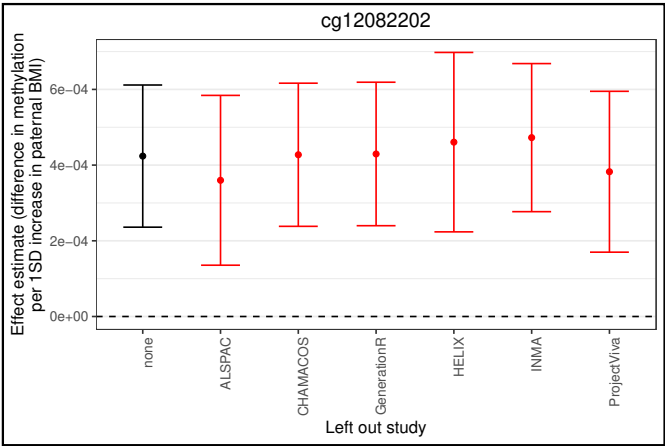
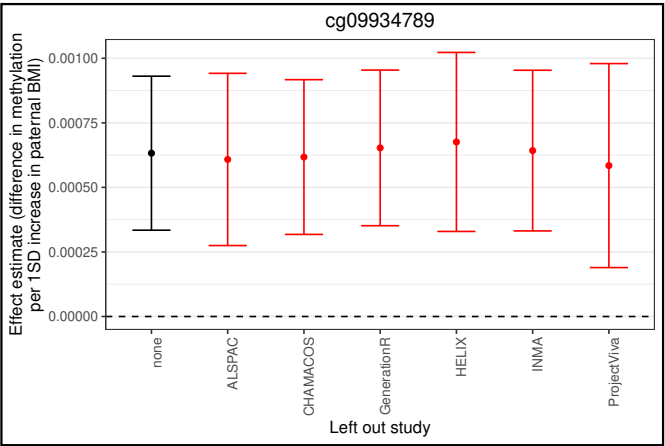
For the childhood timepoint, we also conducted a meta-regression to assess the strength of association between age at methylation sample on the meta-EWAS effect estimates. The coefficients, confidence intervals and p-values for these analyses are provided in the tables on pages 23-25

### Contents:

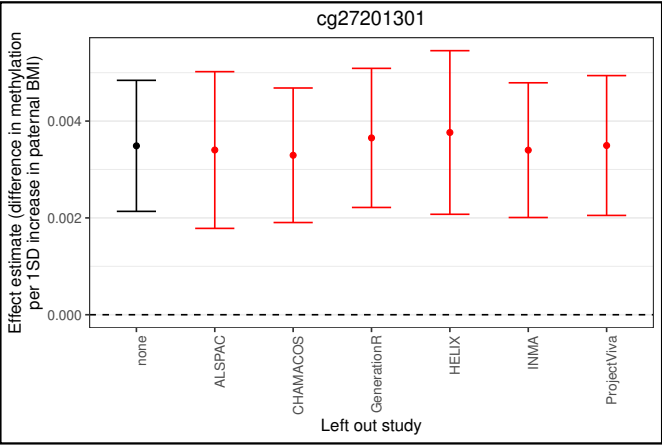
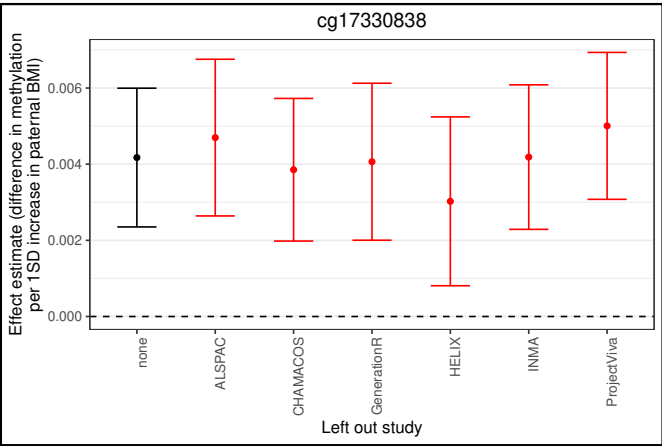
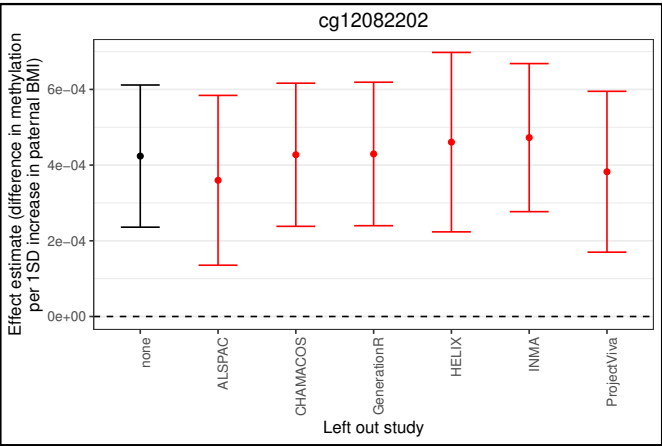
#### Leave one out plots:

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- Meta-regression tables: page 23-25

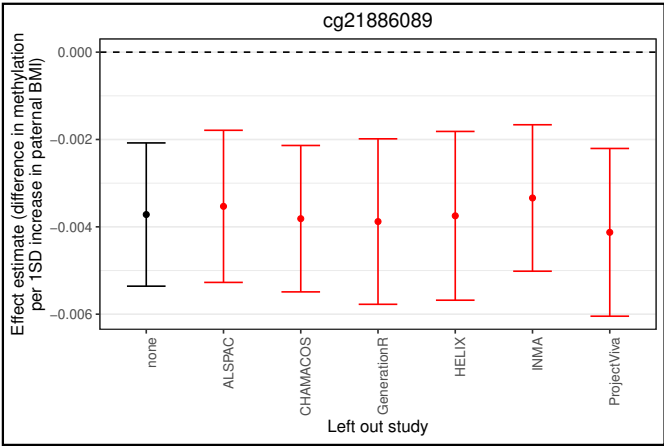
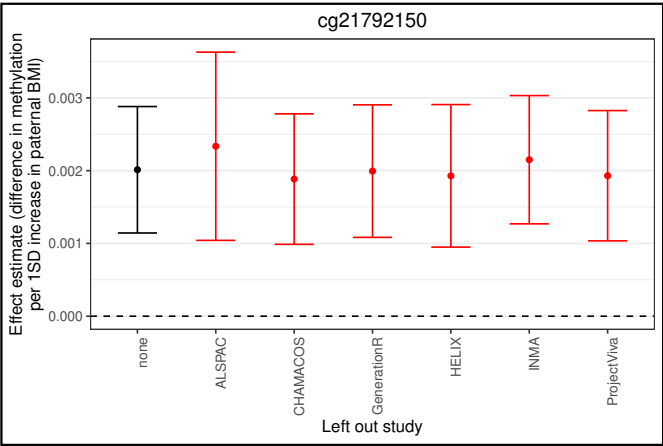
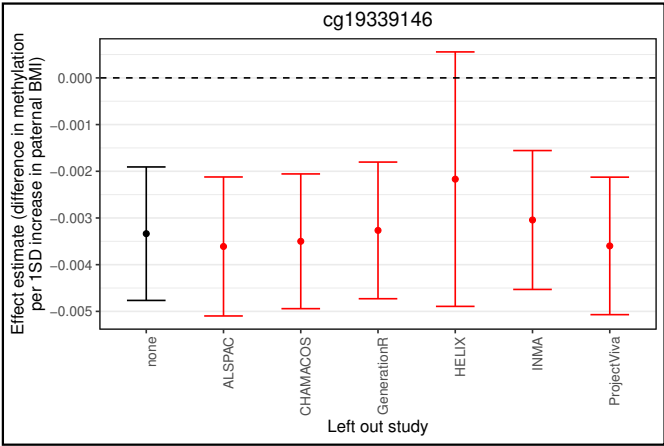
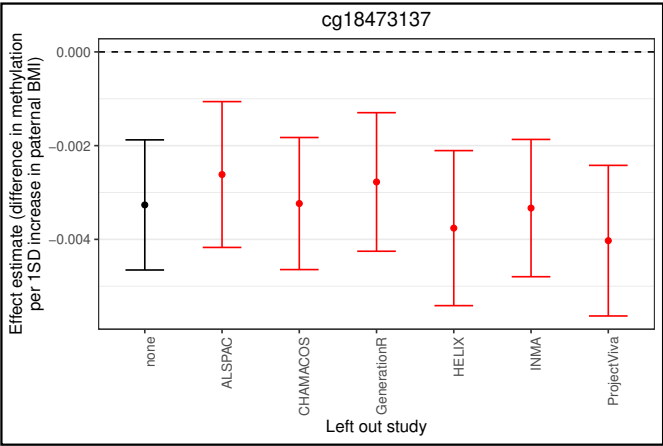
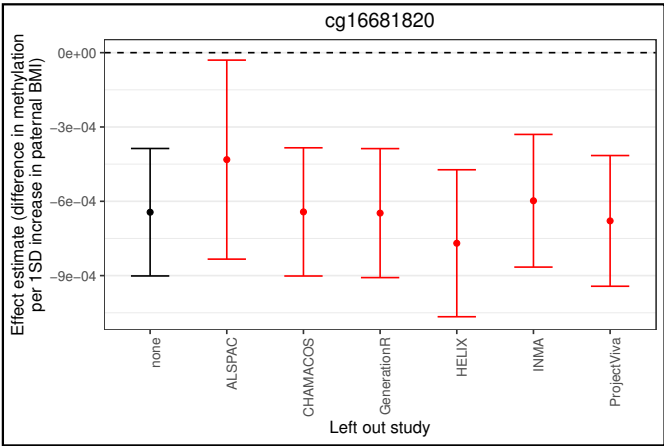
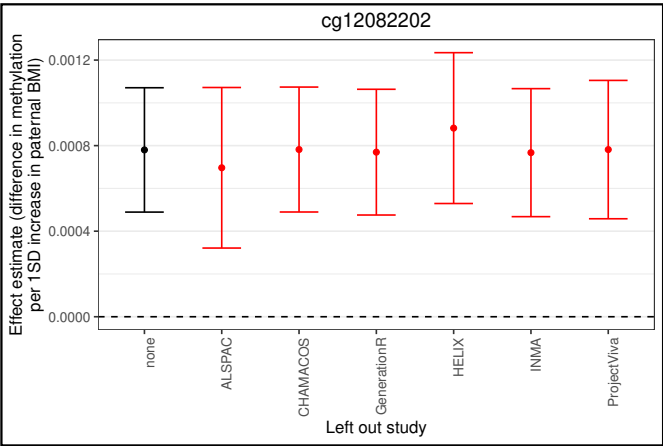
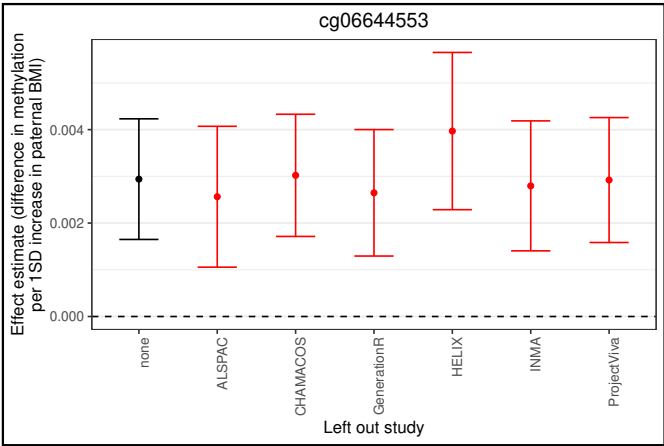
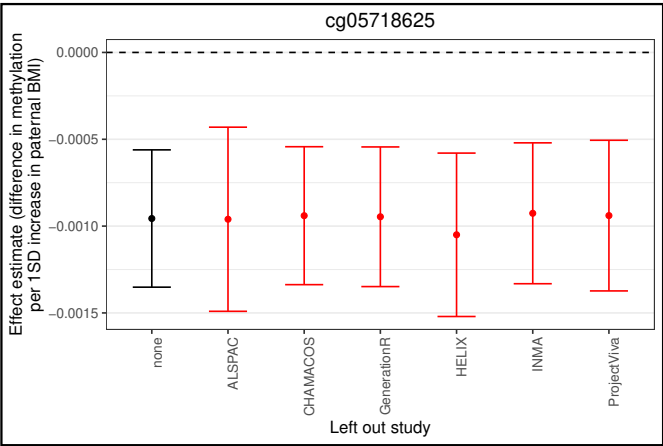
Paternal BMI (unadjusted for maternal BMI): page 3

