**A hierarchical comparison of structural connectomes in Major Depressive Disorder versus controls in two large population samples**

Supplementary Materials

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**1: Proportion of UKB and GS lifetime MDD cases with current MDD**

For UKB, current MDD was assessed using questions based on the Patient’s Health Questionnaire (PHQ; field IDs: 20514, 20510, 20517, 20519, 20511, 20507, 20508, 20518, 20513; see Davis et al (2020)). Among subjects that were identified as cases with lifetime MDD in our study, only 6% fulfilled the criteria (PHQ>=5) for current MDD. We also extracted the variable “frequency of depressed mood in last two weeks” (field ID: 2050) that was asked during the day of the imaging assessment. Among the MDD cases in our study, 67% responded “not at all”, 26% responded “several days”, 4% responded “more than half the days”, and 3% responded “nearly every day”.

For GS, current MDD was best assessed using the 16-item Quick Inventory of Depressive Symptomatology (QIDS), which looks at depressive symptoms over the past seven days (Yeung et al., 2012). It is rated on a four-point Likert scale from 0 to 3. Total QIDS scores range from 0 to 27 (0-5: no depression, 6-10: mild depression, 11-15: moderate depression, 16-20: severe depression, >21: very severe depression). For subjects that were identified as cases in our GS sample, they had a mean Total QIDS score of 4, suggesting that majority did not have current depressive symptoms.

With majority of the cases not having current depressive symptoms in UKB and GS, it suggests that the observed effects are likely to be a generic MDD phenomenon rather than state effects.

**2: Timeline of imaging and MDD assessment in UKB and GS**

For UKB, the participants were imaged from 2014 onwards while lifetime history of MDD was assessed as part of the Mental Health Questionnaire administered from 2016 onwards. For GS, lifetime history of MDD was assessed during a recontact assessment and the participants were imaged a short while later starting the same year in 2015. To note, the use of lifetime MDD as a measure of MDD in this study helps to address complexities regarding the timing of assessments. To tie in with the above point, assessment of lifetime MDD is also more useful in capturing MDD cases as compared to “snapshots” of MDD at one point in time, given that onset of MDD is usually in the earlier years and have fluctuating courses.

Figure S1. Correlation coefficients of effect sizes (Cohen’s d) for case-control differences of all global, tier and nodal network measures in UKB and GS.

A collage of graphs showing different types of data

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Figure S2. We tested for the presence of rich club organisation (i.e., whether hubs are more likely to be interconnected and have stronger connection among themselves than would occur by chance) in (A) cases and (B) controls in GS. For (A) and (B), the x-axis represents the range of degree (k) tested, the primary y-axis represents the rich club coefficients derived from the original network (Φ(k); black line) and the randomly generated networks (Φrand(k); grey line), and the secondary y-axis represents the normalised rich-club coefficients (Φnorm(k); red line in (A), blue line in (B)). The shaded area represents the range of degree that showed significant rich club organisation, which is indicated by a Φnorm(k) of greater than 1 over a continuous range of k. A comparison of Φnorm(k) for cases and controls is shown in (C).

A graph on a black background

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Figure S3. To statistically test whether the results replicated in both samples, we conducted a random-effects inverse-variance weighted meta-analysis for each network measure. We compared the effect sizes obtained in UKB with those obtained in the meta-analysis, in terms of their correlation, and the percentage of effect sizes that remained in the same direction / increased in value in the meta-analysis. (A) Comparison of the effect sizes obtained in UKB with the combined meta-analytic effect sizes showed a strong positive correlation, with 93.9% of effect sizes being in the same direction and more than half (51.9%) having higher values in the meta-analysis. (B) The skewed distribution of the I2 statistic (percentage of total variance explained by heterogeneity alone) also suggest that heterogeneity between cohorts was low.

