**Table S1. Comparison of local gyrification index between patients with bipolar I and II disorders.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Cortical regions** | **BD I (n = 30)** | | **BD II (n = 31)** | | **BD I vs. BD II** | |
| **Mean** | **SD** | **Mean** | **SD** | **F (1, 53)** | **P-value** |
| ***Left hemisphere*** |  |  |  |  |  |  |
| Caudal anterior cingulate cortex | 1.91 | 0.10 | 1.92 | 0.09 | 0.002 | 0.968 |
| Caudal middle frontal gyrus | 3.17 | 0.19 | 3.24 | 0.19 | 0.365 | 0.548 |
| Cuneus | 3.03 | 0.21 | 3.07 | 0.21 | 0.370 | 0.546 |
| Entorhinal cortex | 2.61 | 0.12 | 2.61 | 0.13 | 0.050 | 0.824 |
| Fusiform gyrus | 2.76 | 0.14 | 2.75 | 0.10 | 0.493 | 0.486 |
| Inferior parietal cortex | 3.37 | 0.18 | 3.39 | 0.17 | 0.402 | 0.529 |
| Inferior temporal gyrus | 2.79 | 0.12 | 2.80 | 0.10 | 0.002 | 0.968 |
| Isthmus of cingulate cortex | 2.79 | 0.20 | 2.88 | 0.20 | 2.570 | 0.115 |
| Lateral occipital cortex | 2.71 | 0.15 | 2.71 | 0.14 | 0.302 | 0.585 |
| Lateral orbitofrontal cortex | 2.71 | 0.16 | 2.71 | 0.13 | 0.364 | 0.549 |
| Lingual gyrus | 2.84 | 0.17 | 2.88 | 0.16 | 0.520 | 0.474 |
| Medial orbitofrontal cortex | 2.19 | 0.08 | 2.18 | 0.08 | 1.852 | 0.179 |
| Middle temporal gyrus | 3.48 | 0.20 | 3.48 | 0.18 | 0.003 | 0.954 |
| Parahippocampal gyrus | 2.87 | 0.16 | 2.85 | 0.15 | 0.118 | 0.733 |
| Paracentral lobule | 2.37 | 0.11 | 2.40 | 0.12 | 0.026 | 0.873 |
| Pars opercularis | 4.25 | 0.32 | 4.33 | 0.31 | 0.012 | 0.913 |
| Pars orbitalis | 3.08 | 0.26 | 3.07 | 0.22 | 0.697 | 0.408 |
| Pars triangularis | 3.88 | 0.29 | 3.92 | 0.24 | 0.364 | 0.549 |
| Pericalcarine cortex | 2.88 | 0.20 | 2.95 | 0.20 | 1.571 | 0.216 |
| Postcentral gyrus | 3.54 | 0.20 | 3.59 | 0.18 | 0.047 | 0.828 |
| Posterior cingulate cortex | 2.21 | 0.13 | 2.27 | 0.14 | 0.769 | 0.384 |
| Precentral gyrus | 3.46 | 0.19 | 3.51 | 0.16 | 0.011 | 0.918 |
| Precuneus | 2.96 | 0.18 | 3.01 | 0.20 | 0.505 | 0.480 |
| Rostral anterior cingulate cortex | 2.10 | 0.09 | 2.09 | 0.10 | 1.192 | 0.280 |
| Rostral middle frontal gyrus | 2.83 | 0.17 | 2.84 | 0.16 | 0.420 | 0.520 |
| Superior frontal gyrus | 2.20 | 0.10 | 2.22 | 0.10 | 0.008 | 0.930 |
| Superior parietal cortex | 3.11 | 0.16 | 3.11 | 0.15 | 0.910 | 0.344 |
| Superior temporal cortex | 4.18 | 0.25 | 4.24 | 0.25 | 0.093 | 0.761 |
| Supramarginal gyrus | 3.65 | 0.19 | 3.69 | 0.23 | 0.019 | 0.892 |
| Frontal pole | 2.20 | 0.11 | 2.17 | 0.10 | 1.577 | 0.215 |
| Temporal pole | 2.45 | 0.16 | 2.48 | 0.13 | 0.014 | 0.907 |
| Transverse temporal cortex | 4.74 | 0.34 | 4.83 | 0.30 | 0.398 | 0.531 |
| Insula | 4.36 | 0.26 | 4.37 | 0.27 | 0.473 | 0.495 |
| ***Right hemisphere*** |  |  |  |  |  |  |
| Caudal anterior cingulate cortex | 1.98 | 0.11 | 1.98 | 0.12 | 0.061 | 0.806 |
| Caudal middle frontal gyrus | 3.16 | 0.19 | 3.22 | 0.16 | 0.462 | 0.500 |
| Cuneus | 3.26 | 0.22 | 3.28 | 0.21 | 0.105 | 0.747 |
| Entorhinal cortex | 2.64 | 0.16 | 2.62 | 0.15 | 0.347 | 0.558 |
| Fusiform gyrus | 2.74 | 0.15 | 2.72 | 0.12 | 1.080 | 0.303 |
| Inferior parietal cortex | 3.38 | 0.18 | 3.36 | 0.18 | 0.212 | 0.647 |
| Inferior temporal gyrus | 2.69 | 0.14 | 2.72 | 0.14 | 0.103 | 0.749 |
| Isthmus of cingulate cortex | 2.95 | 0.26 | 2.95 | 0.23 | 0.186 | 0.668 |
| Lateral occipital cortex | 2.74 | 0.12 | 2.73 | 0.12 | 1.053 | 0.309 |
| Lateral orbitofrontal cortex | 2.65 | 0.13 | 2.69 | 0.12 | 0.007 | 0.932 |
| Lingual gyrus | 2.96 | 0.20 | 3.00 | 0.19 | 0.118 | 0.733 |
| Medial orbitofrontal cortex | 2.19 | 0.09 | 2.20 | 0.10 | 0.009 | 0.925 |
| Middle temporal gyrus | 3.38 | 0.19 | 3.45 | 0.18 | 1.181 | 0.282 |
| Parahippocampal gyrus | 2.91 | 0.17 | 2.86 | 0.19 | 1.179 | 0.282 |
| Paracentral lobule | 2.40 | 0.13 | 2.39 | 0.11 | 0.090 | 0.765 |
| Pars opercularis | 4.32 | 0.32 | 4.38 | 0.31 | 0.247 | 0.621 |
| Pars orbitalis | 3.03 | 0.23 | 3.10 | 0.22 | 0.003 | 0.953 |
| Pars triangularis | 3.95 | 0.27 | 3.97 | 0.35 | 0.074 | 0.786 |
| Pericalcarine cortex | 3.08 | 0.22 | 3.10 | 0.21 | 0.083 | 0.775 |
| Postcentral gyrus | 3.51 | 0.19 | 3.55 | 0.19 | 0.083 | 0.774 |
| Posterior cingulate cortex | 2.25 | 0.14 | 2.26 | 0.13 | 0.228 | 0.635 |
| Precentral gyrus | 3.43 | 0.19 | 3.49 | 0.17 | 0.744 | 0.392 |
| Precuneus | 3.13 | 0.18 | 3.16 | 0.22 | 1.112 | 0.296 |
| Rostral anterior cingulate cortex | 2.13 | 0.11 | 2.14 | 0.13 | 0.000 | 0.994 |
| Rostral middle frontal gyrus | 2.84 | 0.17 | 2.85 | 0.16 | 0.006 | 0.937 |
| Superior frontal gyrus | 2.27 | 0.10 | 2.28 | 0.10 | 0.235 | 0.630 |
| Superior parietal cortex | 3.09 | 0.16 | 3.09 | 0.15 | 0.533 | 0.469 |
| Superior temporal cortex | 4.18 | 0.25 | 4.27 | 0.23 | 1.453 | 0.233 |
| Supramarginal gyrus | 3.60 | 0.19 | 3.69 | 0.20 | 2.940 | 0.092 |
| Frontal pole | 2.20 | 0.11 | 2.21 | 0.12 | 0.023 | 0.881 |
| Temporal pole | 2.44 | 0.09 | 2.50 | 0.12 | 0.840 | 0.364 |
| Transverse temporal cortex | 4.81 | 0.30 | 4.89 | 0.30 | 0.465 | 0.498 |
| Insula | 4.37 | 0.27 | 4.41 | 0.28 | 0.080 | 0.779 |

