**Supplementary Table S1: Summary of DRS Trajectory Multivariable Model**

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| --- | --- | --- | --- | --- | --- | --- |
| **Model Details** |  |  |  |  |  |  |
| Sample Size (*N*) | 4624 |  |  |  |  |  |
| AIC | 57363.8 |  |  |  |  |  |
| **Random Subject Effects** | **Estimate** | **SE** | **LCL** | **UCL** | ***z*-value** | ***p*-value** |
| Variance (Intercept) | 17.337 | 0.361 | 16.650 | 18.068 | 47.99 | < 0.0001 |
| Variance (Slope) | 10.294 | 0.215 | 9.886 | 10.727 | 47.99 | < 0.0001 |
| Variance (Slope2) | 0.259 | 0.005 | 0.249 | 0.270 | 47.99 | < 0.0001 |
| Covariance (Intercept, Slope) | -11.224 | 0.257 | -11.728 | -10.721 | -43.66 | < 0.0001 |
| Covariance (Intercept, Slope2) | 1.645 | 0.040 | 1.567 | 1.722 | 41.60 | < 0.0001 |
| Covariance (Slope, Slope2) | -1.607 | 0.338 | -1.673 | -1.541 | -47.60 | < 0.0001 |
| Residual | 3.55 × 10-7 | 1.6 × 10-5 | - | - | 0.02 | 0.4911 |
| **Fixed Effects** | **Estimate** | **SE** | **LCL** | **UCL** | ***t*-valuea**  | ***p*-value** |
| Intercept | 3.165 | 0.615 | 1.959 | 4.371 | 5.14 | < 0.0001 |
| Time | -0.097 | 0.474 | -1.026 | 0.833 | -0.20 | 0.8385 |
| Time × Time | 0.005 | 0.075 | -0.143 | 0.152 | 0.06 | 0.9509 |
| Sex (Female) | -0.090 | 0.142 | -0.368 | 0.188 | -0.63 | 0.5259 |
| Time × Sex | 0.049 | 0.109 | -0.165 | 0.264 | 0.45 | 0.6513 |
| Time × Time × Sex | -0.007 | 0.017 | -0.041 | 0.027 | -0.42 | 0.6757 |
| Race (Not White) | 0.644 | 0.139 | 0.372 | 0.917 | 4.63 | < 0.0001 |
| Time × Race | -0.117 | 0.107 | -0.327 | 0.093 | -1.09 | 0.2742 |
| Time × Time × Race | 0.002 | 0.017 | -0.031 | 0.035 | 0.12 | 0.9053 |
| Marital (Married) | -0.197 | 0.165 | -0.521 | 0.127 | -1.19 | 0.2333 |
| Time × Marital | 0.070 | 0.127 | -0.180 | 0.320 | 0.55 | 0.5840 |
| Time × Time × Marital | -0.016 | 0.020 | -0.056 | 0.024 | -0.79 | 0.4275 |
| Live (Alone) | -0.034 | 0.162 | -0.352 | 0.284 | -0.21 | 0.8324 |
| Time × Live | 0.009 | 0.125 | -0.236 | 0.254 | 0.07 | 0.9433 |
| Time × Time × Live | -0.003 | 0.020 | -0.042 | 0.036 | -0.15 | 0.8825 |
| Substance (No) | -0.185 | 0.130 | -0.440 | 0.071 | -1.42 | 0.1563 |
| Time × Substance | 0.044 | 0.100 | -0.153 | 0.241 | 0.44 | 0.6614 |
| Time × Time × Substance | -0.003 | 0.016 | -0.034 | 0.028 | -0.19 | 0.8504 |
| Productivity (No) | 0.340 | 0.183 | -0.018 | 0.698 | 1.86 | 0.0627 |
| Time × Productivity | 0.029 | 0.141 | -0.247 | 0.305 | 0.21 | 0.8347 |
| Time × Time × Productivity | -0.002 | 0.022 | -0.046 | 0.042 | -0.10 | 0.9188 |