A comparison of a graph

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Table S1. List of all nodes and their abbreviations used in UKB and GS.

|  |  |
| --- | --- |
| **Region** | **Abbreviation** |
| Left-Thalamus-Proper | L-thal |
| Left-Caudate | L-caud |
| Left-Putamen | L-puta |
| Left-Pallidum | L-pall |
| Brain-Stem | bSTEM |
| Left-Hippocampus | L-hipp |
| Left-Amygdala | L-amyg |
| Left-Accumbens-area | L-accu |
| Left-VentralDC | L-venDC |
| Right-Thalamus-Proper | R-thal |
| Right-Caudate | R-caud |
| Right-Putamen | R-puta |
| Right-Pallidum | R-pall |
| Right-Hippocampus | R-hipp |
| Right-Amygdala | R-amyg |
| Right-Accumbens-area | R-accu |
| Right-VentralDC | R-venDC |
| ctx-lh-bankssts | L-banks |
| ctx-lh-caudalanteriorcingulate | L-cauACG |
| ctx-lh-caudalmiddlefrontal | L-cauMFR |
| ctx-lh-cuneus | L-cune |
| ctx-lh-entorhinal | L-entorh |
| ctx-lh-fusiform | L-fusif |
| ctx-lh-inferiorparietal | L-infPAR |
| ctx-lh-inferiortemporal | L-infTEM |
| ctx-lh-isthmuscingulate | L-istCIN |
| ctx-lh-lateraloccipital | L-latOCC |
| ctx-lh-lateralorbitofrontal | L-latORB |
| ctx-lh-lingual | L-lingual |
| ctx-lh-medialorbitofrontal | L-medORB |
| ctx-lh-middletemporal | L-midTEM |
| ctx-lh-parahippocampal | L-parHIP |
| ctx-lh-paracentral | L-parCEN |
| ctx-lh-parsopercularis | L-parOPE |
| ctx-lh-parsorbitalis | L-parORB |
| ctx-lh-parstriangularis | L-parTRI |
| ctx-lh-pericalcarine | L-perCAR |
| ctx-lh-postcentral | L-posCEN |
| ctx-lh-posteriorcingulate | L-posCIN |
| ctx-lh-precentral | L-preCEN |
| ctx-lh-precuneus | L-preCUN |
| ctx-lh-rostralanteriorcingulate | L-rosACG |
| ctx-lh-rostralmiddlefrontal | L-rosMFR |
| ctx-lh-superiorfrontal | L-supFRO |
| ctx-lh-superiorparietal | L-supPAR |
| ctx-lh-superiortemporal | L-supTEM |
| ctx-lh-supramarginal | L-supMAR |
| ctx-lh-frontalpole | L-froPOL |
| ctx-lh-temporalpole | L-temPOL |
| ctx-lh-transversetemporal | L-traTEM |
| ctx-lh-insula | L-insula |
| ctx-rh-bankssts | R-banks |
| ctx-rh-caudalanteriorcingulate | R-cauACG |
| ctx-rh-caudalmiddlefrontal | R-cauMFR |
| ctx-rh-cuneus | R-cune |
| ctx-rh-entorhinal | R-entorh |
| ctx-rh-fusiform | R-fusif |
| ctx-rh-inferiorparietal | R-infPAR |
| ctx-rh-inferiortemporal | R-infTEM |
| ctx-rh-isthmuscingulate | R-istCIN |
| ctx-rh-lateraloccipital | R-latOCC |
| ctx-rh-lateralorbitofrontal | R-latORB |
| ctx-rh-lingual | R-lingual |
| ctx-rh-medialorbitofrontal | R-medORB |
| ctx-rh-middletemporal | R-midTEM |
| ctx-rh-parahippocampal | R-parHIP |
| ctx-rh-paracentral | R-parCEN |
| ctx-rh-parsopercularis | R-parOPE |
| ctx-rh-parsorbitalis | R-parORB |
| ctx-rh-parstriangularis | R-parTRI |
| ctx-rh-pericalcarine | R-perCAR |
| ctx-rh-postcentral | R-posCEN |
| ctx-rh-posteriorcingulate | R-posCIN |
| ctx-rh-precentral | R-preCEN |
| ctx-rh-precuneus | R-preCUN |
| ctx-rh-rostralanteriorcingulate | R-rosACG |
| ctx-rh-rostralmiddlefrontal | R-rosMFR |
| ctx-rh-superiorfrontal | R-supFRO |
| ctx-rh-superiorparietal | R-supPAR |
| ctx-rh-superiortemporal | R-supTEM |
| ctx-rh-supramarginal | R-supMAR |
| ctx-rh-frontalpole | R-froPOL |
| ctx-rh-temporalpole | R-temPOL |
| ctx-rh-transversetemporal | R-traTEM |
| ctx-rh-insula | R-insula |