The F and P values were obtained using one-way analysis of covariance (ANCOVA) with the adjustment for age, sex, HDRS score, YMRS score, illness duration, and lithium treatment as covariates.

Bonferroni correction was applied: P < 0.05/66 = 0.000758

All the P-values presented in the table are uncorrected values.

Significant group differences were presented in a bold face.

BD I, patients with bipolar I disorder; BD II, patients with bipolar II disorder; SD, standard deviation.

**Table S2. Correlation analysis between local gyrification index, illness duration, and depression severity in patients with bipolar disorders.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cortical regions** | **Illness duration** | | **HDRS** | |
| **r** | **P** | **r** | **P** |
| ***Left hemisphere*** |  |  |  |  |
| Caudal anterior cingulate cortex | 0.120 | 0.382 | 0.065 | 0.637 |
| Caudal middle frontal gyrus | 0.047 | 0.734 | -0.057 | 0.680 |
| Cuneus | 0.125 | 0.364 | 0.127 | 0.354 |
| Entorhinal cortex | -0.193 | 0.158 | 0.042 | 0.763 |
| Fusiform gyrus | -0.263 | 0.052 | -0.003 | 0.984 |
| Inferior parietal cortex | -0.094 | 0.496 | 0.069 | 0.618 |
| Inferior temporal gyrus | -0.104 | 0.450 | -0.024 | 0.860 |
| Isthmus of cingulate cortex | 0.061 | 0.658 | 0.005 | 0.971 |
| Lateral occipital cortex | -0.122 | 0.373 | 0.043 | 0.754 |
| Lateral orbitofrontal cortex | 0.067 | 0.626 | 0.165 | 0.229 |
| Lingual gyrus | -0.050 | 0.719 | 0.010 | 0.943 |
| Medial orbitofrontal cortex | 0.071 | 0.607 | 0.289 | 0.033 |
| Middle temporal gyrus | -0.035 | 0.801 | -0.110 | 0.423 |
| Parahippocampal gyrus | -0.246 | 0.071 | -0.049 | 0.723 |
| Paracentral lobule | 0.031 | 0.822 | 0.072 | 0.600 |
| Pars opercularis | 0.046 | 0.739 | 0.062 | 0.653 |
| Pars orbitalis | 0.089 | 0.517 | 0.158 | 0.250 |
| Pars triangularis | 0.031 | 0.821 | 0.198 | 0.148 |
| Pericalcarine cortex | 0.095 | 0.490 | 0.052 | 0.707 |
| Postcentral gyrus | 0.047 | 0.733 | 0.008 | 0.952 |
| Posterior cingulate cortex | 0.040 | 0.771 | 0.127 | 0.357 |
| Precentral gyrus | 0.077 | 0.577 | 0.093 | 0.498 |
| Precuneus | 0.135 | 0.327 | 0.125 | 0.363 |
| Rostral anterior cingulate cortex | 0.131 | 0.341 | 0.198 | 0.148 |
| Rostral middle frontal gyrus | -0.048 | 0.729 | 0.065 | 0.638 |
| Superior frontal gyrus | 0.056 | 0.685 | 0.017 | 0.904 |
| Superior parietal cortex | 0.018 | 0.896 | 0.142 | 0.301 |
| Superior temporal cortex | -0.093 | 0.500 | 0.014 | 0.919 |
| Supramarginal gyrus | -0.125 | 0.364 | -0.026 | 0.852 |
| Frontal pole | 0.083 | 0.545 | 0.121 | 0.379 |
| Temporal pole | -0.034 | 0.806 | 0.081 | 0.556 |
| Transverse temporal cortex | -0.023 | 0.867 | -0.045 | 0.742 |
| Insula | -0.013 | 0.923 | 0.117 | 0.396 |
| ***Right hemisphere*** |  |  |  |  |
| Caudal anterior cingulate cortex | 0.137 | 0.317 | 0.052 | 0.705 |
| Caudal middle frontal gyrus | 0.092 | 0.503 | 0.027 | 0.846 |
| Cuneus | 0.222 | 0.103 | 0.049 | 0.721 |
| Entorhinal cortex | -0.205 | 0.133 | -0.012 | 0.930 |
| Fusiform gyrus | -0.115 | 0.401 | 0.133 | 0.334 |
| Inferior parietal cortex | 0.004 | 0.980 | -0.049 | 0.720 |
| Inferior temporal gyrus | -0.027 | 0.847 | 0.001 | 0.991 |
| Isthmus of cingulate cortex | 0.119 | 0.385 | -0.051 | 0.709 |
| Lateral occipital cortex | -0.014 | 0.920 | 0.053 | 0.703 |
| Lateral orbitofrontal cortex | 0.093 | 0.500 | 0.254 | 0.062 |
| Lingual gyrus | 0.018 | 0.897 | 0.105 | 0.448 |
| Medial orbitofrontal cortex | 0.033 | 0.810 | 0.046 | 0.741 |
| Middle temporal gyrus | 0.082 | 0.551 | -0.033 | 0.810 |
| Parahippocampal gyrus | -0.202 | 0.139 | 0.039 | 0.780 |
| Paracentral lobule | 0.079 | 0.567 | -0.193 | 0.157 |
| Pars opercularis | 0.187 | 0.171 | -0.072 | 0.600 |
| Pars orbitalis | 0.046 | 0.740 | 0.243 | 0.074 |
| Pars triangularis | 0.204 | 0.134 | 0.092 | 0.506 |
| Pericalcarine cortex | 0.090 | 0.514 | 0.079 | 0.565 |
| Postcentral gyrus | 0.124 | 0.365 | 0.013 | 0.928 |
| Posterior cingulate cortex | 0.079 | 0.569 | -0.142 | 0.302 |
| Precentral gyrus | 0.141 | 0.305 | 0.016 | 0.907 |
| Precuneus | 0.251 | 0.064 | -0.105 | 0.444 |
| Rostral anterior cingulate cortex | 0.116 | 0.399 | -0.004 | 0.979 |
| Rostral middle frontal gyrus | 0.115 | 0.402 | -0.052 | 0.707 |
| Superior frontal gyrus | 0.046 | 0.738 | 0.006 | 0.967 |
| Superior parietal cortex | -0.018 | 0.895 | -0.005 | 0.973 |
| Superior temporal cortex | 0.151 | 0.270 | -0.017 | 0.900 |
| Supramarginal gyrus | 0.055 | 0.689 | -0.149 | 0.277 |
| Frontal pole | 0.147 | 0.283 | -0.054 | 0.694 |
| Temporal pole | 0.016 | 0.906 | 0.224 | 0.100 |
| Transverse temporal cortex | 0.167 | 0.224 | -0.047 | 0.733 |
| Insula | 0.158 | 0.251 | 0.001 | 0.992 |

A two-tailed Pearson's partial correlation analysis was performed controlling for age, sex, illness duration (for HDRS score analysis), HDRS score (for illness duration analysis), YMRS score, BD type, and lithium treatment as covariates

All the P-values presented in the table are uncorrected values.

Significant correlations were presented in a bold face.