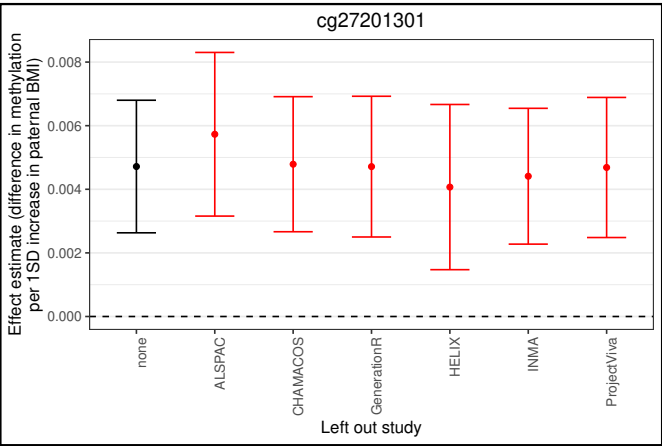


Paternal BMI (adjusted for maternal BMI): page 5



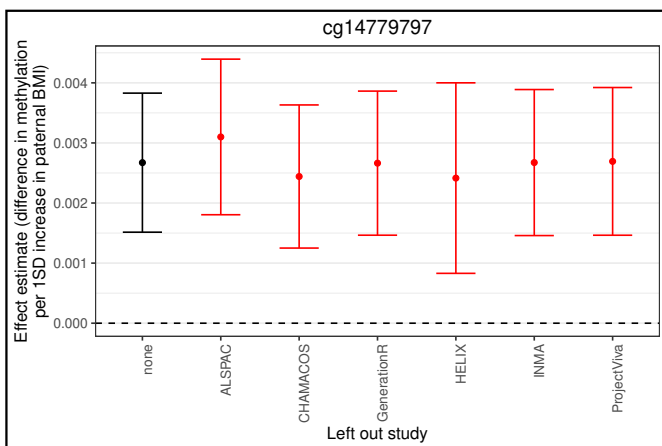
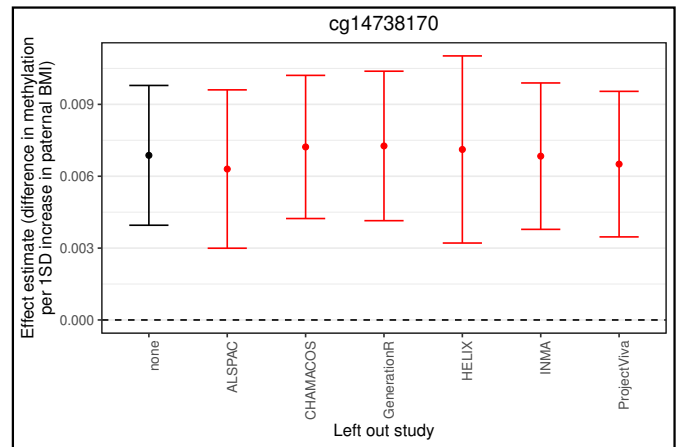
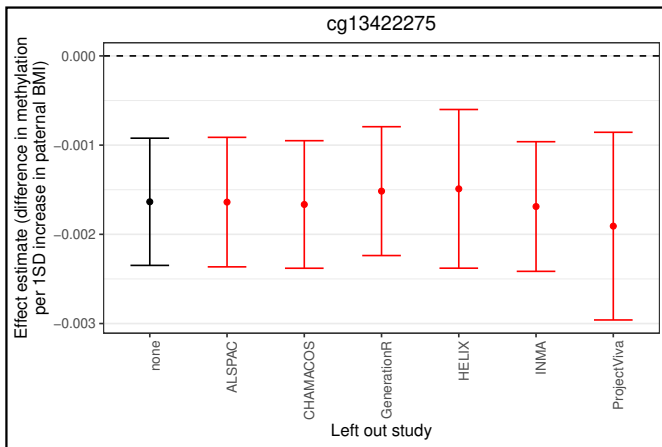
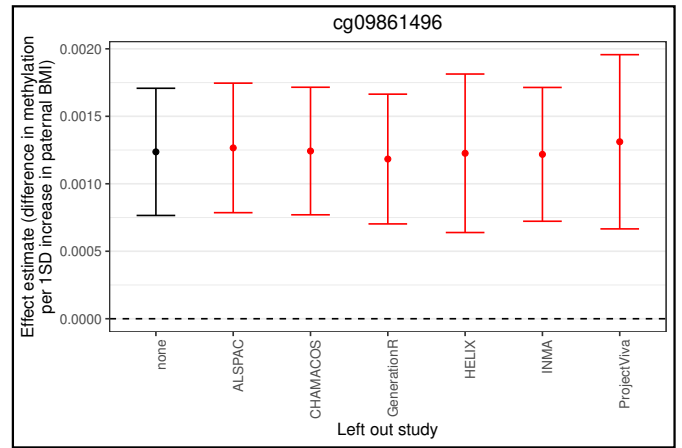
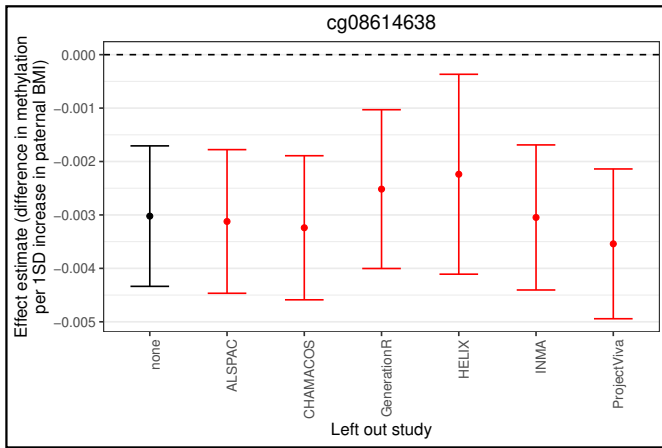
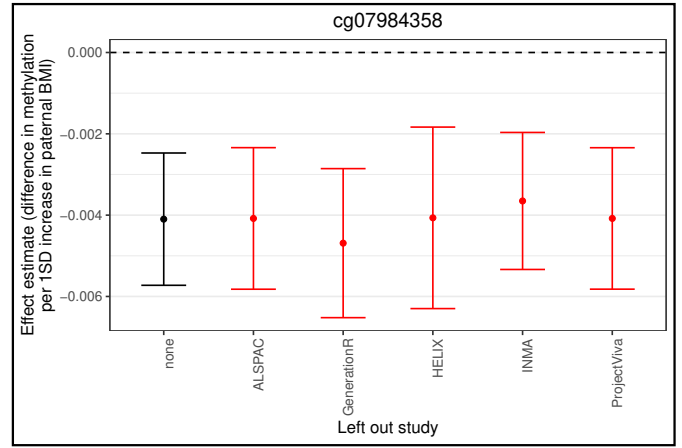
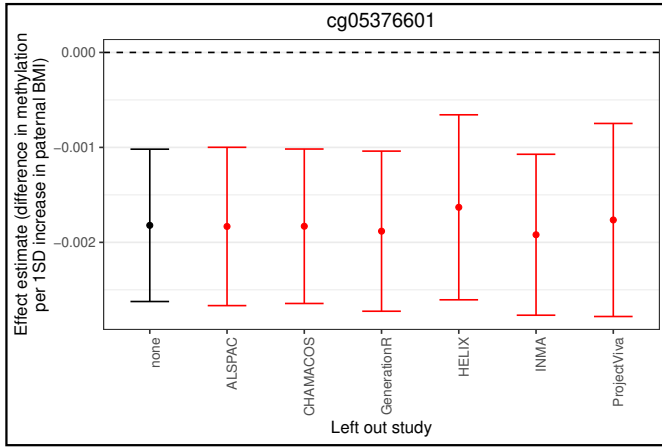
Paternal BMI adjusted for maternal BMI – female offspring only: pages 7-8