Table S2. List of antidepressants used in UKB and GS.

|  |  |
| --- | --- |
| **Code\_in\_UKB** | **Antidepressants** |
| 1140879616 | amitriptyline |
| 1140921600 | citalopram |
| 1140879540 | fluoxetine |
| 1140867878 | sertraline |
| 1140916282 | venlafaxine |
| 1140909806 | dosulepin |
| 1140867888 | paroxetine |
| 1141152732 | mirtazapine |
| 1141180212 | escitalopram |
| 1140879634 | trazodone |
| 1140867876 | prozac |
| 1140882236 | seroxat |
| 1141190158 | cipralex |
| 1141200564 | duloxetine |
| 1140867726 | lofepramine |
| 1140879620 | clomipramine |
| 1140867818 | nortriptyline |
| 1140879630 | imipramine |
| 1140879628 | dothiepin |
| 1141151946 | cipramil |
| 1140867948 | amitriptyline |
| 1140867624 | prothiaden |
| 1140867756 | trimipramine |
| 1140867884 | lustral |
| 1141151978 | reboxetine |
| 1141152736 | zispin |
| 1141201834 | cymbalta |
| 1140867690 | anafranil |
| 1140867640 | doxepin |
| 1140867920 | moclobemide |
| 1140867850 | phenelzine |
| 1140879544 | fluvoxamine |
| 1141200570 | yentreve |
| 1140867934 | triptafen |
| 1140867758 | surmontil |
| 1140867914 | tranylcypromine |
| 1140867820 | allegron |
| 1141151982 | edronax |
| 1140882244 | molipaxin |
| 1140879556 | mianserin |
| 1140867852 | nardil |
| 1140867860 | faverin |
| 1140917460 | nefazodone |
| 1140867938 | amitriptyline+chlordiazepoxide |
| 1140867856 | isocarboxazid |
| 1140867922 | manerix |
| 1140910820 | maoi |
| 1140882312 | sinequan |
| 1140867944 | tranylcypromine+trifluoperazine |
| 1140867784 | ludiomil |
| 1140867812 | norval |
| 1140867668 | tryptizol |

