|  |
| --- |
| **Table S1. Results of Regression Models for Effects of MetS on Language Outcomes - Accuracy** |
| **ANT** | **Model 1** |  |  | **Model 2** |  |  | **BNT** | **Model 1** |  |  | **Model 2** |  |  |
|  | **b** | **se** | **sig** | **b** | **se** | **sig** |  | **b** | **se** | **sig** | **b** | **se** | **sig** |
| intercept | 94.284 |  |  | 92.605 |  |  | intercept | 83.425 |  |  | 80.439 |  |  |
| age | -0.053 | 0.034 |  | -0.048 | 0.035 |  | age | -0.101 | 0.055 | + | -0.083 | 0.550 |  |
| female | 0.686 | 0.488 |  | 0.775 | 0.497 |  | female | 3.034 | 7.940 | \*\*\* | 3.027 | 0.797 | \*\*\* |
| yrs ed | 0.370 | 0.129 |  | 0.359 | 0.128 | \*\* | yrs ed | 1.014 | 0.206 | \*\*\* | 1.000 | 0.203 | \*\*\* |
| have DM |  |  |  | 0.191 | 0.740 |  | have DM |   |   |   | -0.761 | 1.168 |  |
| have HT |  |  |  | 1.522 | 0.607 | \* | have HT |   |   |   | 3.165 | 0.980 | \*\* |
| have CHD |  |  |  | 1.301 | 0.583 | \* | have CHD |   |   |   | 2.395 | 0.545 | \* |
| MetS | -1.181 | 0.502 | \* | -0.941 | 0.556 | + | MetS | -0.703 | 0.818 |  | -0.357 | 0.893 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model F | 5.33 |  |  | 4.200 |  |  | Model F | 11.66 |  |  | 8.52 |  |  |
| df | 4, 250 |  |  | 7, 247 |  |  | df | 4, 268 |  |  | 7, 265 |  |  |
| p | <.001 |  |  | <.002 |  |  | p | <.001 |  |  | <.001 |  |  |
| R2 | 0.079 |  |  | 0.106 |  |  | R2 | 0.148 |  |  | 0.184 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **ES** | **Model 1** |  |  | **Model 2** |  |  | **MN** | **Model 1** |  |  | **Model 2** |  |  |
|  | **b** | **se** | **sig** | **b** | **se** | **sig** |  | **b** | **se** | **sig** | **b** | **se** | **sig** |
| intercept | 99.330 |  |  | 99.386 |  |  | intercept | 95.272 |  |  | 91.382 |  |  |
| age | -0.252 | 0.071 | + | -0.242 | 0.073 | \*\*\* | age | -0.079 | 0.054 |  | -0.075 | 0.055 |  |
| female | -1.752 | 1.055 |  | -1.860 | 1.089 |  | female | -1.669 | 0.790 | \* | -1.552 | 0.805 | + |
| yrs ed | 0.650 | 0.276 | \* | 0.660 | 0.278 | \*\*\* | yrs ed | 0.272 | 0.209 |  | 0.286 | 0.205 |  |
| have DM |  |  |  | -1.020 | 1.564 |  | have DM |   |   |   | 1.715 | 1.220 |  |
| have HT |  |  |  | 0.049 | 1.367 |  | have HT |   |   |   | 2.681 | 0.987 | \*\* |
| have CHD |  |  |  | 0.332 | 1.308 |  | have CHD |   |   |   | 0.385 | 0.946 |  |
| MetS | -2.976 | 1.082 | \*\* | -3.288 | 1.225 | \* | MetS | -0.567 | 0.819 |  | 0.783 | 0.913 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model F | 9.64 |  |  | 5.53 |  |  | Model F | 2.93 |  |  | 3.35 |  |  |
| df | 4, 249 |  |  | 7, 246 |  |  | df | 4, 234 |  |  | 7, 231 |  |  |
| p | <.001 |  |  | <.001 |  |  | p | <.03 |  |  | <.002 |  |  |
| R2 | 0.134 |  |  | 0.136 |  |  | R2 | 0.048 |  |  | 0.092 |  |  |

Note: + p < 0.10; \* p < 0.05; \*\* p < 0.005; DM = Diabetes Mellitus; HT = Hypertension; CHD = Coronary Heart Disease

