**Supplemental Tables**

**Supplemental Table S1:** Results of the multiple regression analysis for the association between birth weight (continuous) and LDL, HDL, non-HDL, and TG levels of fifth-grade WV children born full term using merged data from the Birth Score Project (1994-2000) and the CARDIAC Project (2004-2010) for all infants who were born Full-Term (N=19583)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   |   | N | Unstandardized regression coefficients and 95% CI | Standardized (Beta) | t Value | P-value | Adj-R2 | Reduced model Adj-R2 | Change in Adj-R2 |
| LDL | Intercept | 13139 | 142.72 (128.72 - 156.71) | 0 | 19.99 | 0.0001 | 0.0365 | 0.0361 | 0.0004 |
|   | Child's age in fifth grade |  | -5.23 (-6.47 - -3.995) | -0.11 | -8.3 | 0.0001 |  |  |  |
|   | Sex (male vs. female) |  | -23.32 (-42.57 - -4.07) | -0.47 | -2.37 | 0.0176 |  |  |  |
|   | Child's sex\*age |  | 2.25 (0.49 - 3.992) | 0.5 | 2.51 | 0.0122 |  |  |  |
|   | Family history of cholesterol |  | 5.38 (4.52 - 6.25) | 0.11 | 12.21 | 0.0001 |  |  |  |
|   | BMI percentile in fifth grade |  | 0.12 (0.11 - 0.14) | 0.14 | 15.61 | 0.0001 |  |  |  |
|   | Birth weight (grams) |  | **-0.0011 (-0.0019 - -0.0002)** | -0.02 | -2.33 | 0.0196 |  |  |  |
| HDL | Intercept | 15491 | 68.8 (64.25 - 73.35) | 0 | 29.66 | 0.0001 | 0.124 | 0.1228 | 0.0012 |
|   | Child's age in fifth grade |  | -0.97 (-1.35 - -0.59) | -0.04 | -5.02 | 0.0001 |  |  |  |
|   | Sex (male vs. female) |  | 2.18 (1.82 - 2.54) | 0.09 | 11.75 | 0.0001 |  |  |  |
|   | Race (white vs. other) |  | -2.71 (-3.53 - -1.89) | -0.05 | -6.48 | 0.0001 |  |  |  |
|   | Family history of CVD |  | -0.75 (-1.12 - -0.38) | -0.03 | -3.93 | 0.0001 |  |  |  |
|   | Maternal smoking (pregnancy) |  | -0.74 (-1.17 - -0.32) | -0.03 | -3.41 | 0.0007 |  |  |  |
|   | Maternal age at birth  |  | 0.05 (0.02 - 0.09) | 0.03 | 2.86 | 0.0042 |  |  |  |
|   | BMI percentile in fifth grade |  | -0.15 (-0.16 - -0.14) | -0.34 | -43.96 | 0.0001 |  |  |  |
|   | Birth weight (grams) |  | **0.001 (0.0006 - 0.0013)** | 0.04 | 4.59 | 0.0001 |  |  |  |
| Non-HDL | Intercept | 13221 | 137.4 (125.8-148.99) | 0 | 23.22 | 0.0001 | 0.0668 | 0.0659 | 0.0009 |
|   | Child's age in fifth grade |  | -3.57 (-4.56 - -2.57) | -0.06 | -7.04 | 0.0001 |  |  |  |
|   | Family history of cholesterol |  | 6.45 (5.47 - 7.43) | 0.11 | 12.91 | 0.0001 |  |  |  |
|   | Feeding intention  |  | -0.99 (-1.94 - -0.03) | -0.02 | -2.02 | 0.0435 |  |  |  |
|   | BMI percentile in fifth grade  |  | 0.23 (0.22 - 0.25) | 0.23 | 26.31 | 0.0001 |  |  |  |
|   | Birth weight (grams) |  | **-0.002 (-0.003 - -0.001)** | -0.032 | -3.75 | 0.0002 |  |  |  |
| Log-TG | Intercept | 12776 | 3.7 (3.49 - 3.92) | 0 | 33.85 | 0.0001 | 0.1421 | 0.1401 | 0.002 |
|   | Child's age in fifth grade |  | 0.04 (0.02 - 0.06) | 0.04 | 4.03 | 0.0001 |  |  |  |
