

Phenotype	$\sigma_d^2(SE)$	$\sigma_{a,f}^2(SE)$	$\sigma_{a,m}^2(SE)$	$\sigma_{e,ss}^2(SE)$	$\sigma_e^2(SE)$	$P_g$	$P_{g,f}$	$P_{g,m}$	$P_{ss}$
Triglyceride	0.0189(0.014)	0.0323(0.0219)	0.0031(0.0236)	0.1134(0.0283)	0.1205(0.0189)	1.79 <sup>-1</sup>	1.4 <sup>-1</sup>	8.95 <sup>-1</sup>	<b>6.23<sup>-5</sup></b>
HDL	0.0375(0.0072)	0(0.011)	0(0.0117)	0.0017(0.0137)	0.0694(0.0103)	<b>1.72<sup>-7</sup></b>	1.00	1.00	8.99 <sup>-1</sup>
LDL	0.2569(0.0511)	0.0237(0.0786)	0.042(0.082)	0.1186(0.0983)	0.3921(0.067)	<b>4.88<sup>-7</sup></b>	7.63 <sup>-1</sup>	6.08 <sup>-1</sup>	2.27 <sup>-1</sup>
BMI	0.0052(0.0014)	0(0.0022)	0(0.0023)	0.0107(0.0028)	0.0118(0.002)	<b>2.53<sup>-4</sup></b>	1.00	1.00	<b>1.20<sup>-4</sup></b>
C-reactive protein	0.222(0.1553)	0.1346(0.243)	0.0301(0.2641)	0.0227(0.3108)	1.9925(0.2321)	1.53 <sup>-1</sup>	5.80 <sup>-1</sup>	9.09 <sup>-1</sup>	9.42 <sup>-1</sup>
Glucose	0.0011(0.0006)	0.0002(0.0008)	0.0014(0.0008)	0.0009(0.0009)	0.0043(0.0007)	2.31 <sup>-2</sup>	7.83 <sup>-1</sup>	8.66 <sup>-2</sup>	3.56 <sup>-1</sup>
Insulin	0.0121(0.0082)	0.0139(0.0132)	0.004(0.0142)	0.0163(0.0167)	0.0847(0.0113)	1.40 <sup>-1</sup>	2.93 <sup>-1</sup>	7.79 <sup>-1</sup>	3.30 <sup>-1</sup>
Systolic blood pressure	37.1421(10.5002)	4.5774(16.7722)	1.9977(17.5993)	18.3323(21.4657)	114.189(14.6194)	<b>4.04<sup>-4</sup></b>	7.85 <sup>-1</sup>	9.10 <sup>-1</sup>	3.93 <sup>-1</sup>
Diastolic blood pressure	22.0399(8.3115)	0.0001(12.9059)	0.0001(13.6516)	11.6098(16.1558)	97.5402(11.0647)	8.01 <sup>-3</sup>	1.00	1.00	4.72 <sup>-1</sup>
Height	24.0673(2.6501)	1.2284(3.8886)	1.1577(4.2184)	3.2263(4.9783)	12.6085(3.326)	<b>1.07<sup>-19</sup></b>	7.52 <sup>-1</sup>	7.84 <sup>-1</sup>	5.17 <sup>-1</sup>

**Table S1.** P-values of the variance components in the full five-variance-component model for the 10 phenotypes of NFBC data. For each trait, we tested if the variance of the polygenic background effect term( $\sigma_g^2$ ) was significantly non-zero ( $P_g$ ) and if the variance of sex-specific error term( $\sigma_{e,ss}^2$ ) was significantly non-zero ( $P_{ss}$ ). We used bold font for p-values less than 0.005 (corrected for 10 phenotypes).