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Table S2. Results of Regression Models for Effects of MetS on Language Outcomes - Reaction Time** |  |  |  |  |
| **ANT** | **Model 1** |  |  | **Model 2** |  |  | **BNT** | **Model 1** |  |  | **Model 2** |  |  |
|  | **b** | **se** | **sig** | **b** | **se** | **sig** |  | **b** | **se** | **sig** | **b** | **se** | **sig** |
| intercept | 1395.900 |  |  | 1534.300 |  |  | intercept | 1610.588 |  |  | 1694.354 |  |  |
| age | 2.990 | 2.820 |  | 3.542 | 2.860 |  | age | 1.844 | 2.305 |  | 1.480 | 2.348 |  |
| female | -50.225 | 40.226 |  | -67.020 | 40.920 |  | female | -50.538 | 33.396 |  | -51.887 | 33.929 |  |
| yrs ed | -14.611 | 10.590 |  | -13.639 | 10.522 |  | yrs ed | -27.609 | 8.658 | \*\* | -26.926 | 8.659 | \*\* |
| have DM |   |   |   | -124.304 | 61.563 | \* | have DM |   |   |   | 1.927 | 49.855 |  |
| have HT |   |   |   | -79.992 | 49.752 |  | have HT |   |   |   | -81.135 | 41.792 | + |
| have CHD |   |   |   | -60.492 | 48.080 |  | have CHD |   |   |   | -65.546 | 40.108 |  |
| MetS | -37.434 | 41.539 |  | -79.803 | 46.304 | + | MetS | -20.547 | 34.295 |  | -32.948 | 38.035 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model F | 1.47 |  |  | 1.85 |  |  | Model F | 3.54 |  |  | 2.64 |  |  |
| df | 4, 244 |  |  | 7, 241 |  |  | df | 4, 264 |  |  | 7, 261 |  |  |
| p | 0.22 |  |  | 0.078 |  |  | p | <.01 |  |  | 0.012 |  |  |
| R2 | 0.024 |  |  | 0.051 |  |  | R2 | 0.059 |  |  | 0.066 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **ES** | **Model 1** |  |  | **Model 2** |  |  | **MN** | **Model 1** |  |  | **Model 2** |  |  |
|  | **b** | **se** | **sig** | **b** | **se** | **sig** |  | **b** | **se** | **sig** | **b** | **se** | **sig** |
| intercept | 545.172 |  |  | 454.013 |  |  | intercept | 658.709 |  |  | 640.330 |  |  |
| age | 26.662 | 5.638 | \*\*\* | 26.129 | 5.787 | \*\*\* | age | 12.741 | 4.502 | \*\* | 13.372 | 4.651 | \*\* |
| female | -42.314 | 85.501 |  | -23.754 | 86.089 |  | female | 11.676 | 65.522 |  | -0.417 | 68.460 |  |
| yrs ed | -45.607 | 21.905 | \* | -46.737 | 22.026 | \* | yrs ed | -40.730 | 17.326 | \* | -39.948 | 17.451 | \* |
| have DM |   |   |   | 81.571 | 121.630 |  | have DM |   |   |   | -44.625 | 103.057 |  |
| have HT |   |   |   | 55.741 | 108.406 |  | have HT |   |   |   | 28.878 | 83.414 |  |
| have CHD |   |   |   | 85.299 | 103.280 |  | have CHD |   |   |   | -21.969 | 80.256 |  |
| MetS | -156.210 | 85.930 | + | -135.878 | 97.604 |  | MetS | -21.968 | 67.858 |  | -16.421 | 77.576 |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Model F | 8.93 |  |  | 5.23 |  |  | Model F | 4.40 |  |  | 2.57 |  |  |
| df | 4, 248 |  |  | 7, 245 |  |  | df | 4, 232 |  |  | 7, 229 |  |  |
| p | <.001 |  |  | <.001 |  |  | p | <.002 |  |  | 0.015 |  |  |