Table S3. Cohen's d for all network measures in UKB after controlling for age and sex in the main analysis comparing MDD cases and controls. Rows highlighted in yellow represent measures that were significantly different between cases and controls.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **measure** | **region** | **abbreviation** | **beta** | **sd** | **tval** | **cohen\_d** | **pval** | **pFDR** | **sig** |
| GEFF | Global |  | -0.0778 | 0.0314 | -2.4789 | -0.0761 | 0.0170 | 0.033 | \* |
| TIER\_NEFF | T1 |  | -0.0781 | 0.0313 | -2.4928 | -0.0766 | 0.0150 | 0.020 | \* |
| TIER\_NEFF | T2 |  | -0.0698 | 0.0313 | -2.2293 | -0.0685 | 0.0200 | 0.020 | \* |
| TIER\_NEFF | T3 |  | -0.0768 | 0.0314 | -2.4467 | -0.0751 | 0.0140 | 0.020 | \* |
| TIER\_NEFF | T4 |  | -0.0813 | 0.0315 | -2.5787 | -0.0792 | 0.0110 | 0.020 | \* |
| NEFF | Left-Thalamus-Proper | L-thal | -0.0757 | 0.0315 | -2.4020 | -0.0738 | 0.0250 | 0.059 |  |
| NEFF | Left-Caudate | L-caud | -0.0915 | 0.0314 | -2.9161 | -0.0896 | 0.0080 | 0.112 |  |
| NEFF | Left-Putamen | L-puta | -0.1008 | 0.0314 | -3.2122 | -0.0986 | 0.0020 | 0.013 | \* |
| NEFF | Left-Pallidum | L-pall | -0.0798 | 0.0309 | -2.5868 | -0.0794 | 0.0120 | 0.035 | \* |
| NEFF | Brain-Stem | bSTEM | -0.0260 | 0.0308 | -0.8445 | -0.0259 | 0.4116 | 0.412 |  |
| NEFF | Left-Hippocampus | L-hipp | -0.0567 | 0.0311 | -1.8190 | -0.0559 | 0.0609 | 0.160 |  |
| NEFF | Left-Amygdala | L-amyg | -0.0305 | 0.0311 | -0.9824 | -0.0302 | 0.3327 | 0.393 |  |
| NEFF | Left-Accumbens-area | L-accu | -0.0399 | 0.0312 | -1.2805 | -0.0393 | 0.1958 | 0.322 |  |
| NEFF | Left-VentralDC | L-venDC | -0.0803 | 0.0305 | -2.6296 | -0.0808 | 0.0070 | 0.033 | \* |
| NEFF | Right-Thalamus-Proper | R-thal | -0.0859 | 0.0310 | -2.7686 | -0.0850 | 0.0100 | 0.035 | \* |
| NEFF | Right-Caudate | R-caud | -0.0839 | 0.0306 | -2.7413 | -0.0842 | 0.0070 | 0.056 |  |
| NEFF | Right-Putamen | R-puta | -0.0960 | 0.0313 | -3.0692 | -0.0943 | 0.0020 | 0.013 | \* |
| NEFF | Right-Pallidum | R-pall | -0.1147 | 0.0311 | -3.6884 | -0.1133 | 0.0010 | 0.013 | \* |
| NEFF | Right-Hippocampus | R-hipp | -0.0601 | 0.0312 | -1.9267 | -0.0592 | 0.0599 | 0.139 |  |
| NEFF | Right-Amygdala | R-amyg | -0.0454 | 0.0313 | -1.4505 | -0.0445 | 0.1419 | 0.297 |  |
| NEFF | Right-Accumbens-area | R-accu | -0.0345 | 0.0314 | -1.1015 | -0.0338 | 0.2567 | 0.369 |  |
| NEFF | Right-VentralDC | R-venDC | -0.0600 | 0.0311 | -1.9292 | -0.0592 | 0.0579 | 0.079 |  |
| NEFF | ctx-lh-bankssts | L-banks | -0.0709 | 0.0314 | -2.2622 | -0.0695 | 0.0240 | 0.112 |  |