HDRS, Hamilton Depression Rating Scale score

**Table S3. Comparison of local gyrification index between subgroups determined by lithium treatment in patients.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Cortical regions** | **Li- (n = 49)** | | **Li+ (n = 12)** | | **Li+ vs. Li-** | |
| **Mean** | **SD** | **Mean** | **SD** | **F (1, 53)** | **P-value** |
| ***Left hemisphere*** |  |  |  |  |  |  |
| Caudal anterior cingulate cortex | 1.95 | 0.10 | 1.91 | 0.09 | 2.785 | 0.101 |
| Caudal middle frontal gyrus | 3.20 | 0.16 | 3.21 | 0.20 | 0.278 | 0.600 |
| Cuneus | 3.11 | 0.26 | 3.03 | 0.19 | 2.477 | 0.121 |
| Entorhinal cortex | 2.59 | 0.15 | 2.61 | 0.12 | 0.966 | 0.330 |
| Fusiform gyrus | 2.73 | 0.13 | 2.76 | 0.12 | 0.972 | 0.329 |
| Inferior parietal cortex | 3.33 | 0.18 | 3.39 | 0.18 | 0.734 | 0.395 |
| Inferior temporal gyrus | 2.79 | 0.12 | 2.79 | 0.11 | 0.003 | 0.959 |
| Isthmus of cingulate cortex | 2.90 | 0.22 | 2.82 | 0.19 | 2.471 | 0.122 |
| Lateral occipital cortex | 2.68 | 0.14 | 2.72 | 0.14 | 0.851 | 0.361 |
| Lateral orbitofrontal cortex | 2.68 | 0.15 | 2.72 | 0.15 | 0.139 | 0.711 |
| Lingual gyrus | 2.90 | 0.17 | 2.85 | 0.16 | 0.987 | 0.325 |
| Medial orbitofrontal cortex | 2.18 | 0.06 | 2.19 | 0.08 | 0.002 | 0.967 |
| Middle temporal gyrus | 3.52 | 0.23 | 3.47 | 0.18 | 0.601 | 0.442 |
| Parahippocampal gyrus | 2.89 | 0.14 | 2.86 | 0.16 | 0.041 | 0.840 |
| Paracentral lobule | 2.37 | 0.15 | 2.38 | 0.11 | 0.027 | 0.871 |
| Pars opercularis | 4.32 | 0.29 | 4.28 | 0.32 | 0.941 | 0.337 |
| Pars orbitalis | 3.04 | 0.35 | 3.09 | 0.21 | 0.029 | 0.865 |
| Pars triangularis | 3.90 | 0.28 | 3.90 | 0.27 | 0.572 | 0.453 |
| Pericalcarine cortex | 2.98 | 0.25 | 2.90 | 0.19 | 2.258 | 0.139 |
| Postcentral gyrus | 3.59 | 0.21 | 3.56 | 0.19 | 1.095 | 0.300 |
| Posterior cingulate cortex | 2.24 | 0.15 | 2.24 | 0.14 | 0.284 | 0.596 |
| Precentral gyrus | 3.50 | 0.18 | 3.49 | 0.18 | 1.014 | 0.319 |
| Precuneus | 3.01 | 0.22 | 2.98 | 0.19 | 1.001 | 0.322 |
| Rostral anterior cingulate cortex | 2.09 | 0.08 | 2.10 | 0.10 | 0.175 | 0.677 |
| Rostral middle frontal gyrus | 2.81 | 0.16 | 2.84 | 0.16 | 0.237 | 0.629 |
| Superior frontal gyrus | 2.20 | 0.08 | 2.21 | 0.11 | 0.000 | 0.988 |
| Superior parietal cortex | 3.06 | 0.17 | 3.12 | 0.15 | 0.376 | 0.542 |
| Superior temporal cortex | 4.22 | 0.28 | 4.21 | 0.25 | 0.187 | 0.667 |
| Supramarginal gyrus | 3.70 | 0.22 | 3.66 | 0.21 | 0.607 | 0.439 |
| Frontal pole | 2.20 | 0.10 | 2.18 | 0.11 | 1.173 | 0.284 |
