**Supplementary Material A**

**Supplementary Table 1** List of the complete medication selection to exclude participants considering the possible cognitive impact

|  |  |  |
| --- | --- | --- |
| Medicaments | | |
| Alfabl1a | Cyclobenzaprine | Paroxetine chloridrate |
| Alfabl1b | Diazepam | Periciazine |
| Alprazolam | Entacapone | Phenytoin |
| Amantadine chloridrate | Fenobarbital | Phenytoin sodium |
| Amissulprised | Flunarizine | Pramipexol dicloridrate |
| Amythriptilin chloridrate | Flunitrazepam | Pregabalin |
| Beserazida chloridrate | Flurazepam | Primidone |
| Biperiden lactate | Haloperidol | Prometazin chloridrate |
| Biperidene chloridrate | Imipramine chloridrate | Quetiapine fumarate |
| Bromazepam | Imipramine embonate | Risperidone |
| Bromocryptine mesylate | Levodopa | Selegiline |
| Bupropion chloridrate | Levomepromazine maleate | Selegiline chloridrate |
| Buspyrone chloridrate | Lithium carbonate | Sodium divalproate |
| Carbamazepine | Lorazepam | Sodium valproate |
| Carbidopa | Maprotilin chloridrate | Stazolam |
| Chloroxoxazone | Memantine | Sulpirid |
| Chlorpromazine | Methylphenidate chloride | Tansulosine chloridrate |
| Chlorpromazine chloridrate | Midazolam maleato | Tioridazine chloridrate |
| Cinarizina | Mirtazapine | Tizanidine chloridrate |
| Clobazam | Nortriptilin | Tolterodine |
| Clomipramine chloridrate | Nortriptilin chloridrate | Topiramat |
| Clonazepam | Olanzapine | Tramadol chloridrate |
| Cloxazolam | Oxcarbazepine | Trazodone |
| Clozapine | Oxybutinine | Trazodone chloridrate |
| Codergocrine mesilate | Oxybutinine chloridrate | Valproic acid |
| Cyclobenzaprin chloridrate | Paroxetine | Ziprasidone monoid chloridrate |

**Supplementary Table 2.** Weighted Least Square Regression considering the associations of age, education, and sex with cognitive scores

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Model 1** | | | **Model 2** | | |
|  | F test  (2, 9615) | *p* | Adjusted R2 | F test  (3, 9614) | *p* | Adjusted R2 |
| **WLT Learning** | 1213.40 | < 0.001 | 20.14 | 976.64 | < 0.001 | 23.33 |
| **WTL Recall** | 1003.42 | < 0.001 | 17.25 | 802.58 | < 0.001 | 20.00 |
| **WTL Recognition** | 270.95 | < 0.001 | 5.32 | 210.40 | < 0.001 | 6.13 |
| **SVF** | 1365.75 | < 0.001 | 22.11 | 910.50 | < 0.001 | 22.10 |
| **PVF** | 1142.62 | < 0.001 | 19.19 | 762.91 | < 0.001 | 19.20 |
| **TMT-B** | 2778.83 | < 0.001 | 36.62 | 1855.46 | < 0.001 | 36.65 |
| Model 1: age and education; Model 2: age, education and sex; WLT: Word List Test; SVF: Semantic Verbal Fluency; PVF: Phonemic Verbal Fluency; TMT-B: Trail Making Test - B | | | | | | |

**Supplementary Table 3.** Age and education regression coefficients for performance in different cognitive tests

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Age** | | | **Education** | | | |
|  | Coefficient | 95% CI | *p* | Coefficient | 95% CI | *p* |
| **WLT Learning** | -0.61 | -0.69;-0.53 | < 0.001 | 1.55 | 1.48;1.62 | < 0.001 |
| **WTL Recall** | -0.33 | -0.37;-0.29 | < 0.001 | 0.69 | 0.66;0.73 | < 0.001 |
| **WTL Recognition** | -0.11 | -0.13;-0.90 | < 0.001 | 0.16 | 0.14;0.18 | < 0.001 |
| **SVF** | -0.55 | -0.65;-0.45 | < 0.001 | 2.20 | 2.10;2.28 | < 0.001 |
| **PVF** | -0.40 | -0.48;-0.30 | < 0.001 | 1.75 | 1.67;1.82 | < 0.001 |
| **TMT-B** | 21.19 | 19.26;23.12 | < 0.001 | -55.70 | -57.34;-54.04 | < 0.001 |

WLT: Word List Test; SVF: Semantic Verbal Fluency; PVF: Phonemic Verbal Fluency; TMT-B: Trail Making Test – B. Note: for all tests scores higher achievement means better performance, except for the TMT B where more seconds means worse performance.

**Supplementary Table 4.** Percentage of spurious scores according to clinical percentile cutoff adopted for a six-measure battery

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Number of abnormal scores** | | | | | | | |
| **Percentile** | **1** | **2** | **3** | **4** | **5** | **6** | **>= 2** |
| **2** | 10.91 | 2.02 | 0.54 | 0.09 | 0.01 | 0.00 | 2.66 |
| **7** | 23.76 | 8.66 | 3.28 | 1.07 | 0.17 | 0.03 | 13.21 |
| **16** | 27.17 | 17.64 | 10.24 | 4.30 | 1.50 | 0.35 | 34.03 |