Supplementary Table 1. Statistical results of the multiple linear regression analyses and Pearson correlation coefficients for the control, MCI and AD groups.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Control group | Right thalamus | | Left thalamus | | Right putamen | | Left putamen | | Right caudate nucleus | | Left caudate nucleus | |
| p value | Pearson | p value | Pearson | p value | Pearson | p value | Pearson | p value | Pearson | p value | Pearson |
| Free recall | 0.192 | 0.230 | 0.109 | -0.129 | \*0.013 | -0.306 | 0.191 | -0.162 | 0.822 | 0.047 | 0.406 | 0.171 |
| Memory consolidation | 0.265 | 0.206 | 0.172 | -0.111 | \*\*0.007 | -0.339 | 0.277 | -0.144 | 0.950 | 0.007 | 0.459 | 0.160 |
| Semantic processing | 0.712 | 0.035 | 0.763 | 0.025 | 0.875 | -0.144 | 0.492 | 0.017 | 0.594 | -0.132 | 0.837 | 0.033 |
| Naming (b) | 0.245 | 0.134 | 0.781 | 0.041 | 0.923 | -0.069 | 0.962 | -0.046 | 0.702 | -0.014 | 0.309 | 0.116 |
| Learning (c) | 0.591 | 0.156 | 0.144 | -0.036 | 0.402 | -0.119 | 0.708 | -0.042 | 0.938 | 0.047 | 0.915 | 0.108 |
| Visuoconstructive function (b) | 0.385 | -0.063 | 0.071 | -0.177 | 0.137 | -0.174 | 0.775 | -0.021 | \*0.037 | -0.257 | 0.249 | -0.098 |
| Visuomotor scanning (d) | 0.274 | 0.213 | \*\*0.005 | 0.302 | \*0.038 | 0.238 | 0.098 | 0.206 | 0.210 | 0.240 | 0.323 | 0.220 |
|  | | | | | | | | | | | | |
| MCI group | Right thalamus | | Left thalamus | | Right putamen | | Left putamen | | Right caudate nucleus | | Left caudate nucleus | |
| p value | Pearson | p value | Pearson | p value | Pearson | p value | Pearson | p value | Pearson | p value | Pearson |
| Free recall | 0.116 | -0.196 | \*0.033 | -0.360 | 0.818 | -0.069 | 0.306 | -0.173 | \*0.049 | -0.328 | 0.452 | -0.162 |
| Memory consolidation | 0.210 | -0.196 | \*0.040 | -0.319 | 0.999 | 0.027 | 0.595 | -0.065 | 0.064 | -0.287 | 0.755 | -0.074 |
| Semantic processing | 0.920 | 0.051 | 0.979 | -0.001 | 0.456 | 0.056 | 0.648 | -0.085 | 0.860 | 0.073 | 0.663 | 0.012 |
| Naming (b) | 0.222 | -0.292 | 0.114 | -0.340 | 0.283 | -0.348 | 0.062 | -0.376 | 0.397 | -0.249 | 0.843 | -0.173 |
| Learning (c) | 0.617 | -0.029 | 0.384 | -0.144 | 0.143 | 0.135 | 0.907 | -0.017 | 0.538 | 0.106 | 0.775 | 0.014 |
| Visuoconstructive function (b) | 0.073 | -0.249 | 0.360 | -0.121 | 0.074 | -0.328 | 0.061 | -0.295 | 0.165 | -0.192 | 0.363 | -0.155 |
| Visuomotor scanning (d) | \*0.033 | 0.388 | \*0.028 | 0.348 | 0.197 | 0.275 | 0.085 | 0.288 | \*\*\*0.003 | 0.513 | 0.167 | 0.354 |
|  | | | | | | | | | | | | |
| AD group | Right thalamus | | Left thalamus | | Right putamen | | Left putamen | | Right caudate nucleus | | Left caudate nucleus | |
| p value | Pearson | p value | Pearson | p value | Pearson | p value | Pearson | p value | Pearson | p value | Pearson |
| Free recall | \*\*\*0.001 | -0.383 | 0.128 | -0.193 | 0.112 | -0.201 | \*0.032 | -0.289 | \*\*\*0.004 | -0.343 | \*0.011 | -0.301 |
| Memory consolidation | \*\*\*0.001 | -0.375 | 0.105 | -0.204 | 0.213 | -0.150 | 0.138 | -0.201 | \*0.026 | -0.266 | 0.065 | -0.229 |
| Semantic processing | \*\*\*0.004 | -0.313 | 0.300 | -0.134 | 0.273 | -0.150 | 0.077 | -0.245 | \*\*0.007 | -0.301 | \*\*\*0.001 | -0.350 |
| Naming (b) | 0.653 | -0.093 | 0.303 | 0.115 | 0.351 | 0.101 | 0.570 | -0.092 | 0.401 | -0.133 | 0.502 | -0.124 |
| Learning (c) | \*\*0.005 | -0.353 | 0.434 | -0.210 | 0.167 | -0.211 | \*0.014 | -0.359 | \*0.024 | 0.023 | \*0.025 | -0.286 |
| Visuoconstructive function (b) | 0.522 | -0.038 | 0.395 | -0.046 | 0.614 | 0.035 | 0.256 | -0.085 | 0.371 | -0.044 | 0.248 | -0.111 |
| Visuomotor scanning (d) | \*0.013 | 0.345 | \*0.015 | 0.323 | 0.214 | 0.179 | 0.263 | 0.172 | \*0.012 | 0.347 | \*\*\*0.001 | 0.420 |
| Statistical analysis: to test associations and their directions between the DGM areas and cognitive test results, multiple linear regression analyses and Pearson correlations were used. p-values stem from the multiple linear regression analyses. (b), cube of x (x3), (c), square of x (x2), (d), natural logarithmic conversion (Ln). \* α < 0.05, \*\* α < 0.01, and \*\*\* α < 0.005. MCI, mild cognitive impairment, AD, Alzheimer’s disease | | | | | | | | | | | | |