| NEFF | ctx-lh-caudalanteriorcingulate | L-cauACG | -0.0341 | 0.0315 | -1.0796 | -0.0332 | 0.3137 | 0.335 |  |
| NEFF | ctx-lh-caudalmiddlefrontal | L-cauMFR | -0.0467 | 0.0315 | -1.4836 | -0.0456 | 0.1578 | 0.303 |  |
| NEFF | ctx-lh-cuneus | L-cune | -0.0525 | 0.0313 | -1.6761 | -0.0515 | 0.0989 | 0.160 |  |
| NEFF | ctx-lh-entorhinal | L-entorh | -0.0315 | 0.0315 | -0.9994 | -0.0307 | 0.3327 | 0.393 |  |
| NEFF | ctx-lh-fusiform | L-fusif | -0.0719 | 0.0312 | -2.3069 | -0.0708 | 0.0210 | 0.112 |  |
| NEFF | ctx-lh-inferiorparietal | L-infPAR | -0.0345 | 0.0306 | -1.1274 | -0.0346 | 0.2587 | 0.322 |  |
| NEFF | ctx-lh-inferiortemporal | L-infTEM | -0.0696 | 0.0312 | -2.2317 | -0.0685 | 0.0290 | 0.112 |  |
| NEFF | ctx-lh-isthmuscingulate | L-istCIN | -0.0600 | 0.0313 | -1.9210 | -0.0590 | 0.0579 | 0.079 |  |
| NEFF | ctx-lh-lateraloccipital | L-latOCC | -0.0578 | 0.0310 | -1.8639 | -0.0572 | 0.0639 | 0.081 |  |
| NEFF | ctx-lh-lateralorbitofrontal | L-latORB | -0.0521 | 0.0315 | -1.6531 | -0.0508 | 0.0999 | 0.160 |  |
| NEFF | ctx-lh-lingual | L-lingual | -0.0190 | 0.0314 | -0.6046 | -0.0186 | 0.5594 | 0.581 |  |
| NEFF | ctx-lh-medialorbitofrontal | L-medORB | -0.0832 | 0.0315 | -2.6401 | -0.0811 | 0.0140 | 0.075 |  |
| NEFF | ctx-lh-middletemporal | L-midTEM | -0.0273 | 0.0313 | -0.8731 | -0.0268 | 0.3716 | 0.418 |  |
| NEFF | ctx-lh-parahippocampal | L-parHIP | -0.0488 | 0.0314 | -1.5528 | -0.0477 | 0.1139 | 0.262 |  |
| NEFF | ctx-lh-paracentral | L-parCEN | -0.0603 | 0.0314 | -1.9197 | -0.0590 | 0.0709 | 0.147 |  |
| NEFF | ctx-lh-parsopercularis | L-parOPE | -0.0622 | 0.0315 | -1.9736 | -0.0606 | 0.0470 | 0.160 |  |
| NEFF | ctx-lh-parsorbitalis | L-parORB | -0.0836 | 0.0315 | -2.6577 | -0.0816 | 0.0090 | 0.100 |  |
| NEFF | ctx-lh-parstriangularis | L-parTRI | -0.0874 | 0.0315 | -2.7757 | -0.0852 | 0.0130 | 0.100 |  |
| NEFF | ctx-lh-pericalcarine | L-perCAR | -0.0478 | 0.0313 | -1.5250 | -0.0468 | 0.1259 | 0.212 |  |
| NEFF | ctx-lh-postcentral | L-posCEN | -0.0331 | 0.0314 | -1.0572 | -0.0325 | 0.2967 | 0.348 |  |
| NEFF | ctx-lh-posteriorcingulate | L-posCIN | -0.0629 | 0.0313 | -2.0085 | -0.0617 | 0.0519 | 0.079 |  |
| NEFF | ctx-lh-precentral | L-preCEN | -0.0236 | 0.0314 | -0.7514 | -0.0231 | 0.4466 | 0.482 |  |
| NEFF | ctx-lh-precuneus | L-preCUN | -0.0817 | 0.0313 | -2.6068 | -0.0801 | 0.0130 | 0.035 | \* |
| NEFF | ctx-lh-rostralanteriorcingulate | L-rosACG | -0.0543 | 0.0315 | -1.7255 | -0.0530 | 0.1049 | 0.262 |  |
| NEFF | ctx-lh-rostralmiddlefrontal | L-rosMFR | -0.0710 | 0.0314 | -2.2602 | -0.0694 | 0.0260 | 0.119 |  |