|   | Sex (male vs. female) |  | -0.11 (-0.13 - -0.1) | -0.11 | -12.9 | 0.0001 |  |  |  |
|   | Race (white vs. other) |  | 0.15 (0.11 - 0.19) | 0.07 | 7.67 | 0.0001 |  |  |  |
|   | Family history of cholesterol |  | 0.06 (0.04 - 0.08) | 0.06 | 6.38 | 0.0001 |  |  |  |
|   | Family history of CVD |  | 0.02 (0.01 - 0.04) | 0.02 | 2.18 | 0.0296 |  |  |  |
|   | Maternal education at birth  |  | -0.01 (-0.02 - -0.01) | -0.04 | -4.18 | 0.0001 |  |  |  |
|   | BMI percentile in fifth grade |  | 0.006 (0.0059 - 0.0065) | 0.35 | 41.98 | 0.0001 |  |  |  |
|   | Birth weight (grams) |  | **-0.00005 (-0.00007 - -0.00004)** | -0.05 | -5.66 | 0.0001 |  |  |  |
| Only covariates that were significant in the Spearman’s correlation were used in the multiple regression analysis. Each non-significant covariate was deleted from the regression model one at a time. Variables retained in model for LDL: child's age, gender, interaction between age\*gender, and family history of cholesterol (yes vs. no); HDL: child's age, gender, race (white vs. other), family history of CVD (yes vs. no), maternal smoking status during pregnancy (yes vs. no), and maternal age at time of delivery; Non-HDL: child's age, family history of cholesterol (yes vs. no), and breastfeeding intention (breastfeed vs. both); TG: child's age, sex, race (white vs. other), family history of cholesterol (yes vs. no), family history of CVD (yes vs. no), and maternal education at birth. |

**Supplemental Table S2:** Results of the multiple regression analysis for the association between birth weight (categorical) and LDL, HDL, non-HDL, and TG levels of fifth-grade WV children born full term using merged data from the Birth Score Project (1994-2000) and the CARDIAC Project (2004-2010) for all infants who were born Full-Term (N=19583)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|   |   | N | Unstandardized regression coefficients and 95% CI | Standardized (Beta) | t Value | P-value | Adj-R2 | Reduced model Adj-R2 | Change in Adj-R2 |
| LDL | Intercept | 13139 | 138.95 (125.41 - 152.49) | 0 | 20.12 | <0.0001 | 0.0363 | 0.0361 | 0.0002 |
|   | Child's age in fifth grade |  | -5.21 (-6.44 - -3.97) | -0.11 | -8.26 | <0.0001 |  |  |  |
|   | Sex (male vs. female) |  | -23.54 (-42.79 - -4.29) | -0.48 | -2.4 | 0.0166 |  |  |  |
|   | Child's sex\*age |  | 2.25 (0.5 - 4.01) | 0.51 | 2.52 | 0.0118 |  |  |  |
|   | Family history of cholesterol |  | 5.39 (4.53 - 6.25) | 0.11 | 12.23 | <0.0001 |  |  |  |
|   | BMI percentile in fifth grade |  | 0.12 (0.11 - 0.14) | 0.14 | 15.46 | <0.0001 |  |  |  |
|   | LBW (<2500 gram) |  | **2.62 (0.05 - 5.18)** | 0.02 | 2 | 0.046 |  |  |  |
|   | HBW (>4000 grams) |  | 0.09 (-1.27 - 1.44) | 0.01 | 0.12 | 0.9022 |  |  |  |
| HDL | Intercept | 15491 | 71.93 (67.59 - 76.27) | 0 | 32.5 | <0.0001 | 0.1232 | 0.1228 | 0.0004 |
