Supplemental Table 3. Model comparisons among alternative latent change score models of domain-specific and general cognitive performance and IADL functioning: Results from ACTIVE (N=2,802)

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Cognitive domain | Model stage | Model description | RMSEA | CFI | Log-likelihood | Number of free parameters | Change in -2LL (df) |
| Memory performance |   |   |   |   |   |   |
|   | 1 | No coupling | 0.068 | 0.931 | -29510.602 | 28 | REF |
|   | 2 | Memory --> change IADL | 0.069 | 0.931 | -29509.842 | 29 | 1.520 (1) |
|   | 2.1 | Memory --> change IADL, multiple groups | 0.074 | 0.901 | -29695.765 | 51 | 370.326 (23) |
|   | 3 | IADL --> change Memory | 0.068 | 0.932 | -29502.117 | 29 | 16.970 (1) |
|   | 3.1 | IADL --> change Memory, multiple groups | 0.073 | 0.904 | -29672.338 | 51 | 323.472 (23) |
|   | 4 | Dual coupling | 0.069 | 0.933 | -29500.766 | 30 | 19.672 (2) |
|   | 4.1 | Dual coupling, multiple groups | 0.073 | 0.904 | -29671.971 | 55 | 322.738 (27) |
| Reasoning performance |   |   |   |   |   |   |
|   | 1 | No coupling | 0.128 | 0.835 | -27824.813 | 28 | REF |
|   | 2 | Reasoning --> change IADL | 0.129 | 0.834 | -27824.74 | 29 | 0.146 (1) |
|   | 2.1 | Reasoning --> change IADL, multiple groups | 0.134 | 0.78 | -28141.889 | 51 | 634.152 (23) |
|   | 3 | IADL --> change Reasoning | 0.129 | 0.833 | -27708.008 | 29 | 233.610 (1) |
|   | 3.1 | IADL --> change Reasoning, multiple groups | 0.123 | 0.815 | -27765.405 | 51 | 118.816 (23) |
|   | 4 | Dual coupling | 0.131 | 0.832 | -27708.008 | 30 | 233.610 (2) |
|   | 4.1 | Dual coupling, multiple groups | 0.123 | 0.816 | -27755.181 | 55 | 139.264 (27) |
| Speed of processing performance |   |   |   |   |   |
|   | 1 | No coupling | 0.104 | 0.791 | -31149.078 | 28 | REF |
|   | 2 | Speed --> change IADL | 0.105 | 0.79 | -31149.069 | 29 | 0.018 (1) |
|   | 2.1 | Speed --> change IADL, multiple groups | 0.112 | 0.702 | -31320.068 | 51 | 341.980 (23) |
|   | 3 | IADL --> change Speed | 0.107 | 0.781 | -31120.467 | 29 | 57.222 (1) |
|   | 3.1 | IADL --> change Speed, multiple groups | 0.106 | 0.733 | -31128.908 | 51 | 40.340 (23) |
|   | 4 | Dual coupling | 0.109 | 0.78 | -31120.025 | 30 | 58.106 (2) |
|   | 4.1 | Dual coupling, multiple groups | 0.106 | 0.734 | -31120.175 | 55 | 57.806 (27) |
| General cognitive factor |   |   |   |   |   |   |
|   | 1 | 1 No coupling  | 0.138 | 0.816 | -27415.38 | 28 | REF |
|   | 2 | 2 Cognition to IADL  | 0.139 | 0.816 | -27415.108 | 29 | 0.544 (1) |
|   | 2.1 | 2.2 cognition to IADL, multiple groups means free  | 0.146 | 0.752 | -27938.756 | 51 | 1046.752 (23) |
|   | 3 | 3 IADL to Cognition  | 0.135 | 0.827 | -27156.82 | 29 | 517.120 (1) |
|   | 3.1 | 3.2 IADL to Cognition, multiple groups means free  | 0.127 | 0.812 | -27264.538 | 51 | 301.684 (23) |
|   | 4 | 4 Dual coupling  | 0.138 | 0.822 | -27156.545 | 30 | 517.670 (2) |
|   | 4.1 | 4.2 Dual coupling, multiple groups, temporal constraints, means free  | 0.129 | 0.807 | -27241.64 | 55 | 347.480 (27) |

This table includes lines from Table 2, supplemented with multiple-group latent change score models by intervention group. The final rows include models using a general cognitive performance factor; see Methods for details. RMSEA: root mean squared error of approximation. CFI: comparative fit index. Df: degrees of freedom.