Supplementary Table 1 Neuropsychological tests performance among NC, MCI and AD groups

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | NC(n=237) | MCI(n=221) | AD(n=160) | F | p |
| General cognitive |
| MES total score (max = 100) | 86.5 ± 7.0\* | 74.8 ± 11.1† | 47.8 ± 14.3‡ | 583.789 | <.001 |
| MOCA total score (max =30) | 24.8 ± 2.8\* | 21.4 ± 2.9† | 15.6 ± 3.8‡ | 223.041 | <.001 |
| Episodic memory |
| AVLT-delay recall (n = 12) | 5.4 ± 1.8\* | 1.6 ± 1.5† | 0.2 ± 0.6‡ | 684.377 | <.001 |
| CFT-memory (max = 36) | 15.4 ± 6.7\* | 10.0 ± 6.2† | 3.4 ± 4.4‡ | 168.540 | <.001 |
| Attention |
| SDMT (number in 90 seconds) | 36.0 ± 13.8\* | 29.8 ± 12.1† | 16.2 ± 10.5‡ | 100.992 | <.001 |
| DST-forward (n = 12) | 7.8 ± 1.2 | 7.6 ± 1.2† | 6.8 ± 1.3‡ | 16.002 | <.001 |
| DST-backward (n = 10) | 4.5 ± 1.3\* | 4.0 ± 1.1† | 3.2 ± 0.8‡ | 33.975 | <.001 |
| DST-order (n = 12) | 4.9 ± 1.3\* | 4.3 ± 1.2† | 3.1 ± 1.4‡ | 47.249 | <.001 |
| STT-part A (seconds) | 58.0 ± 17.7\* | 73.9 ± 36.3† | 134.8 ± 85.8‡ | 108.179 | <.001 |
| Executive function |
| STT-part B (seconds) | 148.0 ± 49.0\* | 192.2 ± 84.4† | 270.9 ± 92.5‡ | 100.927 | <.001 |
| Visuospatial ability |
| CFT-copy (max = 12) | 33.5 ± 3.4\* | 31.8 ± 11.4† | 23.7 ± 10.2‡ | 59.534 | <.001 |
| Language |
| AFT (number in 60 seconds) | 16.7 ± 4.0\* | 15.1 ± 3.5† | 9.6 ± 4.3‡ | 46.371 | <.001 |
| ST (max = 24) | 16.4 ± 11.5\* | 12.6 ± 4.7† | 9.0 ± 5.2‡ | 37.733 | <.001 |
| BNT (n = 30) | 24.3 ± 3.4\* | 22.1 ± 4.6† | 18.0 ± 5.1‡ | 98.398 | <.001 |

Note: Data are expressed as mean ± standard deviation. AD = Alzheimer’s disease, AFT = animal fluency test, AVLT = auditory verbal learning test, BNT = Boston naming test, CFT = Rey-Osterrieth complex figure test, DST = digit span test, MES = memory and executive screening, MCI = mild cognitive impairment, MoCA = Montreal cognitive assessment, NC = cognitively normal controls, SDMT = symbol digit modalities test, ST = similarity test, STT = shape trails test.

\*NC versus MCI: p < .05, †MCI versus AD: p < .05, ‡NC versus AD: p < .05.

Supplementary Table 2 Neuropsychological tests performance between mild and moderate AD

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | mild AD(n=76) | moderate AD(n=84) | t | p |
| General cognitive |
| MES total score (max = 100) | 56.2 ± 10.2 | 40.2 ± 13.3 | 8.239 | <.001 |
| MOCA total score (max = 30) | 16.8 ± 3.5 | 13.8 ± 3.7 | 3.548 | .001 |
| Episodic memory |
| AVLT-delay recall (n = 12) | 0.3 ± 0.7 | 0.1 ± 0.4 | 1.750 | 0.083 |
| CFT-memory (max = 36) | 3.8 ± 4.9 | 3.0 ± 4.0 | 1.058 | 0.292 |
| Attention |
| SDMT (number in 90 seconds) | 19.0 ± 10.4 | 13.2 ± 9.9 | 3.231 | 0.002 |
| DST-forward (n = 12) | 7.0 ± 1.4 | 6.7 ± 1.3 | 0.983 | 0.329 |
| DST-backward (n = 10) | 3.4 ± 0.9 | 2.9 ± 0.8 | 2.648 | 0.010 |
| DST-order (n = 12) | 3.5 ± 1.3 | 2.5 ± 1.5 | 3.145 | 0.002 |
| STT-part A (seconds) | 102.3 ± 46.1 | 170.7 ± 105.0 | -4.596 | <.001 |
| Executive function |
| STT-part B (seconds) | 252.8 ± 79.9 | 295.3 ± 103.2 | -2.411 | 0.018 |
| Visuospatial ability |
| CFT-copy (max = 36) | 27.2 ± 8.7 | 20.6 ± 10.6 | 4.242 | <.001 |
| Language |
| AFT (number in 60 seconds) | 11.7 ± 3.2 | 9.4 ± 3.7 | 4.068 | <.001 |
| ST (max = 24) | 11.0 ± 4.8 | 7.2 ± 5.1 | 4.654 | <.001 |
| BNT (n = 30) | 19.9 ± 4.4 | 16.3 ± 5.3 | 4.422 | <.001 |

Note: Data are expressed as mean ± standard deviation. AD = Alzheimer’s disease, AFT = animal fluency test, AVLT = auditory verbal learning test, BNT = Boston naming test, CFT = Rey-Osterrieth complex figure test, DST = digit span test, MES = memory and executive screening, MoCA = Montreal cognitive assessment, SDMT = symbol digit modalities test, ST = similarity test, STT = shape trails test.