|   | Child's age in fifth grade |  | -1 (-1.37 - -0.62) | -0.04 | -5.15 | <0.0001 |  |  |  |
|   | Sex (male vs. female) |  | 2.26 (1.9 - 2.62) | 0.1 | 12.25 | <0.0001 |  |  |  |
|   | Race (white vs. other) |  | -2.66 (-3.47 - -1.84) | -0.05 | -6.35 | <0.0001 |  |  |  |
|   | Family history of CVD |  | -0.75 (-1.13 - -0.38) | -0.03 | -3.94 | <0.0001 |  |  |  |
|   | Maternal smoking (pregnancy) |  | -0.88 (-1.3 - -0.46) | -0.04 | -4.09 | <0.0001 |  |  |  |
|   | Maternal age at birth  |  | 0.06 (0.02 - 0.09) | 0.03 | 3.01 | 0.0026 |  |  |  |
|   | BMI percentile in fifth grade |  | -0.15 (-0.15 - -0.14) | -0.34 | -43.77 | <0.0001 |  |  |  |
|   | LBW (<2500 gram) |  | -0.85 (-1.96 - 0.26) | -0.02 | -1.5 | 0.1327 |  |  |  |
|   | HBW (>4000 grams) |  | **0.72 (0.13 - 1.31)** | 0.02 | 2.37 | 0.0177 |  |  |  |
| Non-HDL | Intercept | 13221 | 130.81 (119.82 - 141.8) | 0 | 23.33 | <0.0001 | 0.0662 | 0.0659 | 0.0003 |
|   | Child's age in fifth grade |  | -3.53 (-4.52 - -2.54) | -0.06 | -6.97 | <0.0001 |  |  |  |
|   | Family history of cholesterol |  | 6.46 (5.48 - 7.44) | 0.11 | 12.92 | <0.0001 |  |  |  |
|   | Feeding Intention  |  | -1.07 (-2.02 - -0.12) | -0.02 | -2.2 | 0.0281 |  |  |  |
|   | BMI Percentile in fifth grade |  | 0.23 (0.21 - 0.25) | 0.23 | 26.14 | <0.0001 |  |  |  |
|   | LBW (<2500 gram) |  | **3.19 (0.28 - 6.09)** | 0.02 | 2.15 | 0.0316 |  |  |  |
|   | HBW (>4000 grams) |  | -1.08 (-2.61 - 0.46) | -0.02 | -1.38 | 0.1671 |  |  |  |
| Log-TG | Intercept | 12776 | 3.54 (3.34 - 3.75) | 0 | 33.5 | <0.0001 | 0.1411 | 0.1401 | 0.001 |
|   | Child's age in fifth grade |  | 0.04 (0.02 - 0.06) | 0.04 | 4.17 | <0.0001 |  |  |  |
|   | Sex (male vs. female) |  | -0.12 (-0.13 - -0.1) | -0.12 | -13.4 | <0.0001 |  |  |  |
|   | Race (white vs. other) |  | 0.15 (0.11 - 0.19) | 0.07 | 7.52 | <0.0001 |  |  |  |
|   | Family history of cholesterol |  | 0.06 (0.04 - 0.08) | 0.06 | 6.42 | <0.0001 |  |  |  |
|   | Family history of CVD |  | 0.02 (0.01 - 0.04) | 0.02 | 2.17 | 0.0302 |  |  |  |
|   | Maternal education at birth  |  | -0.01 (-0.02 - -0.01) | -0.04 | -4.66 | <0.0001 |  |  |  |
|   | BMI percentile in fifth grade |  | 0.006 (0.0059 - 0.0065) | 0.35 | 41.8 | <0.0001 |  |  |  |
|   | LBW (<2500 gram) |  | 0.05 (-0.01 - 0.1) | 0.02 | 1.82 | 0.0684 |  |  |  |
|   | HBW (>4000 grams) |  | **-0.06 (-0.08 - -0.03)** | -0.04 | -3.77 | 0.0002 |  |  |  |