| R2 | 0.126 |  |  | 0.130 |  |  | R2 | 0.070 |  |  | 0.073 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

Note: + p < 0.10; \* p < 0.05; \*\* p < 0.005; \*\*\* p < 0.001; DM = Diabetes Mellitus; HT = Hypertension; CHD = Coronary Heart Disease

**Table S3. Results of Regression Models for Effects of MetS on Sentence Comprehension Subtasks – Accuracy**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **MN subtasks****0N** | **Model** **1** |  |  | **Model** **2** |  |  | **1N** | **Model** **1** |  |  | **Model 2** |  |  | **2N** | **Model** **1** |  |  | **Model** **2** |  |  |
|   | **b** | **se** | **sig** | **b** | **se** | **sig** |   | **b** | **se** | **sig** | **b** | **se** | **sig** |   | **b** | **se** | **sig** | **b** | **se** | **sig** |
| intercept | 93.73 |  |  | 94.15 |  |  | intercept | 88.77 |  |  | 88.02 |  |  | intercept | 87.56 |  |  | 88.90 |  |  |
| age | -0.02 | 0.06 |  | -0.02 | 0.06 |  | age | -0.02 | 0.09 |  | -0.00 | 0.09 |  | age | -0.21 | 0.13 |  | -0.20 | 0.13 |  |
| female | 0.74 | 0.84 |  | 0.78 | 0.87 |  | female | 1.73 | 1.28 |  | 1.73 | 1.33 |  | female | 4.45 | 1.95 | \* | 4.11 | 1.98 | \* |
| yrs ed | 0.26 | 0.22 |  | 0.28 | 0.22 |  | yrs ed | 0.46 | 0.34 |  | 0.46 | 0.34 |  | yrs ed | 0.79 | 0.51 |  | 0.82 | 0.50 |  |
| have DM |  |  |  | -1.00 | 1.31 |  | have DM |  |  |  | 0.08 | 2.01 |  | have DM |  |  |  | -4.47 | 2.98 |  |
| have HT |  |  |  | -1.30 | 1.06 |  | have HT |  |  |  | -2.76 | 1.63 | + | have HT |  |  |  | -7.47 | 2.42 | \*\* |
| have CHD |  |  |  | -0.68 | 1.02 |  | have CHD |  |  |  | 1.68 | 1.56 |  | have CHD |  |  |  | 1.95 | 2.32 |  |
| MetS | 0.75 | 0.87 |  | 1.68 | 0.98 |  | MetS | -1.35 | 1.32 |  | -0.74 | 1.51 |  | MetS | -0.93 | 2.01 |  | 2.57 | 2.24 |  |
| Model F | 0.72 |  |  | 1.08 |  |  | Model F | 1.54 |  |  | 1.29 |  |  | Model F | 3.38 |  |  | 3.88 |  |  |
| df | 4, 233 |  |  | 7, 230 |  |  | df | 4, 233 |  |  | 7,230 |  |  | df | 4, 233 |  |  | 7, 230 |  |  |
| p | 0.6 |  |  | 0.38 |  |  | p | 0.2 |  |  | 0.25 |  |  | p | 0.011 |  |  | <.001 |  |  |
| R2 | 1.2 |  |  | 3.2 |  |  | R2 | 2.6 |  |  | 3.8 |  |  | R2 | 5.5 |  |  | 10.6 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **ES Subtasks****C** | **Model** **1** |  |  | **Model** **2** |  |  | **SR** | **Model** **1** |  |  | **Model 2** |  |  | **OR** | **Model** **1** |  |  | **Model 2** |  |  |
|   | **b** | **se** | **sig** | **b** |  | **sig** |   | **b** | **se** | **sig** | **b** | **se** | **sig** |   | **b** | **se** | **sig** | **b** | **se** | **sig** |
| intercept | 98.33 |  |  | 99.56 |  |  | intercept | 103.83 |  |  | 102.59 |  |  | intercept | 98.47 |  |  | 95.77 |  |  |
| age | -0.16 | 0.08 | \* | -0.18 | 0.08 | \* | age | -0.27 | 0.08 | \*\* | -0.24 | 0.09 | \* | age | -0.35 | 0.09 | \*\*\* | -0.33 | 0.09 | \*\*\* |