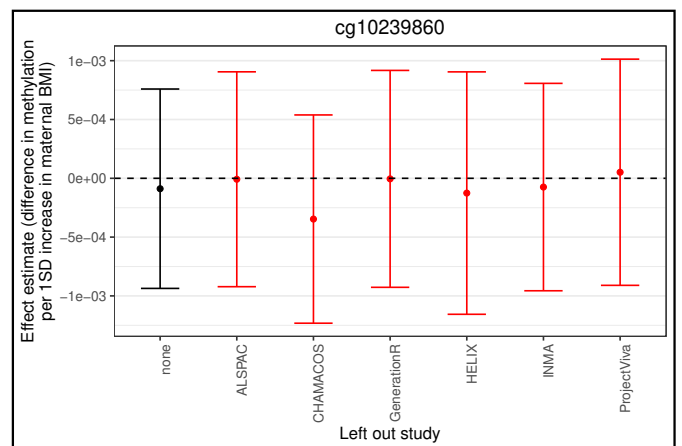
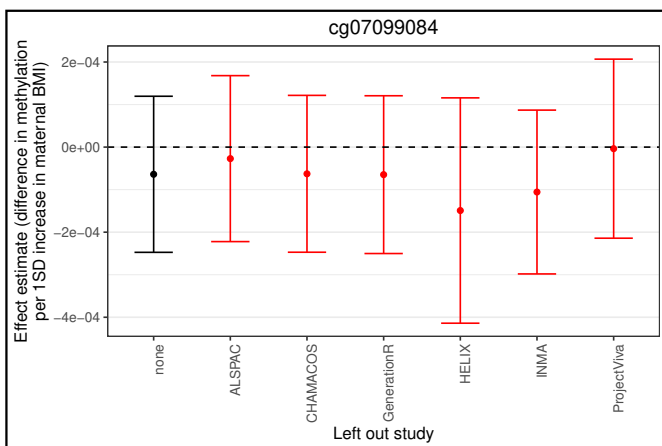
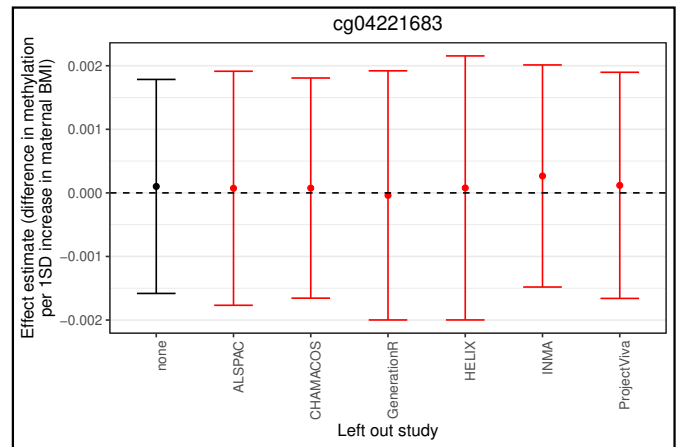
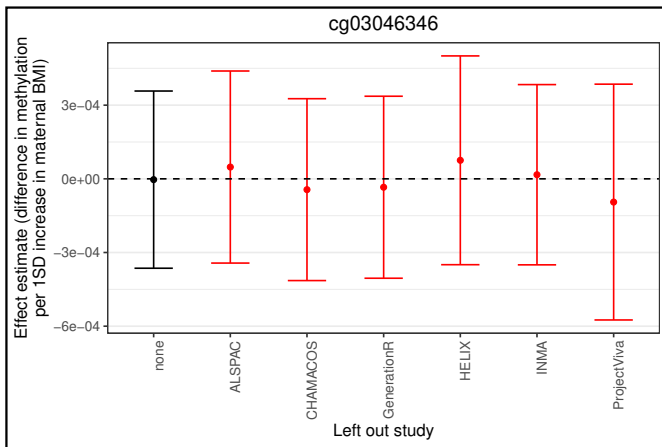
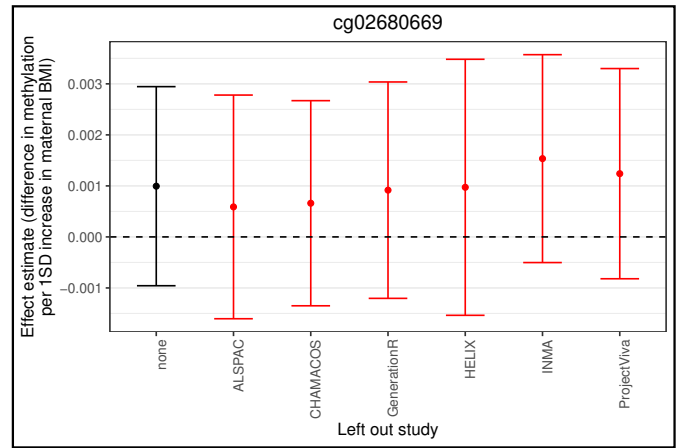
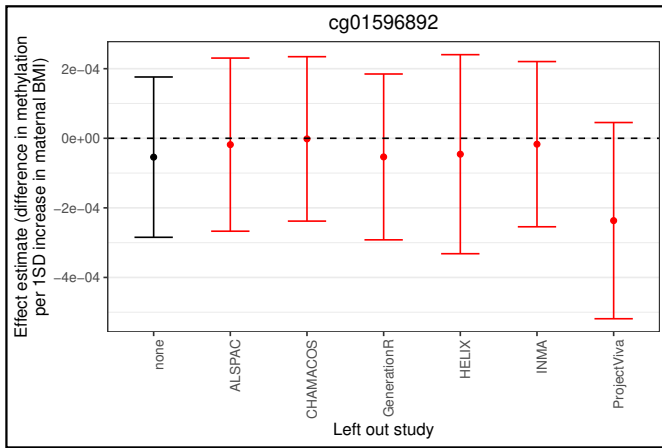
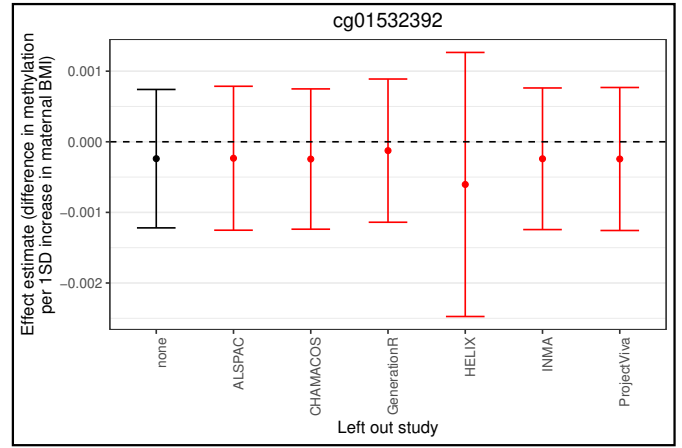
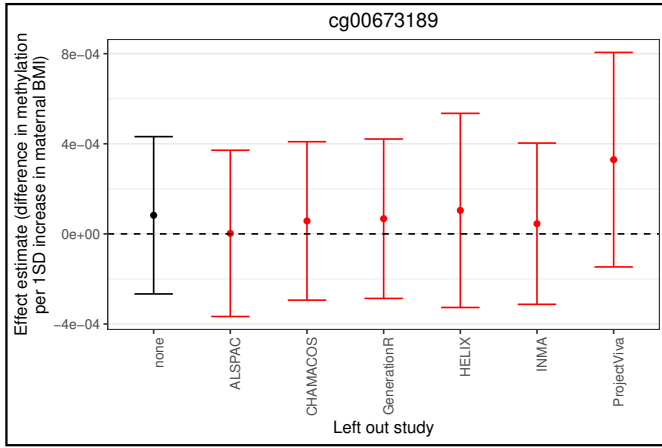


