**Supplemental Table S1.** Interactions between Maternal and infant SNPs and maternal overweight associated with OHDs risk based on G×E Model

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Significant maternal SNPs** |  |  |  |  |  |
|  |  |  |  |  | **Normal-weight** | **Overweight** | **Interaction D×E×M†** |
| **Chr** | **Gene** | **SNP** | **Allele\*** | **Pathway** | **RR (95% CI)** | **RR (95% CI)** | **p-value** | **BFDP** |
| 10 | MGMT | rs511770 | A/G | Transsulfuration | 0.86 (0.68, 1.09) | 1.54 (1.15, 2.06) | 1.60×10-3 | 0.64 |
| 10 | MGMT | rs483959 | A/G | Transsulfuration | 0.89 (0.70, 1.13) | 1.55 (1.16, 2.07) | 2.52×10-3 | 0.69 |
| 10 | MGMT | rs4751100 | G/A | Transsulfuration | 0.91 (0.70, 1.16) | 1.60 (1.19, 2.17) | 3.15×10-3 | 0.73 |
| 5 | GPX3 | rs3792797 | A/C | Transsulfuration | 0.78 (0.58, 1.05) | 1.76 (1.21, 2.56) | 7.85×10-4 | 0.70 |
| 20 | GSS | rs2273684 | C/A | Transsulfuration | 0.75 (0.59, 0.95) | 1.30 (0.98, 1.73) | 2.92×10-3 | 0.71 |
| 7 | NOS3 | rs12703107 | A/C | Transsulfuration | 0.78 (0.60, 1.02) | 1.46 (1.06, 2.00) | 2.67×10-3 | 0.74 |
| 7 | NOS3 | rs10277237 | A/G | Transsulfuration | 0.86 (0.65, 1.12) | 1.57 (1.13, 2.17) | 4.39×10-3 | 0.79 |
| 6 | GCLC | rs12525474 | A/G | Transsulfuration | 0.82 (0.58, 1.15) | 1.98 (1.31, 3.01) | 1.25×10-3 | 0.78 |
|  |  |  |  |  |  |  |  |  |
| **Significant infant SNPs** |  |  |  |  |  |
|  |  |  |  |  | **Normal-weight** | **Overweight** | **Interaction D×E×C‡** |
| **Chr** | **Gene** | **SNP** | **Allele\*** | **Pathway** | **RR (95% CI)** | **RR (95% CI)** | **p-value** | **BFDP** |
| 22 | COMT | rs737866 | G/A | Homocysteine | 0.81 (0.60, 1.09) | 1.58 (1.11, 2.23) | 3.04×10-3 | 0.77 |
| 12 | MGST1 | rs7979684 | A/C | Transsulfuration | 0.75 (0.59, 0.96) | 1.26 (0.93, 1.71) | 5.55×10-3 | 0.77 |
| 7 | KIAA0828 | rs587499 | A/C | Homocysteine | 0.89 (0.69, 1.15) | 1.52 (1.12, 2.06) | 5.44×10-3 | 0.78 |
| 5 | BHMT | rs506500 | A/G | Homocysteine | 0.86 (0.65, 1.13) | 1.56 (1.12, 2.17) | 4.26×10-3 | 0.78 |
| 11 | CAT | rs566979 | C/A | Transsulfuration | 0.81 (0.63, 1.04) | 1.38 (1.02, 1.87) | 6.40×10-3 | 0.79 |
| 17 | NOS2A | rs944725 | A/G | Transsulfuration | 1.00 (0.79, 1.28) | 1.65 (1.21, 2.24) | 7.28×10-3 | 0.79 |

Chr: Chromosome; RR: relative risk for carrying one copy of minor allele compared to no copies; CI: confidence interval; BFDP: Bayesian false-discovery probability, BFDPs < 0.8 were considered to indicate statistical significance

\*Allele is presented as minor/major allele in our study sample; major allele is the reference allele.

†Interaction D×E×M is the three-way interaction for maternal genotype (see G×E Model in Statistical Methods section for details)

‡Interaction D×E×C is the three-way interaction for infant genotype (see G×E Model in Statistical Methods section for details)