**Table S1.** Mean number of streamlines (NS) for each region pair.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Patients | Controls |  |  |  |
| Pair | M | SD | M | SD | *t* | *df* | *p* |
|  | Number of Streamlines |
| PFC-LLTL | 7986.42 | 4095.53 | 5249.04 | 4950.38 | 2.136 | 49 | 0.038 |
| PFC-PCC | 16690.25 | 6349.44 | 16617.96 | 8371.92 | 0.034 | 49 | 0.973 |
| PFC-RLTL | 1401.86 | 1862.56 | 1191.13 | 1358.73 | 0.435 | 43 | 0.666 |
| PFC-RLOFC | 3857.48 | 3320.81 | 3747.41 | 5288.74 | 0.086 | 48 | 0.932 |
| LLTL-PCC | 3245.67 | 5743.81 | 3700.41 | 4052.76 | -0.322 | 46 | 0.749 |
| PCC-LPHP | 5729.50 | 3584.98 | 4599.59 | 3378.93 | 1.179 | 51 | 0.244 |
| PCC-RPHP | 2815.96 | 2195.65 | 1973.74 | 1844.42 | 1.474 | 48 | 0.147 |
| RLTL-RIPL | 9634.67 | 6382.67 | 7653.52 | 6281.45 | 1.135 | 51 | 0.262 |
| RLTL-RLOFC | 3047.96 | 1988.19 | 3664.29 | 2813.64 | -0.898 | 50 | 0.374 |

M = mean; SD = standard deviation: PFC = Prefrontal cortex; LLTL = left lateral temporal lobe; PCC = posterior cingulate cortex; RLTL = right lateral temporal lobe; RLOFC = right lateral orbitofrontal cortex; RIPL = right inferior parietal lobule

**Table S2.** Mean fractional anisotropy (FA) for each region pair.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Patients | Controls |  |  |  |
| Pair | M | SD | M | SD | *t* | *df* | *p* |
|  | Fractional Anisotropy |
| PFC-LLTL | 0.423 | 0.021 | 0.430 | 0.017 | 1.185 | 49 | 0.242 |
| PFC-PCC | 0.417 | 0.019 | 0.424 | 0.024 | 1.126 | 49 | 0.266 |
| PFC-RLTL | 0.426 | 0.031 | 0.433 | 0.030 | 0.786 | 43 | 0.436 |
| PFC-RLOFC | 0.413 | 0.030 | 0.428 | 0.027 | 1.929 | 48 | 0.060 |
| LLTL-PCC | 0.435 | 0.034 | 0.443 | 0.026 | 0.821 | 46 | 0.416 |
| PCC-LPHP | 0.431 | 0.027 | 0.447 | 0.027 | 2.176 | 51 | 0.034 |
| PCC-RPHP | 0.420 | 0.033 | 0.423 | 0.033 | 0.278 | 48 | 0.783 |
| RLTL-RIPL | 0.392 | 0.019 | 0.397 | 0.020 | 1.074 | 51 | 0.288 |
| RLTL-RLOFC | 0.382 | 0.034 | 0.402 | 0.028 | 2.383 | 50 | 0.021 |

M = mean; SD = standard deviation: PFC = Prefrontal cortex; LLTL = left lateral temporal lobe; PCC = posterior cingulate cortex; RLTL = right lateral temporal lobe; RLOFC = right lateral orbitofrontal cortex; RIPL = right inferior parietal lobule