| Temporal pole | 2.41 | 0.09 | 2.48 | 0.15 | 1.321 | 0.256 |
| Transverse temporal cortex | 4.78 | 0.35 | 4.78 | 0.32 | 0.104 | 0.748 |
| Insula | 4.39 | 0.28 | 4.36 | 0.26 | 0.881 | 0.352 |
| ***Right hemisphere*** |  |  |  |  |  |  |
| Caudal anterior cingulate cortex | 2.00 | 0.09 | 1.98 | 0.12 | 1.151 | 0.288 |
| Caudal middle frontal gyrus | 3.18 | 0.22 | 3.19 | 0.17 | 0.146 | 0.704 |
| Cuneus | 3.37 | 0.24 | 3.25 | 0.20 | 4.690 | **0.035** |
| Entorhinal cortex | 2.59 | 0.17 | 2.64 | 0.15 | 2.301 | 0.135 |
| Fusiform gyrus | 2.70 | 0.15 | 2.74 | 0.13 | 0.981 | 0.326 |
| Inferior parietal cortex | 3.36 | 0.21 | 3.37 | 0.18 | 0.007 | 0.934 |
| Inferior temporal gyrus | 2.63 | 0.16 | 2.73 | 0.13 | 3.627 | 0.062 |
| Isthmus of cingulate cortex | 3.01 | 0.31 | 2.94 | 0.22 | 1.060 | 0.308 |
| Lateral occipital cortex | 2.75 | 0.14 | 2.73 | 0.12 | 0.544 | 0.464 |
| Lateral orbitofrontal cortex | 2.62 | 0.13 | 2.68 | 0.12 | 1.022 | 0.317 |
| Lingual gyrus | 3.02 | 0.24 | 2.97 | 0.18 | 1.212 | 0.276 |
| Medial orbitofrontal cortex | 2.18 | 0.08 | 2.20 | 0.10 | 0.334 | 0.566 |
| Middle temporal gyrus | 3.41 | 0.24 | 3.42 | 0.17 | 0.179 | 0.674 |
| Parahippocampal gyrus | 2.88 | 0.21 | 2.88 | 0.17 | 0.451 | 0.505 |
| Paracentral lobule | 2.42 | 0.15 | 2.39 | 0.11 | 0.807 | 0.373 |
| Pars opercularis | 4.35 | 0.34 | 4.35 | 0.31 | 0.472 | 0.495 |
| Pars orbitalis | 3.00 | 0.22 | 3.08 | 0.23 | 0.419 | 0.520 |
| Pars triangularis | 3.94 | 0.29 | 3.97 | 0.32 | 0.343 | 0.561 |
| Pericalcarine cortex | 3.15 | 0.25 | 3.07 | 0.20 | 2.161 | 0.147 |
| Postcentral gyrus | 3.53 | 0.24 | 3.53 | 0.18 | 0.702 | 0.406 |
| Posterior cingulate cortex | 2.26 | 0.14 | 2.25 | 0.13 | 0.166 | 0.686 |
| Precentral gyrus | 3.47 | 0.23 | 3.46 | 0.17 | 0.810 | 0.372 |
| Precuneus | 3.20 | 0.21 | 3.13 | 0.19 | 1.923 | 0.171 |
| Rostral anterior cingulate cortex | 2.13 | 0.08 | 2.14 | 0.13 | 0.054 | 0.817 |
| Rostral middle frontal gyrus | 2.80 | 0.16 | 2.85 | 0.16 | 0.346 | 0.559 |
| Superior frontal gyrus | 2.26 | 0.09 | 2.28 | 0.10 | 0.000 | 0.985 |
| Superior parietal cortex | 3.07 | 0.17 | 3.09 | 0.15 | 0.066 | 0.798 |
| Superior temporal cortex | 4.25 | 0.29 | 4.22 | 0.23 | 1.490 | 0.228 |
| Supramarginal gyrus | 3.62 | 0.24 | 3.65 | 0.19 | 0.025 | 0.874 |
| Frontal pole | 2.20 | 0.09 | 2.21 | 0.12 | 0.123 | 0.727 |
| Temporal pole | 2.44 | 0.11 | 2.48 | 0.11 | 0.404 | 0.528 |
| Transverse temporal cortex | 4.85 | 0.34 | 4.85 | 0.29 | 0.566 | 0.455 |
| Insula | 4.43 | 0.30 | 4.38 | 0.27 | 1.485 | 0.228 |