| Education (> HS) | -0.351 | 0.132 | -0.610 | -0.092 | -2.66 | 0.0079 |
| Time × Education | -0.106 | 0.102 | -0.306 | 0.093 | -1.04 | 0.2964 |
| Time × Time × Education | 0.012 | 0.016 | -0.020 | 0.043 | 0.72 | 0.4716 |
| Pay (Medicaid/Medicare) | 0.354 | 0.142 | 0.075 | 0.633 | 2.49 | 0.0129 |
| Time × Pay | 0.228 | 0.110 | 0.013 | 0.443 | 2.08 | 0.0379 |
| Time × Time × Pay | -0.038 | 0.017 | -0.072 | -0.004 | -2.17 | 0.0299 |
| CT Compression (No) | -0.212 | 0.126 | -0.459 | 0.036 | -1.68 | 0.0940 |
| Time × CT Compression | 0.100 | 0.097 | -0.091 | 0.291 | 1.03 | 0.3053 |
| Time × Time × CT Compression | -0.016 | 0.015 | -0.046 | 0.014 | -1.03 | 0.3010 |
| CT Punctate (No) | 0.144 | 0.138 | -0.127 | 0.415 | 1.04 | 0.2965 |
| Time × CT Punctate | -0.040 | 0.107 | -0.249 | 0.169 | -0.38 | 0.7064 |
| Time × Time × CT Punctate | 0.006 | 0.017 | -0.027 | 0.039 | 0.35 | 0.7243 |
| CT Intraventricular (No) | -0.016 | 0.142 | -0.294 | 0.262 | -0.11 | 0.9098 |
| Time × CT Intraventricular | -0.030 | 0.109 | -0.244 | 0.185 | -0.27 | 0.7871 |
| Time × Time × CT Intraventricular | -0.001 | 0.017 | -0.035 | 0.033 | -0.06 | 0.9524 |
| Age | 0.012 | 0.004 | 0.004 | 0.020 | 2.81 | 0.0050 |
| Time × Age | 0.006 | 0.003 | 0.000 | 0.012 | 1.82 | 0.0688 |
| Time × Time × Age | 0.000 | 0.001 | -0.001 | 0.001 | -0.08 | 0.9401 |
| LOS | 0.031 | 0.003 | 0.026 | 0.036 | 11.90 | < 0.0001 |
| Time × LOS | -0.009 | 0.002 | -0.013 | -0.005 | -4.61 | < 0.0001 |
| Time × Time × LOS | 0.001 | 0.000 | 0.001 | 0.002 | 3.76 | 0.0002 |
| FIM Motor | -0.042 | 0.005 | -0.052 | -0.032 | -8.48 | < 0.0001 |
| Time × FIM Motor | 0.006 | 0.004 | -0.002 | 0.013 | 1.52 | 0.1278 |
| Time × Time × FIM Motor | -0.001 | 0.001 | -0.002 | 0.000 | -1.35 | 0.1784 |
| FIM Cognitive | -0.041 | 0.013 | -0.066 | -0.015 | -3.16 | 0.0016 |
| Time × Cognitive | -0.008 | 0.010 | -0.027 | 0.011 | -0.81 | 0.4208 |
| Time × Time × Cognitive | 0.001 | 0.002 | -0.002 | 0.004 | 0.81 | 0.4165 |
| DRS | 0.405 | 0.026 | 0.354 | 0.457 | 15.40 | < 0.0001 |
| Time × DRS | -0.116 | 0.020 | -0.156 | -0.076 | -5.72 | < 0.0001 |
| Time × Time × DRS | 0.015 | 0.003 | 0.009 | 0.021 | 4.71 | < 0.0001 |

a Degrees of freedom for all *p*-values is 4607

SE = Standard error

LCL, UCL = Lower/Upper confidence limits for parameter estimates

Reference cells for model are male, white, not married, not living alone/roommate, no substance history, HS education or less, not Medicare/Medicaid, no CT Compression, no CT Punctuate, and no CT Intraventricular