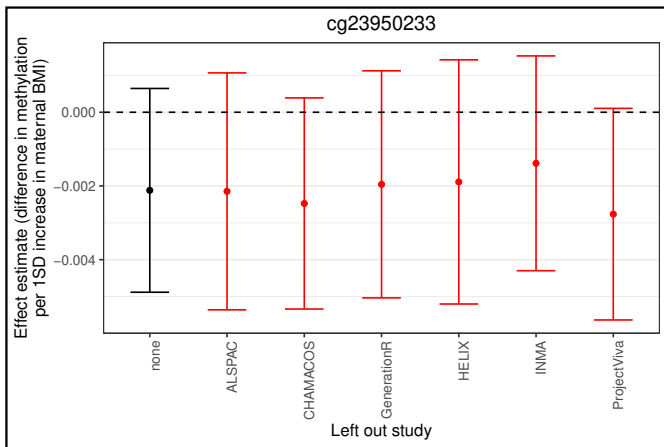
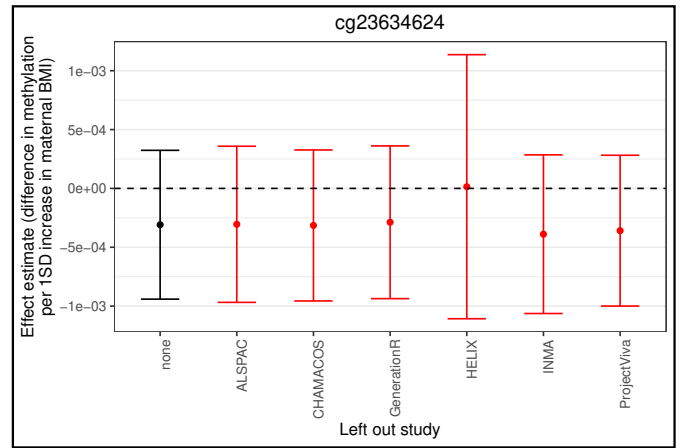
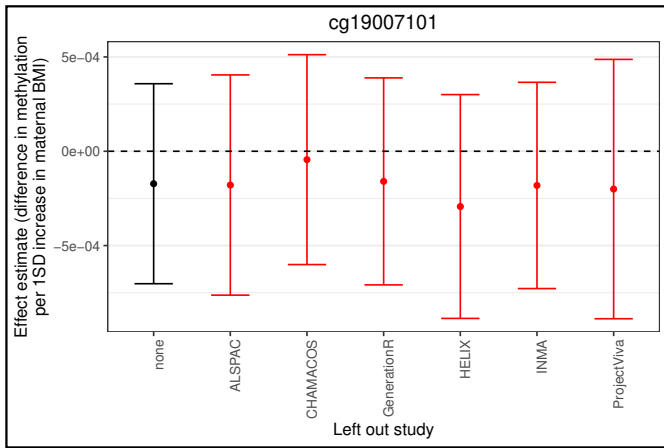
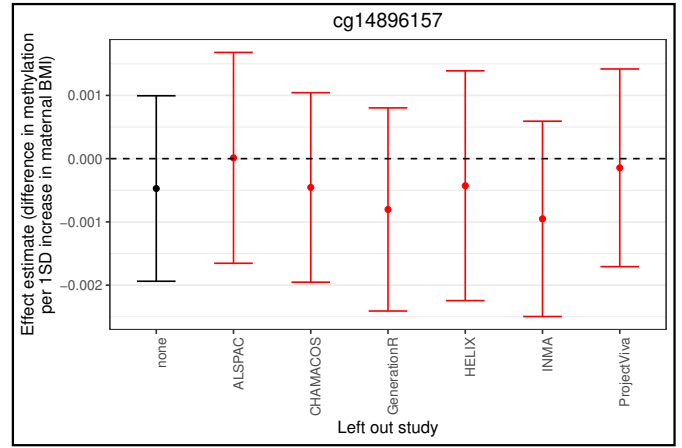
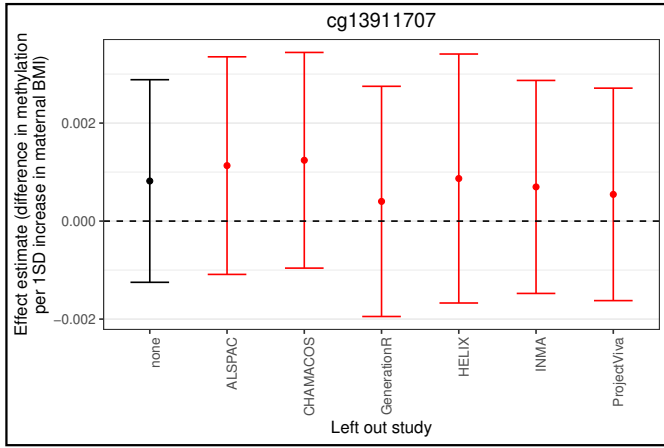


Paternal BMI adjusted for maternal BMI – male offspring only: page 10

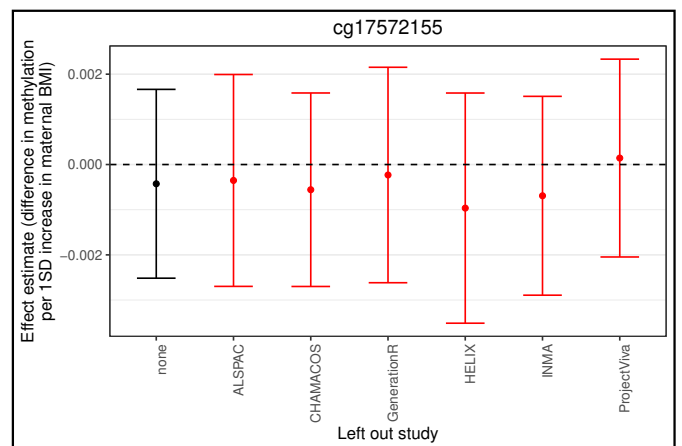
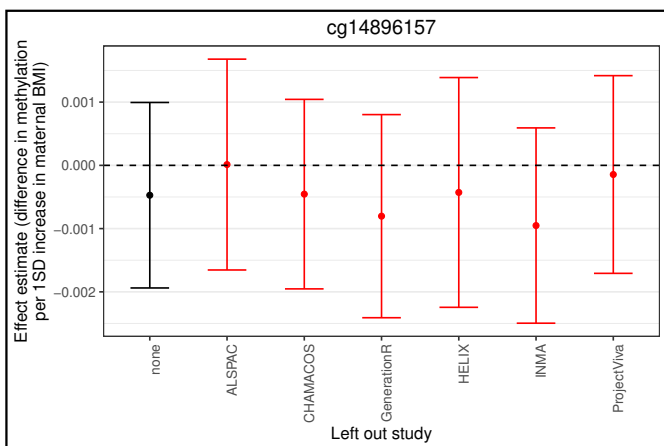
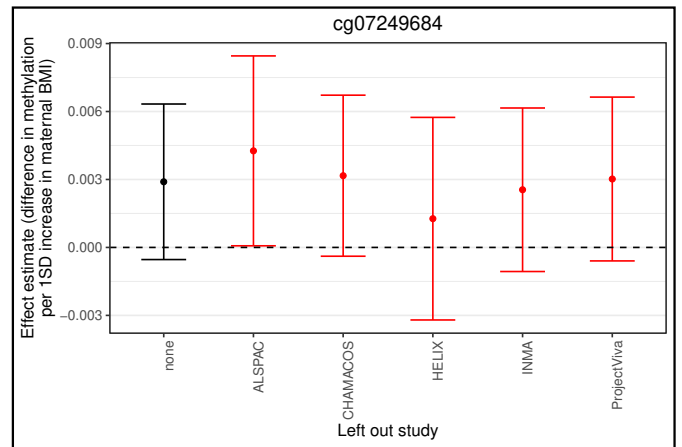
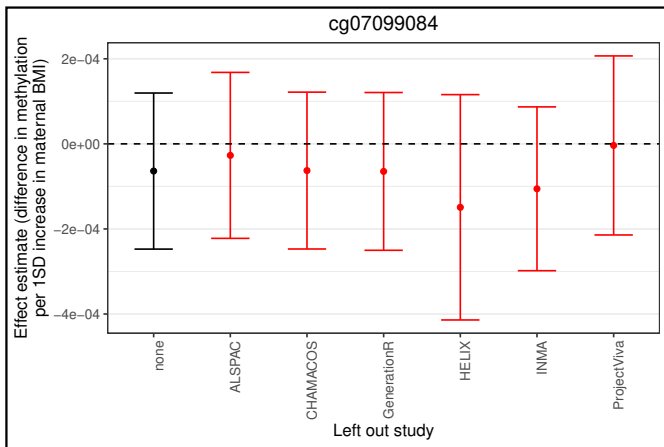
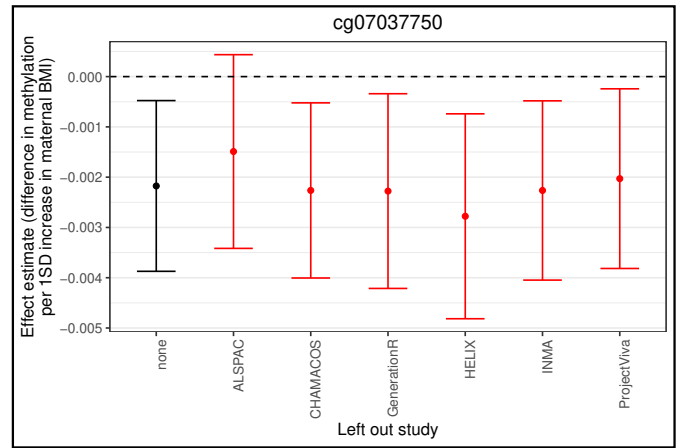
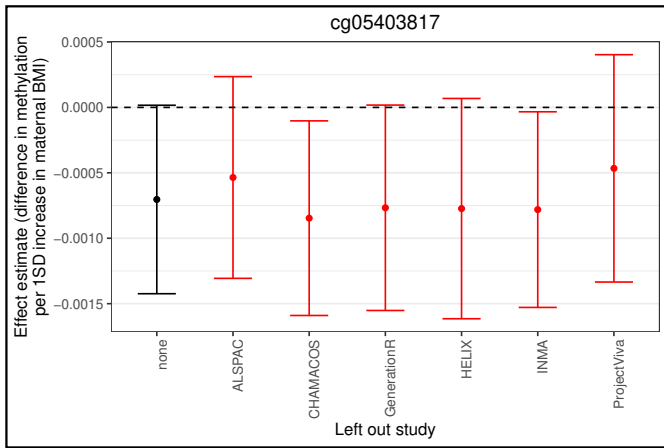
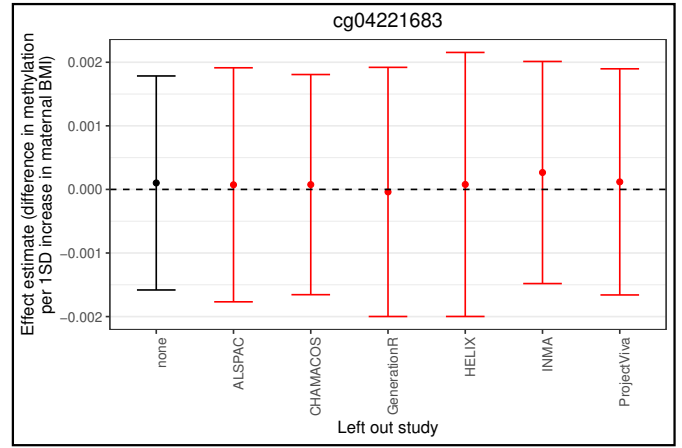
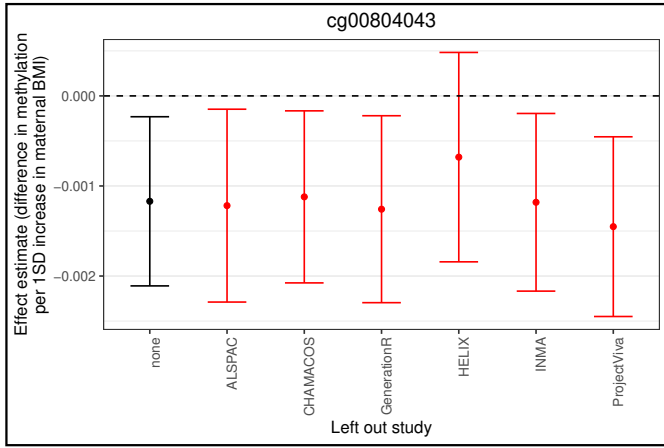