| Only covariates that were significant in the Spearman’s correlation were used in the multiple regression analysis. Each non-significant covariate was deleted from the regression model one at a time. Variables retained in model for LDL: child's age, gender, interaction between age\*gender, and family history of cholesterol (yes vs. no); HDL: child's age, gender, race (white vs. other), family history of CVD (yes vs. no), maternal smoking status during pregnancy (yes vs. no), and maternal age at time of delivery; Non-HDL: child's age, family history of cholesterol (yes vs. no), and breastfeeding intention (breastfeed vs. both); TG: child's age, sex, race (white vs. other), family history of cholesterol (yes vs. no), family history of CVD (yes vs. no), and maternal education at birth. |

**Supplemental Table S3:** Results of the Spline regression analysis for the association between birth weight and CVD risk factors of fifth-grade WV children using merged data from the Birth Score Project (1994-2000) and the CARDIAC Project (2004-2010) for all infants who were born Full-Term (N=19,583)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CVD risk factors**  | **BTW (grams)** | **Model 1** | **Model 2** | **Model 3** |
| **Child** |  | Unstandardized regression coefficients and 95% CI | P-value | Adjusted-R2 | Unstandardized regression coefficients and 95% CI | P-value | Adjusted-R2 | Unstandardized regression coefficients and 95% CI | P-value | Adjusted-R2 |
| **SBP** | < 2500 | -0.00009(-0.004 - 0.004) | 0.9616 | 0.0007 | -0.00105(-0.0045 - 0.0023) | 0.5437 | 0.1156 | 0.00395(-0.0006 - 0.0085) | 0.0874 | 0.1403 |
|  | 2500 - 4000 | 0.0006(-0.0031 -0.0043) | 0.7712 |  | 0.00072(-0.0028 - 0.0042) | 0.6871 |  | -0.0045(-0.009 - 0.0002) | 0.0636 |  |
|  | > 4000 | 0.00156(-0.0003 - 0.0033) | 0.0928 |  | 0.00103(-0.0007 - 0.0028) | 0.2391 |  | 0.00157(-0.0001 - 0.004) | 0.2245 |  |
| **DBP** | < 2500 | -0.0009(-0.0037 -0.0019) | 0.5125 | 0.001 | -0.00171(-0.004 - 0.001) | 0.2182 | 0.0685 | -0.0008(-0.004 - 0.002) | 0.6287 | 0.0732 |
|  | 2500 - 4000 | 0.002(-0.001 - 0.004) | 0.3029 |  | 0.0018(-0.001 - 0.005) | 0.204 |  | 0.0009(-0.003 - 0.004) | 0.601 |  |
|  | > 4000 | 0.0006(-0.0008 - 0.002) | 0.4222 |  | 0.0002(-0.0012 - 0.002) | 0.7528 |  | 0.0003(-0.001 - 0.002) | 0.722 |  |
| **TC** | < 2500 | **-0.00935****(-0.0184 -0.00021)** | **0.045** | 0.0001 | **-0.0098****(-0.019 - -0.0007)** | **0.0342** | 0.0093 | **-0.012****(-0.022 - -0.0017)** | **0.0224** | 0.0258 |
|  | 2500 - 4000 | **0.01011****(0.00061 -0.0196)** | **0.0368** |  | **0.01008****(0.0006 - 0.0195)** | **0.0364** |  | **0.0119****(0.0011 - 0.02264)** | **0.0307** |  |
|  | > 4000 | -0.0008(-0.005 - 0.004) | 0.728 |  | -0.0012(-0.006 - 0.004) | 0.6235 |  | -0.0012(-0.006 - 0.004) | 0.649 |  |
| **LDL** | < 2500 | -0.005(-0.013 - 0.0026) | 0.1874 | 0 | -0.006(-0.014 - 0.0019) | 0.1379 | 0.0217 | **-0.009****(-0.018 - -0.0002)** | **0.0445** | 0.0366 |
|  | 2500 - 4000 | 0.0055(-0.0028 - 0.0139) | 0.1934 |  | 0.005(-0.002 - 0.013) | 0.195 |  | 0.008(-0.001 - 0.017) | 0.0838 |  |
|  | > 4000 | 0.00164(-0.00251 0.0058) | 0.4384 |  | 0.0012(-0.003 - 0.005) | 0.585 |  | 0.002(-0.003- 0.006) | 0.4733 |  |