The F and P values were obtained using one-way analysis of covariance (ANCOVA) with the adjustment for age, sex, illness duration, HDRS and YMRS scores, and BD subtype as covariates.

Bonferroni correction was applied: P < 0.05/66 = 0.000758

All the P-values presented in the table are uncorrected values.

Significant group differences were presented in a bold face.

Li+, patients with lithium treatment; Li-, patients without lithium treatment; SD, standard deviation.

**Table S4. Comparison of local gyrification index between subgroups determined by antidepressant treatment in patients.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Cortical regions** | **AD- (n = 41)** | | **AD+ (n = 20)** | | **AD+ vs. AD-** | |
| **Mean** | **SD** | **Mean** | **SD** | **F (1, 53)** | **P-value** |
| ***Left hemisphere*** |  |  |  |  |  |  |
| Caudal anterior cingulate cortex | 1.90 | 0.09 | 1.94 | 0.10 | 1.834 | 0.181 |
| Caudal middle frontal gyrus | 3.21 | 0.21 | 3.20 | 0.17 | 0.186 | 0.668 |
| Cuneus | 3.06 | 0.22 | 3.03 | 0.18 | 0.556 | 0.459 |
| Entorhinal cortex | 2.60 | 0.12 | 2.63 | 0.13 | 1.720 | 0.195 |
| Fusiform gyrus | 2.75 | 0.12 | 2.76 | 0.11 | 0.010 | 0.921 |
| Inferior parietal cortex | 3.38 | 0.20 | 3.37 | 0.13 | 0.186 | 0.668 |
| Inferior temporal gyrus | 2.78 | 0.12 | 2.82 | 0.10 | 1.205 | 0.277 |
| Isthmus of cingulate cortex | 2.86 | 0.22 | 2.78 | 0.15 | 3.702 | 0.060 |
| Lateral occipital cortex | 2.72 | 0.15 | 2.69 | 0.12 | 0.599 | 0.442 |
| Lateral orbitofrontal cortex | 2.69 | 0.16 | 2.75 | 0.12 | 3.003 | 0.089 |
| Lingual gyrus | 2.88 | 0.18 | 2.84 | 0.12 | 1.840 | 0.181 |
| Medial orbitofrontal cortex | 2.18 | 0.08 | 2.21 | 0.08 | 4.066 | **0.049** |
| Middle temporal gyrus | 3.48 | 0.20 | 3.50 | 0.17 | 0.287 | 0.594 |
| Parahippocampal gyrus | 2.86 | 0.14 | 2.86 | 0.18 | 0.105 | 0.747 |
| Paracentral lobule | 2.37 | 0.12 | 2.41 | 0.11 | 0.853 | 0.360 |
| Pars opercularis | 4.30 | 0.34 | 4.27 | 0.27 | 0.352 | 0.556 |
| Pars orbitalis | 3.07 | 0.26 | 3.09 | 0.20 | 0.461 | 0.500 |
| Pars triangularis | 3.87 | 0.27 | 3.97 | 0.24 | 2.295 | 0.136 |
| Pericalcarine cortex | 2.93 | 0.22 | 2.90 | 0.15 | 0.923 | 0.341 |
| Postcentral gyrus | 3.56 | 0.21 | 3.57 | 0.15 | 0.004 | 0.950 |
| Posterior cingulate cortex | 2.23 | 0.15 | 2.26 | 0.12 | 0.030 | 0.863 |
| Precentral gyrus | 3.48 | 0.19 | 3.51 | 0.15 | 0.113 | 0.738 |
| Precuneus | 2.99 | 0.21 | 2.97 | 0.16 | 0.319 | 0.574 |
| Rostral anterior cingulate cortex | 2.08 | 0.09 | 2.12 | 0.10 | 2.708 | 0.106 |
| Rostral middle frontal gyrus | 2.84 | 0.17 | 2.84 | 0.14 | 0.120 | 0.731 |
| Superior frontal gyrus | 2.20 | 0.10 | 2.23 | 0.10 | 0.820 | 0.369 |
| Superior parietal cortex | 3.11 | 0.17 | 3.11 | 0.13 | 0.008 | 0.927 |