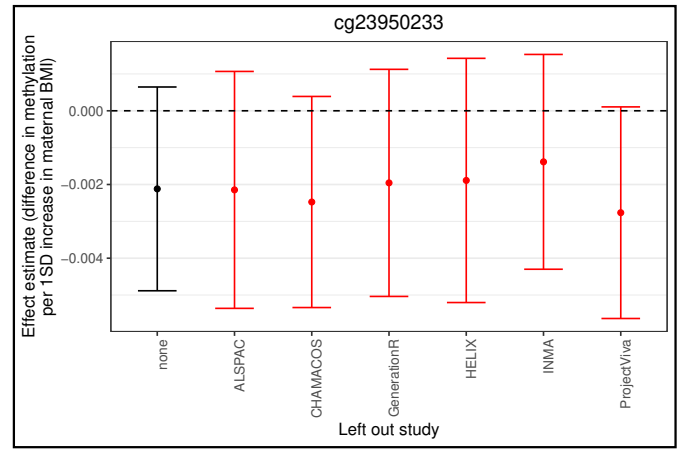
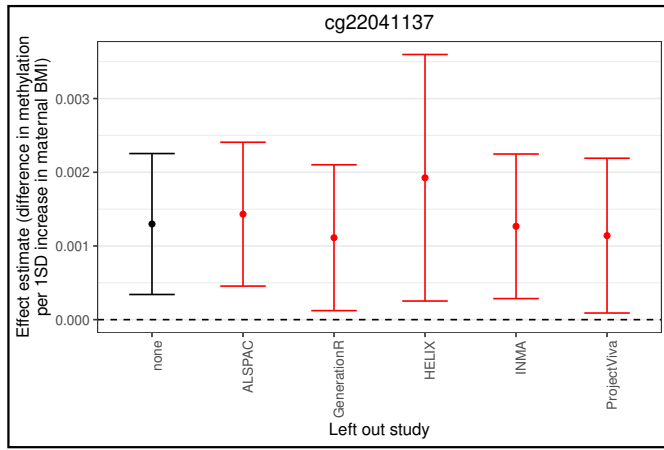
Maternal BMI (unadjusted for paternal BMI): pages 12-13





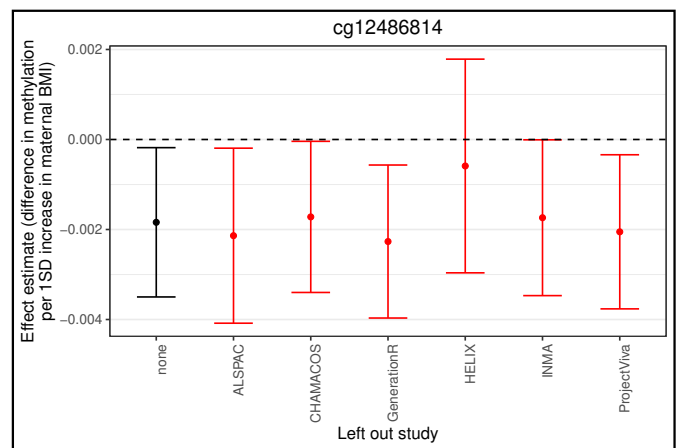
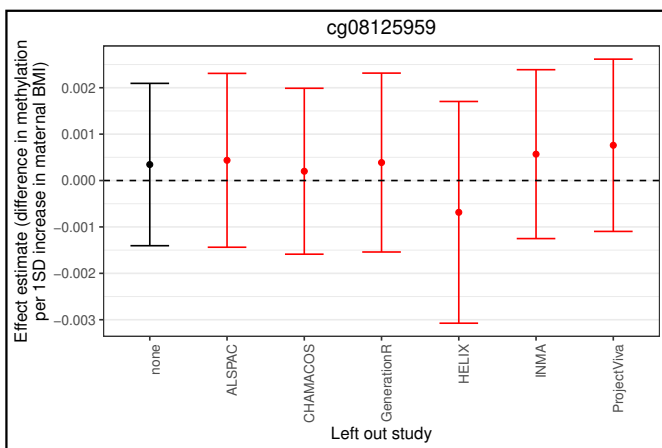
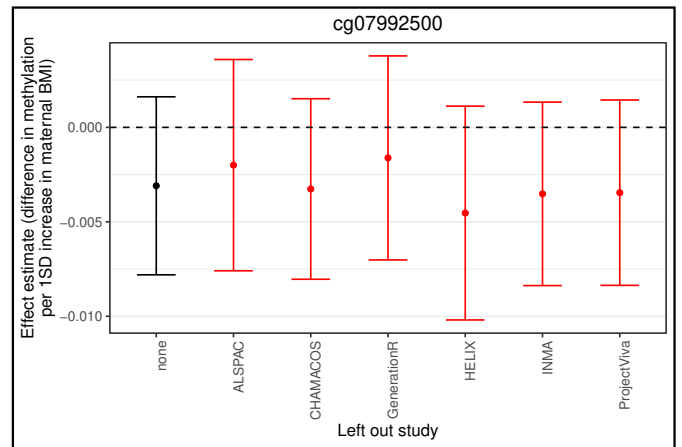
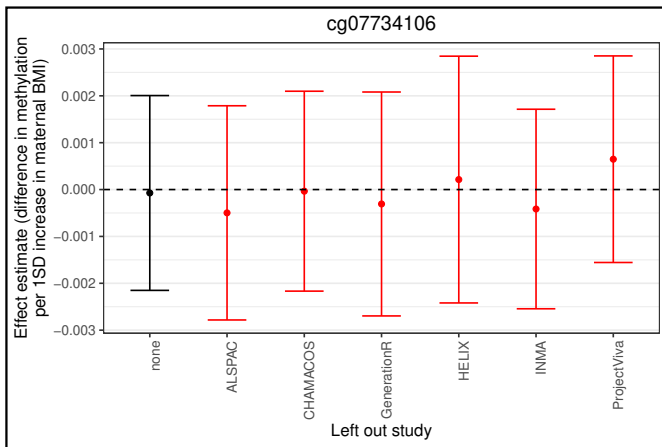
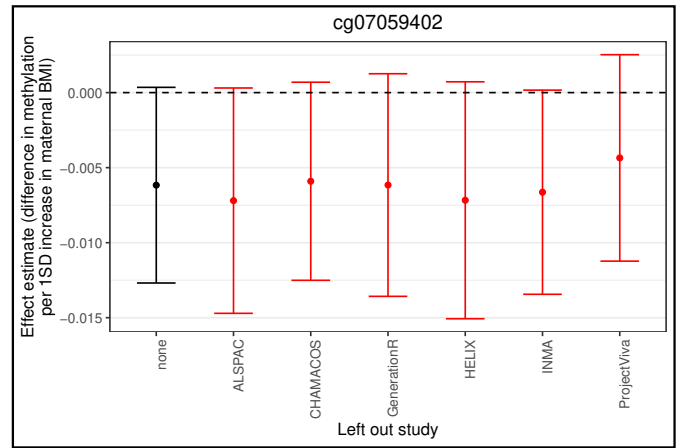
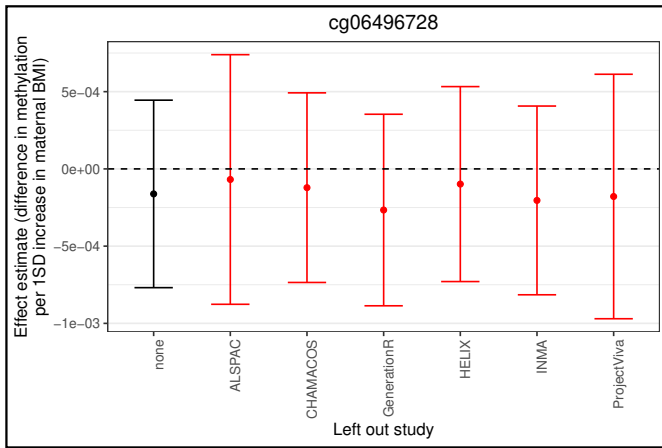
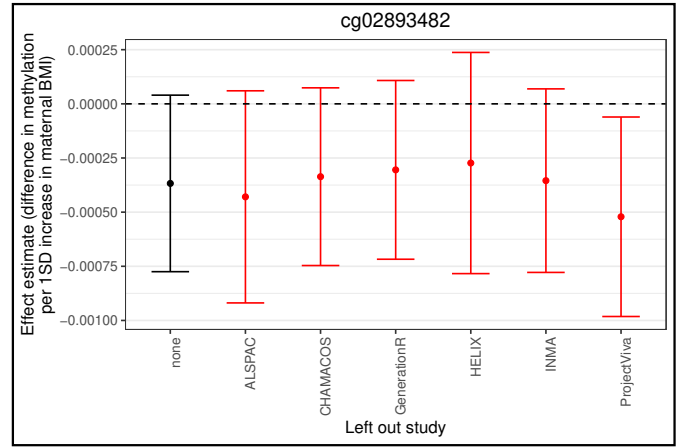
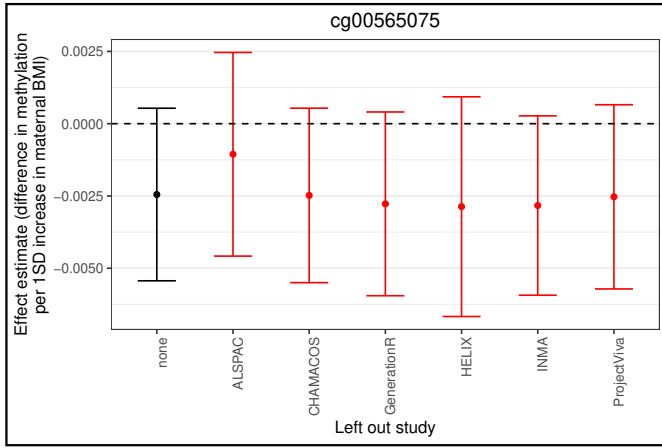
Maternal BMI (adjusted for paternal BMI): pages 15-16