| **HDL** | < 2500 | -0.002(-0.006 - 0.002) | 0.369 | 0.0007 | -0.002(-0.005 - 0.003) | 0.527 | 0.1109 | -0.0005(-0.004 - 0.003) | 0.8068 | 0.124 |
|  | 2500 - 4000 | 0.0028(-0.0013 - 0.0068) | 0.1849 |  | 0.0029(-0.0009 - 0.0067) | 0.1384 |  | 0.0016(-0.0023 - 0.0054) | 0.4195 |  |
|  | > 4000 | **-0.00225****(-0.0043 - 0.00023)** | **0.0291** |  | -0.0012(-0.003 - 0.0004) | 0.1088 |  | -0.0013(-0.003 - 0.0006) | 0.1905 |  |
| **Non-HDL** | < 2500 | -0.007(-0.016 - 0.002) | 0.1233 | 0 | -0.008(-0.017 - 0.0007) | 0.0689 | 0.0558 | **-0.0117****(-0.022 - -0.0015)** | **0.0248** | 0.0669 |
|  | 2500 - 4000 | 0.0069(-0.0027 - 0.0165) | 0.1571 |  | 0.00674(-0.0026 - 0.0161) | 0.1568 |  | 0.01007(-0.0006 - 0.0207) | 0.0633 |  |
|  | > 4000 | 0.0017(-0.003 - 0.0065) | 0.4743 |  | 0.0007(-0.0039 - 0.0054) | 0.7625 |  | 0.0008(-0.004 - 0.006) | 0.7483 |  |
| **Log-TG** | < 2500 | -0.00006(-0.00023 - 0.0001) | 0.4508 | 0.0007 | -0.00009(-0.00024 -0.00006) | 0.2547 | 0.1264 | -0.0001(-0.0003 - 0.00004) | 0.1288 | 0.1429 |
|  | 2500 - 4000 | 0.00003(-0.00014 - 0.0002) | 0.7456 |  | 0.00002(-0.00014 - 0.00018) | 0.8041 |  | 0.00009(-0.00009 - 0.00027) | 0.3313 |  |
|  | > 4000 | 0.00005(-0.00003 - 0.00014) | 0.2098 |  | 0.00003(-0.00005 - 0.00011) | 0.5188 |  | 0.000004(-0.00009 - 0.00008) | 0.9275 |  |
| Spline Knots at LBW <2,500 grams and HBW >4000gramsVariables included in the model: Model 1: All the outcomes were regressed on birth weight. Model 2: All the outcomes were regressed on birth weight variable and the child's BMI percentile in fifth grade. Model 3: All the outcomes were regressed on birth weight and the child's BMI percentile and additional covariates. Only covariates that were significant in the Spearman’s correlation were used in the multiple regression analysis. Each non-significant covariate was deleted from the regression model one at a time. Variables retained in model for SBP: child's age, race (white vs. other), maternal health insurance status at time of delivery (non-Medicaid vs. Medicaid), and family history of cholesterol (yes vs. no); DBP: child's age, race (white vs. other), and family history of cholesterol (yes vs. no); TC: child's age, race (white vs. other), and family history of cholesterol (yes vs. no); LDL: child's age, gender, interaction between age\*gender, and family history of cholesterol (yes vs. no); HDL: child's age, gender, race (white vs. other), family history of CVD (yes vs. no), maternal smoking status during pregnancy (yes vs. no), and maternal age at time of delivery; Non-HDL: child's age, family history of cholesterol (yes vs. no), and breastfeeding intention (breastfeed vs. both); TG: child's age, sex, race (white vs. other), family history of cholesterol (yes vs. no), family history of CVD (yes vs. no), and maternal education at birth. |