| Superior temporal cortex | 4.19 | 0.26 | 4.25 | 0.22 | 0.367 | 0.547 |
| Supramarginal gyrus | 3.68 | 0.23 | 3.66 | 0.17 | 0.412 | 0.524 |
| Frontal pole | 2.18 | 0.11 | 2.20 | 0.09 | 1.100 | 0.299 |
| Temporal pole | 2.44 | 0.13 | 2.53 | 0.15 | 5.685 | **0.021** |
| Transverse temporal cortex | 4.78 | 0.35 | 4.79 | 0.27 | 0.006 | 0.938 |
| Insula | 4.34 | 0.28 | 4.42 | 0.24 | 0.676 | 0.415 |
| ***Right hemisphere*** |  |  |  |  |  |  |
| Caudal anterior cingulate cortex | 1.97 | 0.11 | 2.02 | 0.13 | 2.656 | 0.109 |
| Caudal middle frontal gyrus | 3.19 | 0.20 | 3.19 | 0.14 | 0.006 | 0.938 |
| Cuneus | 3.28 | 0.24 | 3.26 | 0.16 | 0.018 | 0.895 |
| Entorhinal cortex | 2.62 | 0.16 | 2.65 | 0.14 | 0.998 | 0.322 |
| Fusiform gyrus | 2.73 | 0.14 | 2.73 | 0.12 | 0.000 | 0.985 |
| Inferior parietal cortex | 3.37 | 0.19 | 3.37 | 0.16 | 0.095 | 0.759 |
| Inferior temporal gyrus | 2.70 | 0.15 | 2.73 | 0.12 | 0.347 | 0.558 |
| Isthmus of cingulate cortex | 2.99 | 0.25 | 2.87 | 0.21 | 4.303 | **0.043** |
| Lateral occipital cortex | 2.74 | 0.12 | 2.73 | 0.13 | 0.066 | 0.798 |
| Lateral orbitofrontal cortex | 2.65 | 0.14 | 2.70 | 0.09 | 2.195 | 0.144 |
| Lingual gyrus | 3.00 | 0.20 | 2.93 | 0.17 | 2.908 | 0.094 |
| Medial orbitofrontal cortex | 2.19 | 0.10 | 2.22 | 0.09 | 1.633 | 0.207 |
| Middle temporal gyrus | 3.40 | 0.19 | 3.45 | 0.17 | 0.464 | 0.499 |
| Parahippocampal gyrus | 2.89 | 0.18 | 2.87 | 0.18 | 0.007 | 0.931 |
| Paracentral lobule | 2.40 | 0.13 | 2.39 | 0.11 | 0.169 | 0.683 |
| Pars opercularis | 4.35 | 0.33 | 4.35 | 0.28 | 0.047 | 0.830 |
| Pars orbitalis | 3.03 | 0.22 | 3.14 | 0.22 | 3.646 | 0.062 |
| Pars triangularis | 3.94 | 0.32 | 4.01 | 0.29 | 0.743 | 0.393 |
| Pericalcarine cortex | 3.11 | 0.23 | 3.05 | 0.16 | 1.419 | 0.239 |
| Postcentral gyrus | 3.51 | 0.21 | 3.57 | 0.14 | 1.302 | 0.259 |
| Posterior cingulate cortex | 2.25 | 0.14 | 2.26 | 0.13 | 0.190 | 0.664 |
| Precentral gyrus | 3.44 | 0.20 | 3.50 | 0.12 | 0.897 | 0.348 |
| Precuneus | 3.16 | 0.22 | 3.12 | 0.14 | 0.366 | 0.548 |
| Rostral anterior cingulate cortex | 2.12 | 0.12 | 2.16 | 0.13 | 1.122 | 0.294 |
| Rostral middle frontal gyrus | 2.84 | 0.17 | 2.86 | 0.15 | 0.310 | 0.580 |
| Superior frontal gyrus | 2.26 | 0.10 | 2.30 | 0.10 | 1.528 | 0.222 |
| Superior parietal cortex | 3.08 | 0.15 | 3.11 | 0.15 | 0.952 | 0.334 |
| Superior temporal cortex | 4.21 | 0.26 | 4.25 | 0.22 | 0.072 | 0.790 |
| Supramarginal gyrus | 3.63 | 0.22 | 3.69 | 0.16 | 0.776 | 0.382 |
| Frontal pole | 2.19 | 0.11 | 2.23 | 0.12 | 1.737 | 0.193 |
| Temporal pole | 2.45 | 0.10 | 2.51 | 0.12 | 3.321 | 0.074 |
| Transverse temporal cortex | 4.83 | 0.31 | 4.88 | 0.28 | 0.487 | 0.488 |
| Insula | 4.38 | 0.31 | 4.41 | 0.20 | 0.119 | 0.731 |