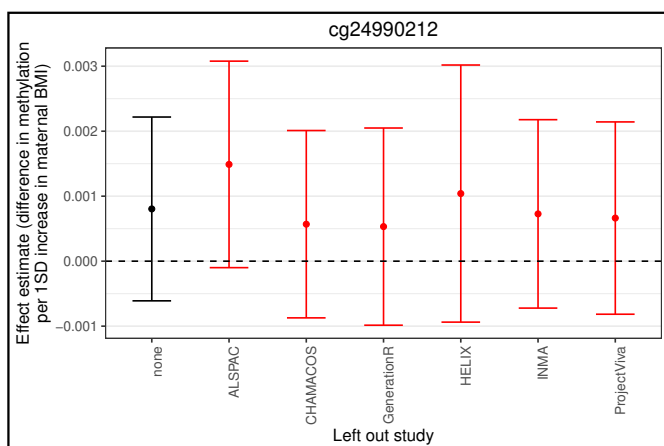
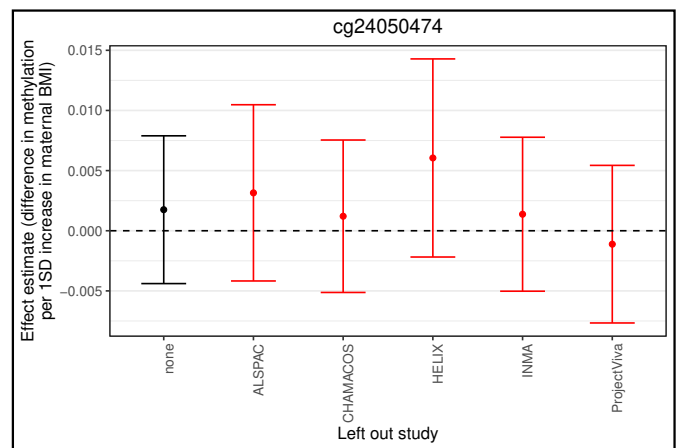
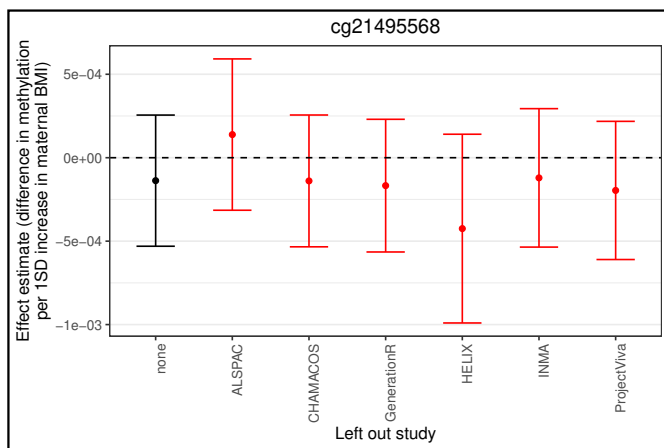
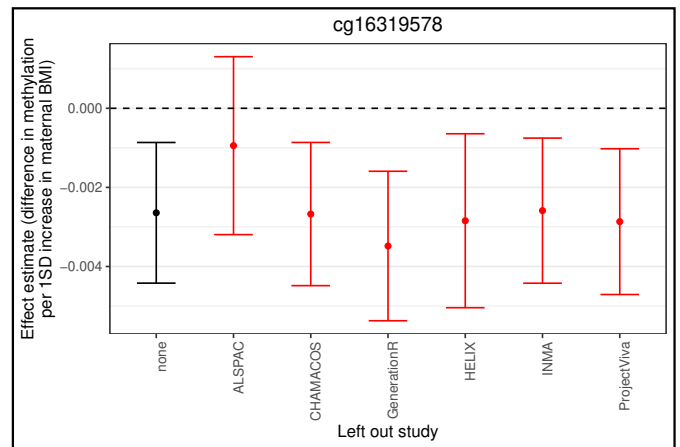
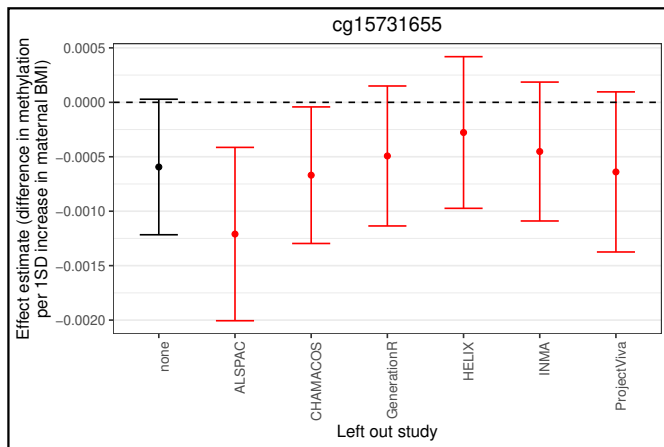
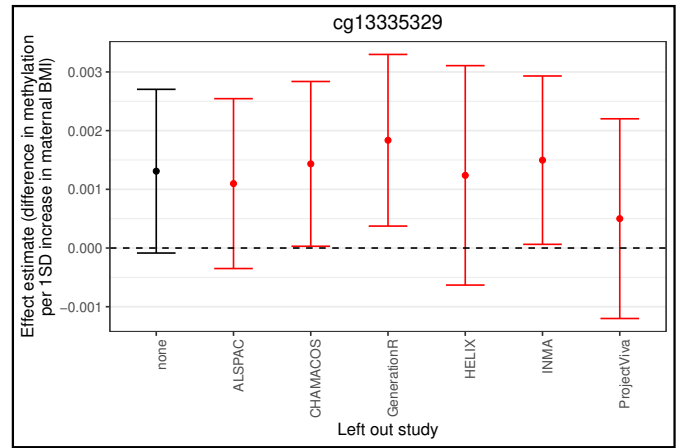
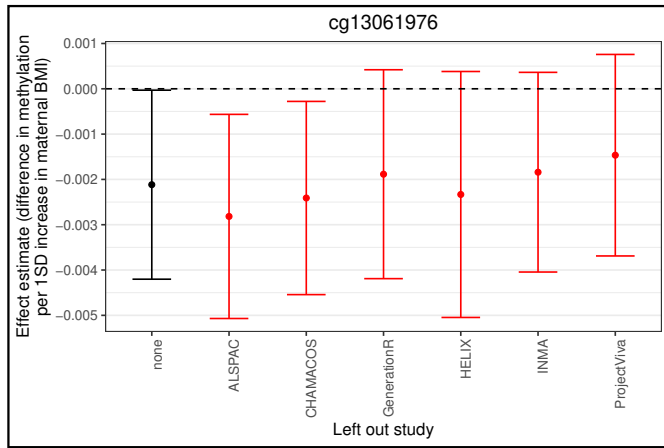