**Table S3.** Mean resting state functional connectivity (RSFC) for each region pair.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Controls | Patients |  |  |  |
| Pair | M | SD | M | SD | *t* | *df* | *p* |
|  | RSFC |
| PFC-LLTL | 1.174 | 0.240 | 0.992 | 0.251 | -2.689 | 51 | 0.010 |
| PFC-PCC | 0.898 | 0.254 | 0.883 | 0.282 | -0.201 | 51 | 0.841 |
| PFC-RLTL | 0.817 | 0.312 | 0.721 | 0.253 | -1.208 | 51 | 0.233 |
| PFC-RLOFC | 0.713 | 0.355 | 0.861 | 0.267 | 1.690 | 51 | 0.097 |
| LLTL-PCC | 0.863 | 0.337 | 0.726 | 0.300 | -1.539 | 51 | 0.130 |
| PCC-LPHP | 0.337 | 0.140 | 0.378 | 0.220 | 0.821 | 51 | 0.416 |
| PCC-RPHP | 0.169 | 0.219 | 0.286 | 0.286 | 1.682 | 51 | 0.099 |
| RLTL-IPL | 0.751 | 0.246 | 0.819 | 0.310 | 0.901 | 51 | 0.372 |
| RLTL-RLOFC | 0.633 | 0.317 | 0.675 | 0.207 | 0.556 | 51 | 0.580 |

M = mean; SD = standard deviation: RSFC = resting state functional connectivity; PFC = Prefrontal cortex; LLTL = left lateral temporal lobe; PCC = posterior cingulate cortex; RLTL = right lateral temporal lobe; RLOFC = right lateral orbitofrontal cortex; RIPL = right inferior parietal lobule

**Table S4.** Pearson correlations (r) between resting state functional connectivity and fractional anisotropy for homologous region pairs.

|  |  |
| --- | --- |
|  | **Controls** |
|  | **Resting State Functional Connectivity** |
| **Fractional Anisotropy** | **Ns** | PFC-LLTL | PFC-PCC | PFC-RLTL | PFC-RLOFC | LLTL-PCC | PCC-LPHP | PCC-RPHP | RLTL-RIPL | RLTL-RLOFC |
| PFC-LLTL | 23 | 0.085 | 0.132 | -0.155 | -0.038 | **.431\*** | **.435\*** | -0.097 | 0.37 | 0.081 |
| PFC-PCC | 23 | -0.225 | -0.254 | -0.373 | -0.291 | -0.025 | .**420\*** | -0.07 | -0.002 | 0.101 |
| PFC-RLTL | 21 | -0.291 | 0.009 | -0.23 | -0.005 | -0.05 | **.518\*** | 0.34 | -0.105 | 0.038 |
| PFC-RLOFC | 22 | 0.079 | 0.347 | 0.021 | 0.168 | 0.406 | 0.399 | 0.107 | 0.394 | 0.249 |
| LLTL-PCC | 20 | 0.055 | -0.185 | -0.042 | 0.125 | 0.136 | 0.219 | 0.044 | 0.405 | 0.243 |
| PCC-LPHP | 23 | -0.115 | 0.016 | -0.115 | 0.053 | -0.026 | **.455\*** | -0.009 | 0.051 | 0.312 |
| PCC-RPHP | 22 | -0.153 | -0.064 | -0.149 | -0.051 | -0.057 | 0.174 | -0.291 | 0.334 | 0.403 |
| RLTL-RIPL | 23 | 0.028 | 0.024 | 0.007 | -0.077 | 0.223 | 0.157 | 0 | 0.22 | 0.332 |
| RLTL-RLOFC | 23 | -0.017 | -0.131 | -0.13 | 0.21 | 0.096 | 0.038 | 0.003 | 0.125 | 0.291 |
|  |  |
|  | **Patients** |
|  | **Resting State Functional Connectivity** |
| **Fractional Anisotropy** | **Ns** | PFC-LLTL | PFC-PCC | PFC-RLTL | PFC-RLOF | LLTL-PCC | PCC-LPHP | PCC-RPHP | RLTL-RIPL | RLTL-RLOFC |
| PFC-LLTL | 27 | -0.267 | -0.341 | -0.077 | 0.184 | **-.564\*\*** | -0.032 | 0.014 | -0.277 | 0.1 |
| PFC-PCC | 27 | 0.088 | 0.005 | -0.202 | -0.093 | 0.044 | **.454\*** | 0.098 | -0.367 | -0.199 |
| PFC-RLTL | 23 | 0.203 | 0.09 | 0.259 | -0.004 | -0.196 | 0.108 | **.492\*** | -0.251 | 0.192 |
| PFC-RLOFC | 27 | -0.121 | -0.238 | -0.18 | 0.161 | -0.354 | 0.192 | 0.115 | **-.649\*\*** | -0.043 |
| LLTL-PCC | 27 | -0.145 | -0.042 | 0.26 | 0.054 | -0.153 | 0.024 | 0.314 | -0.261 | 0.213 |
| PCC-LPHP | 29 | -0.059 | **-.391\*** | -0.26 | -0.123 | -0.294 | 0.064 | 0.278 | **-.514\*\*** | -0.22 |
| PCC-RPHP | 27 | -0.119 | -0.344 | 0.07 | -0.034 | -0.164 | 0.294 | 0.096 | -0.056 | -0.175 |
| RLTL-RIPL | 29 | 0.171 | -0.185 | -0.066 | 0.269 | -0.214 | 0.007 | -0.02 | **-.384\*** | 0.049 |
| RLTL-RLOFC | 28 | **.451\*** | 0.29 | 0.27 | 0.163 | 0.05 | 0.163 | 0.132 | 0.01 | 0.145 |