The F and P values were obtained using one-way analysis of covariance (ANCOVA) with the adjustment for age, sex, illness duration, HDRS and YMRS scores, and BD subtype as covariates.

Bonferroni correction was applied: P < 0.05/66 = 0.000758

All the P-values presented in the table are uncorrected values.

Significant group differences were presented in a bold face.

AD+, patients with antidepressant treatment; AD-, patients without antidepressant treatment; SD, standard deviation.

**Table S5. Comparison of local gyrification index between euthymic and depressive patients with bipolar disorder.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Cortical regions** | **Euthymic (n = 39)** | | **Depressive (n = 22)** | | **Euthymic vs. Depressive** | |
| **Mean** | **SD** | **Mean** | **SD** | **F (1, 54)** | **P-value** |
| ***Left hemisphere*** |  |  |  |  |  |  |
| Caudal anterior cingulate cortex | 1.91 | 0.09 | 1.93 | 0.11 | 0.440 | 0.510 |
| Caudal middle frontal gyrus | 3.19 | 0.20 | 3.24 | 0.19 | 0.056 | 0.815 |
| Cuneus | 3.03 | 0.20 | 3.09 | 0.22 | 0.467 | 0.497 |
| Entorhinal cortex | 2.60 | 0.12 | 2.63 | 0.13 | 1.494 | 0.227 |
| Fusiform gyrus | 2.75 | 0.13 | 2.75 | 0.10 | 0.013 | 0.911 |
| Inferior parietal cortex | 3.37 | 0.19 | 3.40 | 0.15 | 0.095 | 0.759 |
| Inferior temporal gyrus | 2.79 | 0.12 | 2.80 | 0.10 | 0.023 | 0.881 |
| Isthmus of cingulate cortex | 2.82 | 0.18 | 2.85 | 0.23 | 0.006 | 0.940 |
| Lateral occipital cortex | 2.71 | 0.15 | 2.71 | 0.13 | 0.069 | 0.794 |
| Lateral orbitofrontal cortex | 2.68 | 0.14 | 2.76 | 0.14 | 3.635 | 0.062 |
| Lingual gyrus | 2.86 | 0.15 | 2.87 | 0.19 | 0.065 | 0.799 |
| Medial orbitofrontal cortex | 2.17 | 0.07 | 2.22 | 0.08 | 7.707 | 0.008 |
| Middle temporal gyrus | 3.48 | 0.20 | 3.48 | 0.16 | 0.079 | 0.779 |
| Parahippocampal gyrus | 2.87 | 0.14 | 2.85 | 0.17 | 0.011 | 0.919 |
| Paracentral lobule | 2.36 | 0.10 | 2.41 | 0.14 | 0.862 | 0.357 |
| Pars opercularis | 4.24 | 0.32 | 4.38 | 0.30 | 0.821 | 0.369 |
| Pars orbitalis | 3.03 | 0.22 | 3.16 | 0.25 | 2.766 | 0.102 |
| Pars triangularis | 3.85 | 0.26 | 3.99 | 0.25 | 2.636 | 0.110 |
| Pericalcarine cortex | 2.90 | 0.19 | 2.95 | 0.22 | 0.121 | 0.729 |
| Postcentral gyrus | 3.55 | 0.20 | 3.59 | 0.17 | 0.002 | 0.961 |
| Posterior cingulate cortex | 2.21 | 0.11 | 2.29 | 0.17 | 2.072 | 0.156 |
| Precentral gyrus | 3.46 | 0.18 | 3.53 | 0.16 | 0.449 | 0.506 |
| Precuneus | 2.95 | 0.16 | 3.04 | 0.23 | 1.049 | 0.310 |
| Rostral anterior cingulate cortex | 2.08 | 0.08 | 2.12 | 0.10 | 2.562 | 0.115 |
| Rostral middle frontal gyrus | 2.82 | 0.15 | 2.88 | 0.18 | 1.238 | 0.271 |
| Superior frontal gyrus | 2.20 | 0.09 | 2.23 | 0.11 | 0.062 | 0.805 |
| Superior parietal cortex | 3.09 | 0.16 | 3.14 | 0.15 | 0.963 | 0.331 |
| Superior temporal cortex | 4.18 | 0.26 | 4.26 | 0.23 | 0.622 | 0.434 |
| Supramarginal gyrus | 3.67 | 0.21 | 3.68 | 0.22 | 0.056 | 0.815 |
| Frontal pole | 2.17 | 0.10 | 2.20 | 0.10 | 1.715 | 0.196 |
