



Article

# Supplementary Materials: Association between Levels of Urine Di-(2-ethylhexyl)phthalate Metabolites and Heart Rate Variability in Young Adults

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**Table S1.** Linear regression coefficients of cardiovascular disease risk factors and time-domain HRV analysis.

|                      | Mean RRI |         | SDNN   |         | RMSSD  |         | pNN50  |         | Triangular index |         | TINN   |         |
|----------------------|----------|---------|--------|---------|--------|---------|--------|---------|------------------|---------|--------|---------|
|                      | Beta     | p-value | Beta   | p-value | Beta   | p-value | Beta   | p-value | Beta             | p-value | Beta   | p-value |
| Age, (yrs)           | -0.001   | 0.050*  | -0.010 | 0.001*  | -0.017 | 0.001*  | -0.037 | 0.001*  | -0.009           | 0.001*  | -0.007 | 0.001*  |
| Men                  | 0.019    | 0.001*  | 0.058  | 0.001*  | 0.004  | 0.821   | -0.055 | 0.202   | 0.027            | 0.014*  | -0.003 | 0.823   |
| BMI                  | -0.007   | 0.001*  | -0.004 | 0.528   | -0.040 | 0.001*  | -0.107 | 0.001*  | -0.005           | 0.317   | 0.009  | 0.189   |
| Z score              |          |         |        |         |        |         |        |         |                  |         |        |         |
| SBP, (mmHg)          | -0.001   | 0.001*  | -0.001 | 0.001*  | -0.005 | 0.001*  | -0.011 | 0.001*  | -0.001           | 0.001*  | 0.001  | 0.083   |
| DBP, (mmHg)          | -0.001   | 0.001*  | -0.002 | 0.001*  | -0.006 | 0.001*  | -0.014 | 0.001*  | -0.002           | 0.001*  | 0.000  | 0.513   |
| Glucose, (mg/dL)     | -0.007   | 0.001*  | -0.021 | 0.001*  | -0.035 | 0.001*  | -0.040 | 0.106   | -0.016           | 0.001*  | -0.010 | 0.123   |
| HbA1C (%)            | -0.014   | 0.001*  | -0.036 | 0.001*  | -0.075 | 0.001*  | -0.141 | 0.001*  | -0.025           | 0.002*  | -0.009 | 0.379   |
| Cholesterol, (mg/dL) | -0.006   | 0.001*  | -0.010 | 0.069   | -0.026 | 0.001*  | -0.049 | 0.001*  | -0.005           | 0.273   | 0.009  | 0.158   |
| LDL-C, (mg/dL)       | -0.005   | 0.010   | -0.007 | 0.270   | -0.030 | 0.001   | -0.076 | 0.001   | -0.006           | 0.292   | 0.009  | 0.237   |
| Creatinine, (mg/ dL) | 0.002    | 0.544   | -0.017 | 0.096   | -0.029 | 0.042   | 0.003  | 0.981   | -0.019           | 0.045   | -0.025 | 0.033   |
| Smoker               | 0.012    | 0.016   | 0.029  | 0.067   | 0.012  | 0.561   | 0.037  | 0.517   | 0.005            | 0.7310  | -0.002 | 0.924   |
| Education            | 0.004    | 0.537   | 0.013  | 0.526   | 0.014  | 0.613   | -0.105 | 0.171   | 0.015            | 0.402   | -0.020 | 0.389   |

Abbreviations: BMI: body mass index, SBP: systolic blood pressure; DBP: diastolic blood pressure; Glucose: fasting blood glucose; HbA1C: glycated hemoglobin, %; LDL: low-density lipoprotein, Mean RRI: log-transformed mean RR index, SDNN: log-transformed standard deviation of NN intervals, RMSSD: log-transformed root mean square of successive RR interval differences, pNN50: log-transformed percentage of successive RR intervals that differ by more than 50 ms, TINN: log-transformed baseline width of the RR interval histogram, Beta: beta coefficient.\*  $p$  value < 0.05.

**Table S2.** Linear regression coefficients of cardiovascular disease risk factors and frequency-domain HRV analysis.

|                    | Log VLF<br>(0.00–0.04 Hz) |         | Log LF<br>(0.04–0.15 Hz) |         | Log HF<br>(0.15–0.4 Hz) |         | Log LF/HF Ratio |         |
|--------------------|---------------------------|---------|--------------------------|---------|-------------------------|---------|-----------------|---------|
|                    | Beta                      | p-value | Beta                     | p-value | Beta                    | p-value | Beta            | p-value |
| Age, yrs           | -0.008                    | 0.019*  | -0.023                   | 0.001*  | -0.034                  | 0.001*  | 0.012*          | 0.001*  |
| Men                | 0.161                     | 0.001*  | 0.163                    | 0.001*  | -0.042                  | 0.210   | 0.217           | 0.001*  |
| BMI Z score        | 0.047                     | 0.002*  | -0.003                   | 0.808   | -0.095                  | 0.001*  | 0.095           | 0.001*  |
| SBP, mmHg          | 0.001                     | 0.641   | -0.003                   | 0.008*  | -0.011                  | 0.001*  | 0.008*          | 0.001*  |
| DBP, mmHg          | -0.002                    | 0.126   | -0.005                   | 0.001*  | -0.013                  | 0.001*  | 0.007*          | 0.001*  |
| Glucose, mg/dL     | -0.026                    | 0.050*  | -0.031                   | 0.017*  | -0.082                  | 0.001*  | 0.051           | 0.001*  |
| HbA1C, %           | -0.015                    | 0.500   | -0.068                   | 0.002*  | -0.165                  | 0.001*  | 0.095           | 0.001*  |
| Cholesterol, mg/dL | -0.008                    | 0.575   | -0.005                   | 0.703   | -0.048                  | 0.002*  | 0.044           | 0.001*  |
| LDL-C, mg/dL       | 0.020                     | 0.217   | 0.011                    | 0.490   | -0.062                  | 0.001*  | 0.074           | 0.001*  |
| Creatinine, mg/ dL | -0.018                    | 0.484   | -0.035                   | 0.160   | -0.071                  | 0.012*  | 0.037*          | 0.122   |
| Smoker             | 0.042                     | 0.283   | 0.054                    | 0.145   | -0.006                  | 0.897   | 0.057           | 0.119   |
| Education          | 0.040                     | 0.443   | 0.064                    | 0.190   | 0.030                   | 0.595   | 0.002*          | 0.971   |

Abbreviations: BMI: body mass index; SBP: systolic blood pressure, DBP: diastolic blood pressure, Glucose: fasting blood glucose, HbA1C: glycated hemoglobin, LDL-C: low density lipoprotein cholesterol.\* p value < 0.05.