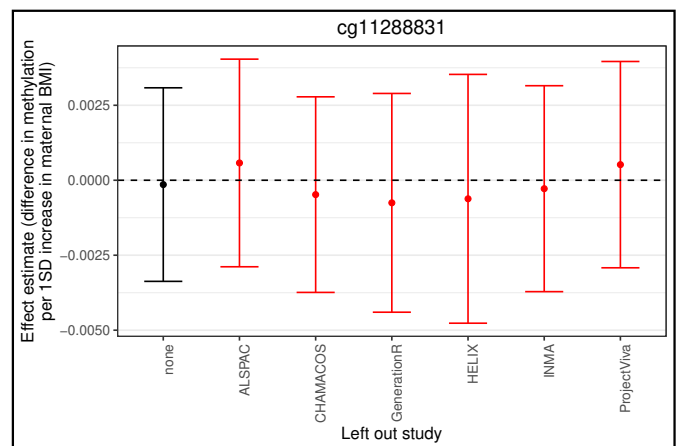
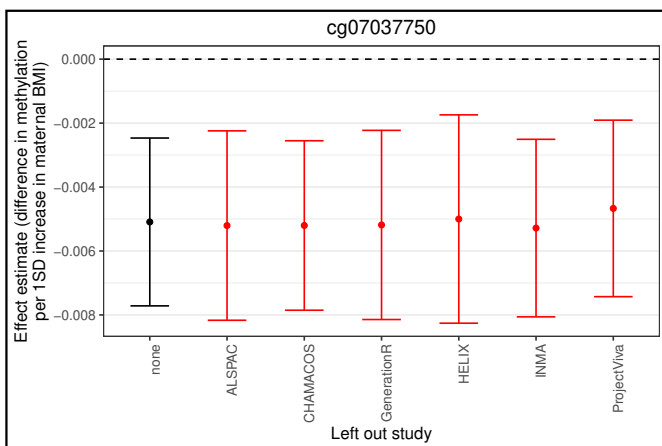
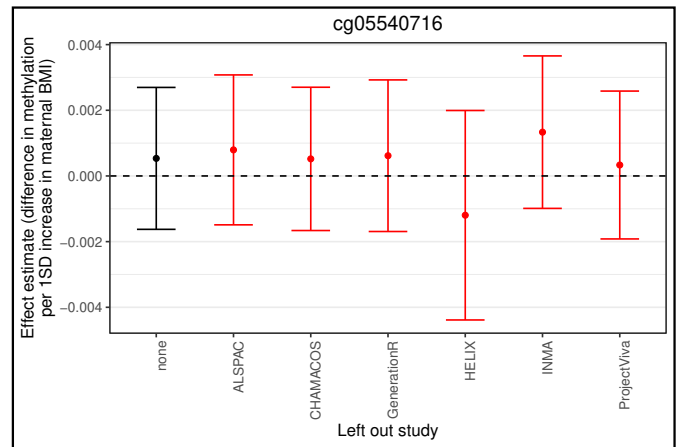
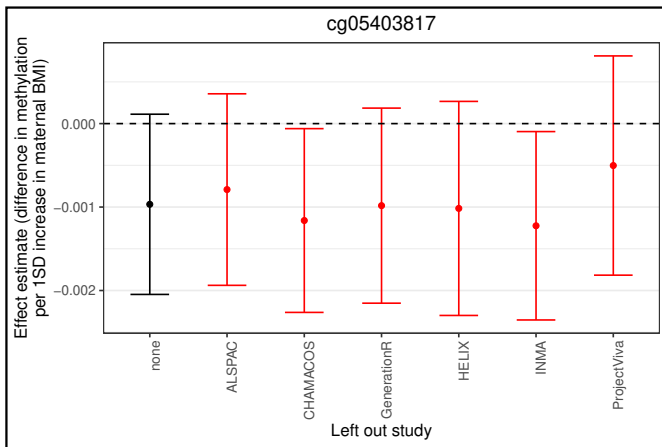
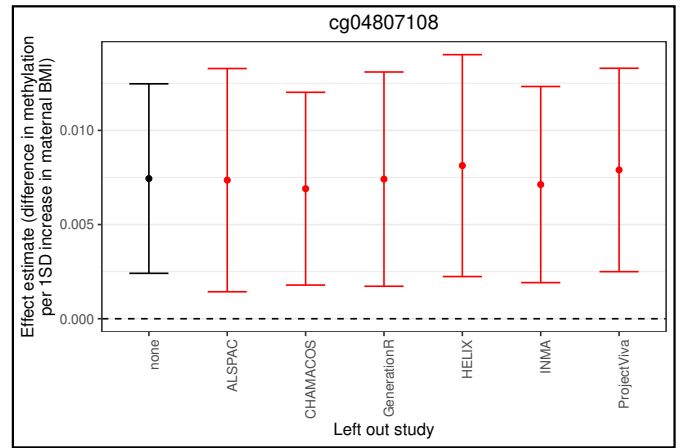
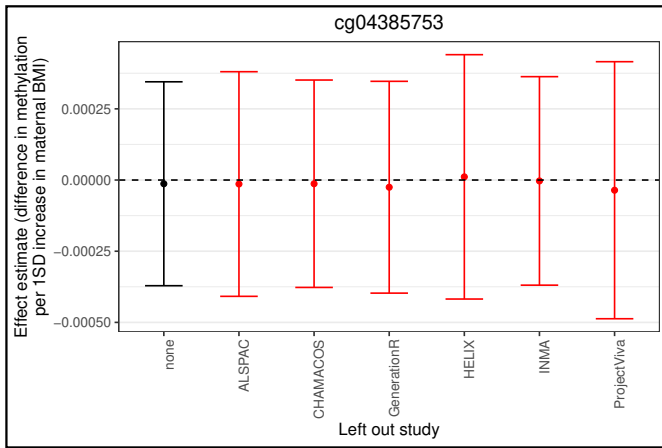
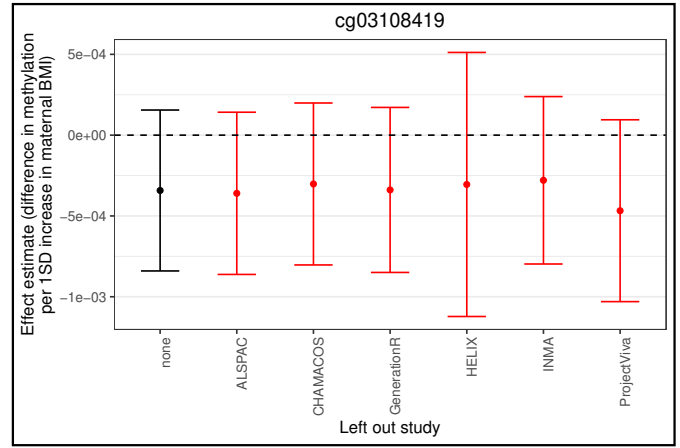
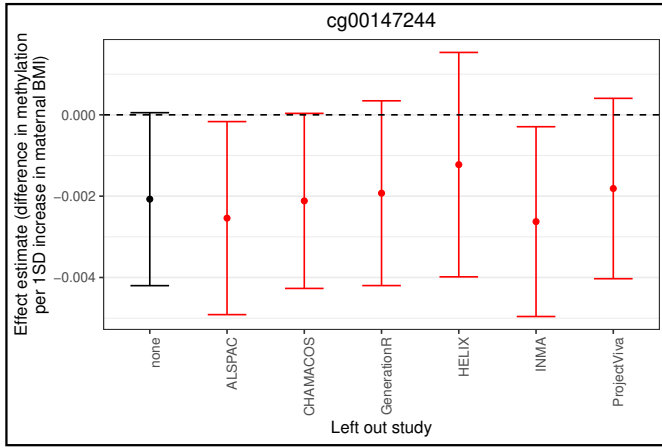


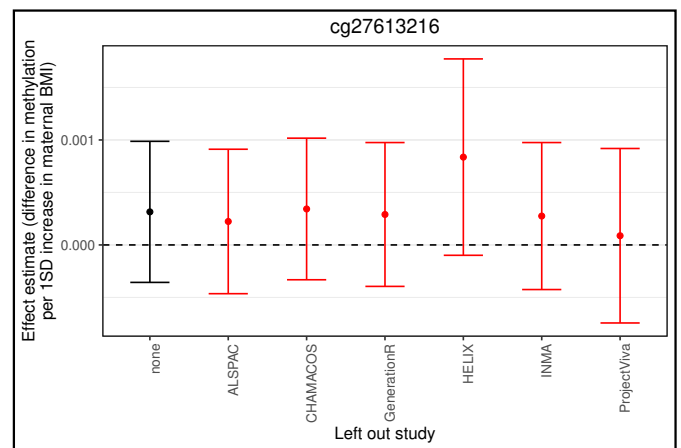
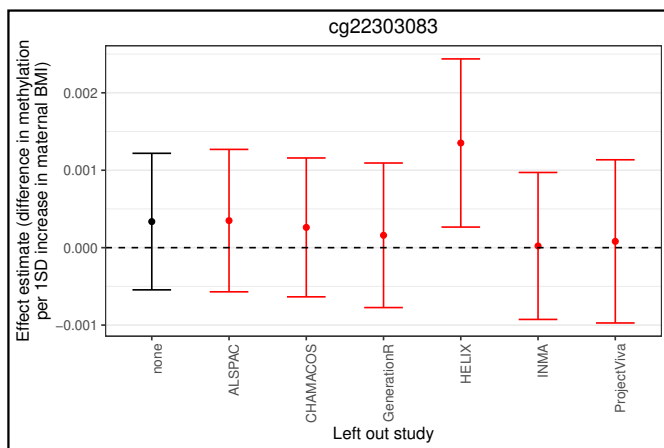
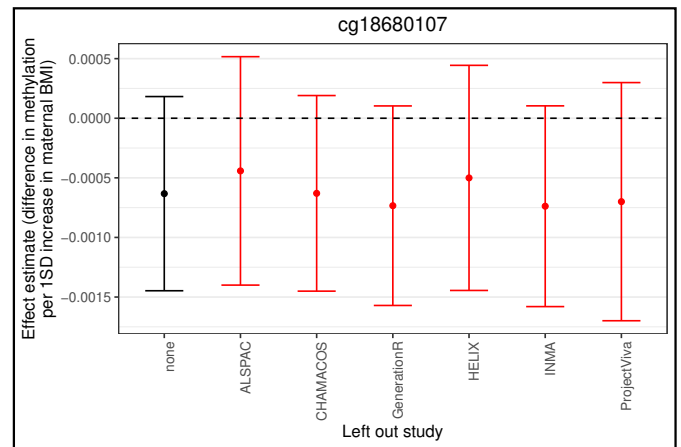
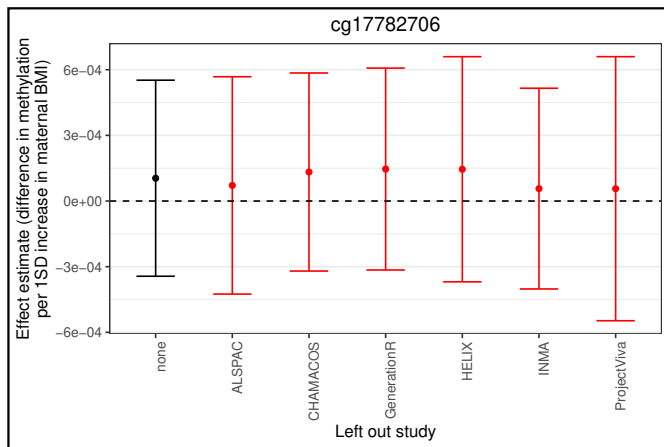
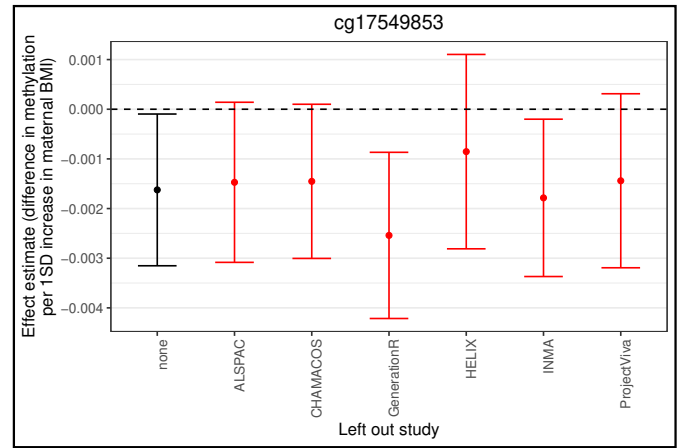
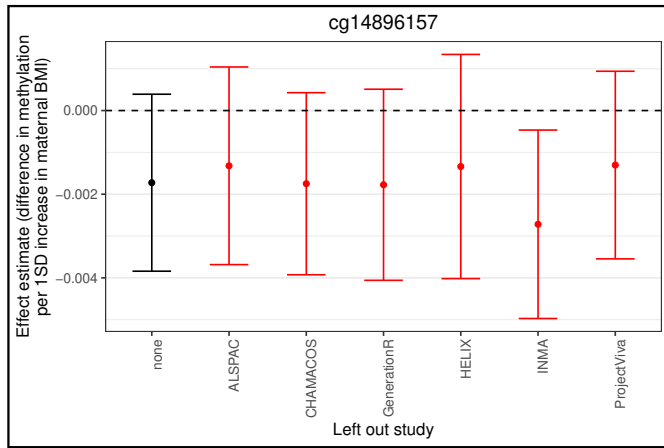
Maternal BMI adjusted for paternal BMI – female offspring only:  
pages 18-19