| female | 1.70 | 1.16 |  | 1.56 | 1.19 |  | female | 1.73 | 1.25 |  | 1.94 | 1.29 |  | female | 1.82 | 1.32 |  | 2.06 | 1.35 |  |
| yrs ed | 0.34 | 0.30 |  | 0.33 | 0.31 |  | yrs ed | 0.48 | 0.33 |  | 0.49 | 0.33 |  | yrs ed | 1.09 | 0.35 | \*\* | 1.12 | 0.35 | \*\* |
| have DM |  |  |  | -1.38 | 1.71 |  | have DM |  |  |  | 1.55 | 1.85 |  | have DM |  |  |  | 3.00 | 1.94 |  |
| have HT |  |  |  | 1.50 | 1.50 |  | have HT |  |  |  | -1.64 | 1.62 |  | have HT |  |  |  | 0.30 | 1.70 |  |
| have CHD |  |  |  | -1.05 | 1.43 |  | have CHD |  |  |  | 0.56 | 1.55 |  | have CHD |  |  |  | 1.49 | 1.62 |  |
| MetS | -1.20 | 1.19 |  | -1.18 | 1.35 |  | MetS | -3.63 | 1.29 | \* | -3.52 | 1.46 | \* | MetS | -4.46 | 1.36 | \*\* | -5.69 | 1.53 | \*\*\* |
| Model F | 2.98 |  |  | 1.93 |  |  | Model F | 7.08 |  |  | 4.28 |  |  | Model F | 12.96 |  |  | 8.00 |  |  |
| df | 4, 249 |  |  | 7, 246 |  |  | df | 4, 249 |  |  | 7, 246 |  |  | df | 4, 249 |  |  | 7, 246 |  |  |
| p | <.02 |  |  | 0.067 |  |  | p | <.001 |  |  | <.001 |  |  | p | <.001 |  |  | <.001 |  |  |
| R2 | 4.6 |  |  | 5.2 |  |  | R2 | 10.2 |  |  | 10.9 |  |  | R2 | 17.2 |  |  | 18.5 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Note: + p < 0.10; \*p < 0.05; \*\*p < 0.005; \*\*\* p < 0.001; DM = Diabetes Mellitus; HT = Hypertension; CHD = Coronary Heart Disease; 0N =Zero Negatives; 1N = One-Negatives; 2N=Two-Negatives; C = Control Sentences; SR = Subject-Relatives; OR = Object-Relatives**Table S4. Results of Regression Models for Effects of MetS on Sentence Comprehension Subtasks – Reaction Time**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **MN subtasks****0N** | **Model** **1** |  |  | **Model** **2** |  |  | **1N** | **Model** **1** |  |  | **Model** **2** |  |  | **2N** | **Model** **1** |  |  | **Model** **2** |  |  |
|   | **b** | **se** | **sig** | **b** | **se** | **sig** |   | **b** | **se** | **sig** | **b** | **se** | **sig** |   | **b** | **se** | **sig** | **b** | **se** | **sig** |
| intercept | 190.12 |  |  | 210.40 |  |  | intercept | 1086.18 |  |  | 1043.19 |  |  | intercept | 947.77 |  |  | 829.76 |  |  |
| age | 14.57 | 3.94 | \*\*\* | 14.33 | 4.08 | \*\*\* | age | 13.84 | 6.12 | \* | 14.43 | 6.33 | \* | age | 17.23 | 7.10 | \* | 19.32 | 7.31 | \* |
| female | -22.78 | 57.79 |  | -29.29 | 60.37 |  | female | -5.58 | 89.90 |  | 13.66 | 93.67 |  | female | 16.55 | 104.82 |  | 48.23 | 108.42 |  |
| yrs ed | -32.42 | 15.21 | \* | -32.70 | 15.34 | \* | yrs ed | -65.64 | 23.68 | \* | -64.58 | 23.84 | \* | yrs ed | -36.29 | 27.64 |  | -33.02 | 27.74 |  |
| have DM |  |  |  | -35.07 | 90.88 |  | have DM |  |  |  | 80.23 | 140.92 |  | have DM |  |  |  | 121.62 | 163.43 |  |
| have HT |  |  |  | -16.65 | 73.67 |  | have HT |  |  |  | 38.03 | 114.11 |  | have HT |  |  |  | -143.65 | 131.43 |  |