\*\* Pearson Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Values above are Pearson’s *r*. Abbreviations: PFC = Prefrontal cortex; LLTL = left lateral temporal lobe; PCC = posterior cingulate cortex; RLTL = right lateral temporal lobe; RLOFC = right lateral orbitofrontal cortex; RIPL = right inferior parietal lobule

**Table S5.** Pearson correlations (*r*) between resting state functional connectivity and number of streamlines for homologous region pairs.

|  |  |
| --- | --- |
|  | **Controls** |
|  | **Resting State Functional Connectivity** |
| **Number of Streamlines** | **Ns** | PFC-LLTL | PFC-PCC | PFC-RLTL | PFC-RLOFC | LLTL-PCC | PCC-LPHP | PCC-RPHP | RLTL-RIPL | RLTL-RLOFC |
| PFC-LLTL | 23 | -0.384 | -0.198 | -0.355 | -0.051 | -0.255 | -0.283 | -0.07 | -0.029 | -0.275 |
| PFC-PCC | 23 | -0.302 | -0.337 | -0.392 | -0.107 | -0.4 | 0.119 | -0.108 | -0.111 | -0.184 |
| PFC-RLTL | 21 | 0.092 | -0.303 | 0.097 | 0.09 | 0.031 | -0.381 | -0.11 | 0.348 | 0.387 |
| PFC-RLOFC | 22 | -0.095 | **-.426\*** | 0.014 | 0.015 | -0.4 | -0.295 | -0.14 | -0.117 | 0.307 |
| LLTL-PCC | 20 | 0.106 | 0.203 | 0.255 | 0.422 | 0.123 | 0.075 | 0.268 | 0.255 | 0.178 |
| PCC-LPHP | 23 | 0.15 | -0.046 | -0.033 | -0.005 | 0.369 | 0.032 | 0.269 | 0.006 | -0.346 |
| PCC-RPHP | 22 | -0.085 | -0.232 | -0.115 | -0.097 | 0.02 | 0.34 | 0.267 | 0.054 | -0.015 |
| RLTL-RIPL | 23 | -0.195 | -0.245 | -0.212 | -0.112 | -0.206 | -0.124 | -0.216 | -0.189 | 0.21 |
| RLTL-RLOFC | 23 | -0.255 | -0.166 | -0.282 | -0.111 | -0.159 | 0.254 | 0.195 | -0.064 | -0.163 |
|  |  |
|  | **Patients** |
|  | **Resting State Functional Connectivity** |
| **Number of Streamlines** | **Ns** | PFC-LLTL | PFC-PCC | PFC-RLTL | PFC-RLOF | LLTL-PCC | PCC-LPHP | PCC-RPHP | RLTL-RIPL | RLTL-RLOFC |
| PFC-LLTL | 27 | 0.275 | **.508\*\*** | 0.184 | **.437\*** | 0.201 | -0.084 | -0.083 | 0.123 | **.397\*** |
| PFC-PCC | 27 | 0.268 | **.476\*** | 0.147 | 0.321 | 0.243 | -0.229 | -0.185 | **.459\*** | **.462\*** |
| PFC-RLTL | 23 | 0.063 | 0.301 | **.477\*** | 0.099 | 0.239 | 0.222 | -0.203 | 0.172 | 0.086 |
| PFC-RLOFC | 27 | 0.071 | .**414\*** | 0.017 | 0.299 | 0.294 | -0.165 | -0.047 | 0.093 | 0.374 |
| LLTL-PCC | 27 | 0.211 | 0.039 | 0.05 | 0.041 | -0.023 | 0.106 | 0.052 | 0.008 | 0.052 |
| PCC-LPHP | 29 | 0.185 | 0.008 | 0.074 | 0.04 | -0.051 | -0.01 | 0.14 | 0.202 | -0.133 |
| PCC-RPHP | 27 | 0.107 | 0.115 | 0.116 | 0.178 | 0.02 | -0.101 | 0.082 | 0.249 | -0.027 |
| RLTL-RIPL | 29 | -0.056 | -0.115 | -0.197 | -0.157 | -0.146 | -0.239 | 0.196 | **-.423\*** | -0.123 |
| RLTL-RLOFC | 29 | 0.229 | 0.193 | -0.154 | 0 | 0.237 | -0.105 | 0.082 | 0.237 | -0.068 |