| Temporal pole | 2.44 | 0.15 | 2.51 | 0.14 | 2.242 | 0.140 |
| Transverse temporal cortex | 4.75 | 0.34 | 4.83 | 0.28 | 0.051 | 0.822 |
| Insula | 4.31 | 0.25 | 4.47 | 0.26 | 4.575 | 0.037 |
| ***Right hemisphere*** |  |  |  |  |  |  |
| Caudal anterior cingulate cortex | 1.97 | 0.10 | 2.00 | 0.14 | 0.420 | 0.520 |
| Caudal middle frontal gyrus | 3.17 | 0.18 | 3.23 | 0.16 | 0.148 | 0.702 |
| Cuneus | 3.26 | 0.21 | 3.30 | 0.21 | 0.129 | 0.721 |
| Entorhinal cortex | 2.64 | 0.16 | 2.63 | 0.15 | 0.014 | 0.907 |
| Fusiform gyrus | 2.72 | 0.14 | 2.74 | 0.13 | 0.640 | 0.427 |
| Inferior parietal cortex | 3.37 | 0.17 | 3.36 | 0.20 | 0.162 | 0.689 |
| Inferior temporal gyrus | 2.70 | 0.13 | 2.72 | 0.15 | 0.005 | 0.945 |
| Isthmus of cingulate cortex | 2.96 | 0.25 | 2.93 | 0.24 | 0.458 | 0.501 |
| Lateral occipital cortex | 2.73 | 0.12 | 2.74 | 0.14 | 0.057 | 0.813 |
| Lateral orbitofrontal cortex | 2.64 | 0.12 | 2.73 | 0.11 | 4.566 | 0.037 |
| Lingual gyrus | 2.96 | 0.18 | 3.01 | 0.22 | 0.588 | 0.446 |
| Medial orbitofrontal cortex | 2.19 | 0.08 | 2.22 | 0.12 | 0.355 | 0.554 |
| Middle temporal gyrus | 3.40 | 0.18 | 3.45 | 0.19 | 0.007 | 0.931 |
| Parahippocampal gyrus | 2.89 | 0.17 | 2.86 | 0.19 | 0.009 | 0.925 |
| Paracentral lobule | 2.40 | 0.12 | 2.38 | 0.13 | 0.797 | 0.376 |
| Pars opercularis | 4.34 | 0.31 | 4.38 | 0.32 | 0.244 | 0.623 |
| Pars orbitalis | 3.01 | 0.21 | 3.15 | 0.23 | 2.873 | 0.096 |
| Pars triangularis | 3.91 | 0.28 | 4.04 | 0.35 | 0.774 | 0.383 |
| Pericalcarine cortex | 3.07 | 0.21 | 3.12 | 0.22 | 0.140 | 0.710 |
| Postcentral gyrus | 3.50 | 0.18 | 3.57 | 0.20 | 0.195 | 0.660 |
| Posterior cingulate cortex | 2.26 | 0.12 | 2.25 | 0.16 | 0.382 | 0.539 |
| Precentral gyrus | 3.43 | 0.18 | 3.51 | 0.18 | 0.230 | 0.633 |
| Precuneus | 3.14 | 0.18 | 3.16 | 0.22 | 0.127 | 0.723 |
| Rostral anterior cingulate cortex | 2.13 | 0.10 | 2.14 | 0.15 | 0.039 | 0.844 |
| Rostral middle frontal gyrus | 2.83 | 0.16 | 2.86 | 0.17 | 0.039 | 0.843 |
| Superior frontal gyrus | 2.26 | 0.09 | 2.29 | 0.12 | 0.283 | 0.597 |
| Superior parietal cortex | 3.08 | 0.16 | 3.10 | 0.14 | 0.047 | 0.830 |
| Superior temporal cortex | 4.19 | 0.25 | 4.29 | 0.22 | 0.127 | 0.723 |
| Supramarginal gyrus | 3.64 | 0.20 | 3.67 | 0.20 | 0.510 | 0.478 |
| Frontal pole | 2.20 | 0.10 | 2.22 | 0.14 | 0.011 | 0.918 |
| Temporal pole | 2.45 | 0.10 | 2.51 | 0.12 | 1.537 | 0.220 |
| Transverse temporal cortex | 4.81 | 0.30 | 4.92 | 0.28 | 0.180 | 0.673 |
| Insula | 4.35 | 0.27 | 4.47 | 0.26 | 1.155 | 0.287 |

The F and P values were obtained using one-way analysis of covariance (ANCOVA) with the adjustment for age, sex, illness duration, BD subtype, and lithium treatment as covariates.

All the P-values presented in the table are uncorrected values.

Bonferroni correction was applied: P < 0.05/66 = 0.000758

Significant group differences were presented in a bold face.

euthymic, euthymic patients with bipolar disorder; depressive, depressive patients with bipolar disorder; SD, standard deviation.