| have CHD |  |  |  | 19.05 | 70.76 |  | have CHD |  |  |  | -78.17 | 109.69 |  | have CHD |  |  |  | -41.83 | 126.75 |  |
| MetS | -32.26 | 59.59 |  | -22.12 | 68.20 |  | MetS | -27.27 | 92.94 |  | -41.11 | 106.16 |  | MetS | 55.29 | 108.28 |  | 92.87 | 123.20 |  |
| Model F | 5.85 |  |  | 3.34 |  |  | Model F | 4.07 |  |  | 2.42 |  |  | Model F | 2.43 |  |  | 1.78 |  |  |
| df | 4, 233 |  |  | 7, 230 |  |  | df | 4, 232 |  |  | 7, 229 |  |  | df | 4, 227 |  |  | 7, 224 |  |  |
| p | <.001 |  |  | <.003 |  |  | p | <.004 |  |  | 0.021 |  |  | p | <.05 |  |  | <.10 |  |  |
| R2 | 9.1 |  |  | 9.200 |  |  | R2 | 6.6 |  |  | 6.9 |  |  | R2 | 4.1 |  |  | 5.3 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ES subtasks****C** | **Model** **1** |  |  | **Model 2** |  |  | **SR** | **Model** **1** |  |  | **Model** **2** |  |  | **OR** | **Model** **1** |  |  | **Model** **2** |  |  |
|   | **b** | **se** | **sig** | **b** | **se** | **sig** |   | **b** | **se** | **sig** | **b** | **se** | **sig** |   | **b** | **se** | **sig** | **b** | **se** | **sig** |
| intercept | 459.85 |  |  | 461.63 |  |  | intercept | 675.56 |  |  | 777.89 |  |  | intercept | 462.21 |  |  | 534.65 |  |  |
| age | 23.43 | 5.15 | \*\*\* | 23.14 | 5.28 | \*\*\* | age | 25.80 | 6.05 | \*\*\* | 24.69 | 6.19 | \*\*\* | age | 29.61 | 6.71 | \*\*\* | 28.84 | 6.89 | \*\*\* |
| female | 126.03 | 76.24 | + | 109.64 | 78.38 |  | female | 19.63 | 89.50 |  | -5.91 | 92.02 |  | female | -9.00 | 99.20 |  | -28.23 | 102.34 |  |
| yrs ed | -30.84 | 20.10 |  | -31.43 | 20.17 |  | yrs ed | -49.53 | 23.59 | \* | -51.13 | 23.69 | \* | yrs ed | -43.97 | 26.09 | + | -45.29 | 26.25 | + |
| have DM |  |  |  | -40.64 | 113.53 |  | have DM |  |  |  | -154.98 | 133.29 |  | have DM |  |  |  | -107.42 | 147.41 |  |
| have HT |  |  |  | -39.43 | 99.29 |  | have HT |  |  |  | -54.07 | 116.57 |  | have HT |  |  |  | -44.57 | 129.24 |  |
| have CHD |  |  |  | 116.27 | 94.30 |  | have CHD |  |  |  | 62.80 | 110.71 |  | have CHD |  |  |  | 55.93 | 123.19 |  |
| MetS | -84.97 | 78.51 |  | -89.18 | 89.18 |  | MetS | -199.85 | 92.17 | \* | -156.66 | 104.70 |  | MetS | -186.38 | 102.26 | + | -156.50 | 116.40 |  |
| Model F | 7.4 |  |  | 4.46 |  |  | Model F | 8.14 |  |  | 4.88 |  |  | Model F | 7.7 |  |  | 4.47 |  |  |
| df | 4, 48 |  |  | 7, 245 |  |  | df | 4, 248 |  |  | 7, 245 |  |  | df | 4, 249 |  |  | 7, 246 |  |  |
| p | <.001 |  |  | <.001 |  |  | p | <.001 |  |  | <.001 |  |  | p | <.001 |  |  | <.001 |  |  |
| R2 | 10.7 |  |  | 11.3 |  |  | R2 | 11.6 |  |  | 12.2 |  |  | R2 | 11.0 |  |  | 11.3 |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Note: + p < 0.10; \*p < 0.05; \*\*p < 0.005; \*\*\* p < 0.001; DM = Diabetes Mellitus; HT = Hypertension; CHD = Coronary Heart Disease; 0N =Zero Negatives; 1N = One-Negatives; 2N=Two-Negatives; C = Control Sentences; SR = Subject-Relatives; OR = Object-Relatives |