Maternal BMI adjusted for paternal BMI – male offspring only: pages 21-22





## Meta-regression tables: pages 23-25

**Paternal BMI (unadjusted for maternal BMI)**

| <b>CpG</b> | <b>Effect estimate (change in EWAS effect size per year)</b> | <b>Lower limit to CI</b> | <b>Upper limit to CI</b> | <b>P-value</b> |
|------------|--|--------------------------|--------------------------|----------------|
| cg09934789 | 0.005  | -0.024                   | 0.034                    | 0.728          |
| cg12082202 | 0.012  | -0.006                   | 0.030                    | 0.192          |
| cg12294260 | 0.009  | -0.033                   | 0.051                    | 0.672          |
| cg14235768 | -0.036   | -0.123                   | 0.051                    | 0.415          |
| cg24533565 | 0.031  | -0.001                   | 0.063                    | 0.059          |
| cg27201301 | 0.010  | -0.117                   | 0.138                    | 0.875          |

**Paternal BMI (adjusted for maternal BMI)**

| <b>CpG</b> | <b>Effect estimate (change in EWAS effect size per year)</b> | <b>Lower limit to CI</b> | <b>Upper limit to CI</b> | <b>P-value</b> |
|------------|--|--------------------------|--------------------------|----------------|
| cg12082202 | 0.012  | -0.006                   | 0.030                    | 0.192          |
| cg17330838 | 0.072  | -0.146                   | 0.289                    | 0.519          |
| cg27201301 | 0.010  | -0.117                   | 0.138                    | 0.875          |

**Paternal BMI adjusted for maternal BMI – female offspring only**

| <b>CpG</b> | <b>Effect estimate (change in EWAS effect size per year)</b> | <b>Lower limit to CI</b> | <b>Upper limit to CI</b> | <b>P-value</b> |
|------------|--|--------------------------|--------------------------|----------------|
| cg05718625 | 0.016  | -0.028                   | 0.060                    | 0.470          |
| cg06644553 | -0.064   | -0.166                   | 0.037                    | 0.215          |
| cg12082202 | -0.011   | -0.042                   | 0.020                    | 0.495          |
| cg16681820 | 0.016  | -0.012                   | 0.044                    | 0.253          |
| cg18473137 | 0.008  | -0.154                   | 0.170                    | 0.921          |
| cg19339146 | 0.144  | -0.046                   | 0.334                    | 0.138          |
| cg21792150 | 0.082  | -0.018                   | 0.182                    | 0.107          |
| cg21886089 | 0.097  | -0.058                   | 0.253                    | 0.219          |
| cg27201301 | -0.097   | -0.310                   | 0.116                    | 0.371          |

**Paternal BMI adjusted for maternal BMI – male offspring only**

| <b>CpG</b> | <b>Effect estimate (change in EWAS effect size per year)</b> | <b>Lower limit to CI</b> | <b>Upper limit to CI</b> | <b>P-value</b> |
|------------|--|--------------------------|--------------------------|----------------|
| cg05376601 | -0.029   | -0.095                   | 0.037                    | 0.392          |
| cg07984358 | 0.089  | -0.091                   | 0.268                    | 0.334          |
| cg08614638 | 0.053  | -0.109                   | 0.215                    | 0.520          |
| cg09861496 | -0.009   | -0.051                   | 0.032                    | 0.658          |
| cg13422275 | -0.010   | -0.096                   | 0.076                    | 0.819          |
| cg14738170 | -0.022   | -0.257                   | 0.214                    | 0.858          |
| cg14779797 | 0.026  | -0.067                   | 0.119                    | 0.587          |

**Maternal BMI (unadjusted for paternal BMI)**

| <b>CpG</b> | <b>Effect estimate (change in EWAS effect size per year)</b> | <b>Lower limit to CI</b> | <b>Upper limit to CI</b> | <b>P-value</b> |
|------------|--|--------------------------|--------------------------|----------------|
| cg00673189 | -0.008   | -0.051                   | 0.036                    | 0.729          |
| cg01532392 | 0.022  | -0.079                   | 0.124                    | 0.665          |
| cg01596892 | -0.001   | -0.029                   | 0.028                    | 0.965          |
| cg02680669 | 0.145  | -0.012                   | 0.303                    | 0.071          |
| cg03046346 | 0.004  | -0.037                   | 0.044                    | 0.866          |
| cg04221683 | 0.029  | -0.109                   | 0.166                    | 0.683          |
| cg07099084 | -0.009   | -0.028                   | 0.009                    | 0.333          |
| cg10239860 | 0.038  | -0.031                   | 0.108                    | 0.279          |
| cg13911707 | -0.082   | -0.232                   | 0.068                    | 0.282          |
| cg14896157 | -0.113   | -0.228                   | 0.002                    | 0.055          |
| cg19007101 | -0.013   | -0.062                   | 0.037                    | 0.615          |
| cg23634624 | -0.016   | -0.063                   | 0.031                    | 0.512          |
| cg23950233 | 0.152  | -0.058                   | 0.362                    | 0.157          |

**Maternal BMI (adjusted for paternal BMI)**

| <b>CpG</b> | <b>Effect estimate (change in EWAS effect size per year)</b> | <b>Lower limit to CI</b> | <b>Upper limit to CI</b> | <b>P-value</b> |
|------------|--|--------------------------|--------------------------|----------------|
| cg00804043 | -0.032   | -0.032                   | -0.107                   | 0.043          |
| cg04221683 | 0.029  | 0.029                    | -0.109                   | 0.166          |
| cg05403817 | -0.002   | -0.002                   | -0.064                   | 0.060          |
| cg07037750 | 0.000  | 0.000                    | -0.135                   | 0.134          |
| cg07099084 | -0.009   | -0.009                   | -0.028                   | 0.009          |
| cg07249684 | -0.072   | -0.072                   | -0.365                   | 0.222          |
| cg14896157 | -0.113   | -0.113                   | -0.228                   | 0.002          |
| cg17572155 | 0.001  | 0.001                    | -0.160                   | 0.162          |
| cg22041137 | -0.055   | -0.055                   | -0.152                   | 0.042          |
| cg23950233 | 0.152  | 0.152                    | -0.058                   | 0.362          |



**Maternal BMI adjusted for paternal BMI – female offspring only**

| <b>CpG</b> | <b>Effect estimate (change in EWAS effect size per year)</b> | <b>Lower limit to CI</b> | <b>Upper limit to CI</b> | <b>P-value</b> |
|------------|--|--------------------------|--------------------------|----------------|
| cg00565075 | -0.120   | -0.385                   | 0.145                    | 0.375          |
| cg02893482 | 0.000  | -0.039                   | 0.038                    | 0.988          |
| cg06496728 | -0.106   | -0.206                   | -0.006                   | 0.038          |
| cg07059402 | -0.050   | -0.593                   | 0.494                    | 0.857          |
| cg07734106 | -0.099   | -0.287                   | 0.089                    | 0.300          |
| cg07992500 | 0.069  | -0.353                   | 0.491                    | 0.749          |
| cg08125959 | 0.097  | -0.046                   | 0.241                    | 0.184          |
| cg12486814 | -0.059   | -0.234                   | 0.116                    | 0.508          |
| cg13061976 | 0.116  | -0.056                   | 0.288                    | 0.185          |
| cg13335329 | 0.085  | -0.110                   | 0.281                    | 0.393          |
| cg15731655 | 0.089  | -0.004                   | 0.183                    | 0.060          |
| cg16319578 | -0.049   | -0.279                   | 0.181                    | 0.676          |
| cg21495568 | -0.001   | -0.047                   | 0.046                    | 0.982          |
| cg24050474 | -0.121   | -0.860                   | 0.618                    | 0.748          |
| cg24990212 | -0.022   | -0.182                   | 0.139                    | 0.789          |

**Maternal BMI adjusted for paternal BMI – male offspring only**

| <b>CpG</b> | <b>Effect estimate (change in EWAS effect size per year)</b> | <b>Lower limit to CI</b> | <b>Upper limit to CI</b> | <b>P-value</b> |
|------------|--|--------------------------|--------------------------|----------------|
| cg00147244 | -0.068   | -0.211                   | 0.076                    | 0.357          |
| cg03108419 | 0.007  | -0.037                   | 0.051                    | 0.745          |
| cg04385753 | 0.000  | -0.038                   | 0.038                    | 0.996          |
| cg04807108 | -0.027   | -0.470                   | 0.416                    | 0.906          |
| cg05403817 | -0.028   | -0.122                   | 0.066                    | 0.555          |
| cg05540716 | 0.146  | -0.009                   | 0.300                    | 0.064          |
| cg07037750 | -0.023   | -0.228                   | 0.181                    | 0.822          |
| cg11288831 | -0.012   | -0.254                   | 0.231                    | 0.924          |
| cg14896157 | -0.165   | -0.320                   | -0.009                   | 0.039          |
| cg17549853 | -0.158   | -0.290                   | -0.025                   | 0.020          |
| cg17782706 | -0.021   | -0.071                   | 0.029                    | 0.409          |
| cg18680107 | -0.057   | -0.140                   | 0.025                    | 0.171          |
| cg22303083 | -0.072   | -0.149                   | 0.006                    | 0.072          |
| cg27613216 | -0.034   | -0.095                   | 0.027                    | 0.272          |