\*\* Pearson Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

Values above are Pearson’s *r*. Abbreviations: PFC = Prefrontal cortex; LLTL = left lateral temporal lobe; PCC = posterior cingulate cortex; RLTL = right lateral temporal lobe; RLOFC = right lateral orbitofrontal cortex; RIPL = right inferior parietal lobule

**Table S6**. Factor loadings for patients for multimodal connectivity scores for both Fractional Anisotropy (FA) and Number of Streamlines (NS).

|  |
| --- |
| Fractional Anisotropy (FA) |
|  Measure | Loading | Factor Eigenvalue | Bartlett’s Test | *p* |
| PFC\_LLTL | -.79 (FA) | 1.27 | 1.81 | .18 |
| PFC\_PCC | .71 | 1.00 | 0.00 | .98 |
| PFC\_RLTL | .79 | 1.26 | 1.42 | .23 |
| PFC\_RLOFC | .76 | 1.16 | 0.64 | .42 |
| LLTL\_PCC | -.76 (FC) | 1.15 | 0.58 | .45 |
| PCC\_LPHP | .73 | 1.06 | 0.11 | .74 |
| PCC\_RPHP | .74 | 1.10 | 0.23 | .63 |
| RLTL\_RIPL | -.83 (FC) | 1.38 | 4.23 | .04 |
| RLTL\_RLOFC | .76 | 1.14 | 0.54 | .46 |
| Number of Streamlines (NS) |
| PFC\_LLTL | .80 | 1.28 | 1.93 | .16 |
| PFC\_PCC | .86 | 1.48 | 6.30 | .012 |
| PFC\_RLTL | .86 | 1.48 | 5.29 | .021 |
| PFC\_RLOFC | .81 | 1.30 | 2.30 | .13 |
| LLTL\_PCC | -.72 (NS) | 1.02 | 0.013 | .91 |
| PCC\_LPHP | -.71 (NS) | 1.01 | 0.002 | .96 |
| PCC\_RPHP | .74 | 1.08 | 0.17 | .68 |
| RLTL\_RIPL | -.84 (NS) | 1.42 | 5/23 | .023 |
| RLTL\_RLOFC | -.73 (NS) | 1.07 | 0.12 | .73 |

Abbreviations: FA = fractional anisotropy, NS = number of streamlines; PFC = Prefrontal cortex; LLTL = left lateral temporal lobe; PCC = posterior cingulate cortex; RLTL = right lateral temporal lobe; RLOFC = right lateral orbitofrontal cortex; RIPL = right inferior parietal lobule.

Under loading, label in parentheses refers to which variable loads negatively on the eigenvariate.