| NEFF | ctx-lh-superiorfrontal | L-supFRO | -0.0366 | 0.0315 | -1.1604 | -0.0356 | 0.2627 | 0.322 |  |
| NEFF | ctx-lh-superiorparietal | L-supPAR | -0.0609 | 0.0312 | -1.9511 | -0.0599 | 0.0579 | 0.079 |  |
| NEFF | ctx-lh-superiortemporal | L-supTEM | -0.0642 | 0.0314 | -2.0479 | -0.0629 | 0.0350 | 0.074 |  |
| NEFF | ctx-lh-supramarginal | L-supMAR | -0.0426 | 0.0314 | -1.3574 | -0.0417 | 0.1868 | 0.265 |  |
| NEFF | ctx-lh-frontalpole | L-froPOL | -0.0691 | 0.0315 | -2.1973 | -0.0675 | 0.0340 | 0.130 |  |
| NEFF | ctx-lh-temporalpole | L-temPOL | 0.0213 | 0.0312 | 0.6831 | 0.0210 | 0.5095 | 0.558 |  |
| NEFF | ctx-lh-transversetemporal | L-traTEM | -0.0357 | 0.0313 | -1.1386 | -0.0350 | 0.2547 | 0.291 |  |
| NEFF | ctx-lh-insula | L-insula | -0.1002 | 0.0312 | -3.2143 | -0.0987 | 0.0010 | 0.016 | \* |
| NEFF | ctx-rh-bankssts | R-banks | -0.0409 | 0.0311 | -1.3174 | -0.0405 | 0.2068 | 0.279 |  |
| NEFF | ctx-rh-caudalanteriorcingulate | R-cauACG | -0.0395 | 0.0315 | -1.2538 | -0.0385 | 0.2507 | 0.291 |  |
| NEFF | ctx-rh-caudalmiddlefrontal | R-cauMFR | -0.0302 | 0.0314 | -0.9611 | -0.0295 | 0.3417 | 0.393 |  |
| NEFF | ctx-rh-cuneus | R-cune | -0.0544 | 0.0312 | -1.7444 | -0.0536 | 0.0869 | 0.160 |  |
| NEFF | ctx-rh-entorhinal | R-entorh | -0.0337 | 0.0315 | -1.0703 | -0.0329 | 0.2977 | 0.393 |  |
| NEFF | ctx-rh-fusiform | R-fusif | -0.0558 | 0.0311 | -1.7957 | -0.0551 | 0.0709 | 0.160 |  |
| NEFF | ctx-rh-inferiorparietal | R-infPAR | -0.0081 | 0.0312 | -0.2602 | -0.0080 | 0.7612 | 0.761 |  |
| NEFF | ctx-rh-inferiortemporal | R-infTEM | -0.0698 | 0.0309 | -2.2568 | -0.0693 | 0.0270 | 0.112 |  |
| NEFF | ctx-rh-isthmuscingulate | R-istCIN | -0.0541 | 0.0313 | -1.7282 | -0.0531 | 0.0809 | 0.096 |  |
| NEFF | ctx-rh-lateraloccipital | R-latOCC | -0.0416 | 0.0306 | -1.3617 | -0.0418 | 0.1868 | 0.197 |  |
| NEFF | ctx-rh-lateralorbitofrontal | R-latORB | -0.0509 | 0.0314 | -1.6211 | -0.0498 | 0.1119 | 0.163 |  |
| NEFF | ctx-rh-lingual | R-lingual | -0.0772 | 0.0313 | -2.4681 | -0.0758 | 0.0190 | 0.112 |  |
| NEFF | ctx-rh-medialorbitofrontal | R-medORB | -0.0483 | 0.0315 | -1.5310 | -0.0470 | 0.1429 | 0.190 |  |
| NEFF | ctx-rh-middletemporal | R-midTEM | -0.0475 | 0.0312 | -1.5225 | -0.0468 | 0.1249 | 0.212 |  |
| NEFF | ctx-rh-parahippocampal | R-parHIP | -0.0194 | 0.0315 | -0.6160 | -0.0189 | 0.5395 | 0.564 |  |
| NEFF | ctx-rh-paracentral | R-parCEN | -0.0652 | 0.0315 | -2.0737 | -0.0637 | 0.0450 | 0.135 |  |
| NEFF | ctx-rh-parsopercularis | R-parOPE | -0.0096 | 0.0315 | -0.3031 | -0.0093 | 0.7622 | 0.762 |  |
| NEFF | ctx-rh-parsorbitalis | R-parORB | -0.0659 | 0.0312 | -2.1110 | -0.0648 | 0.0490 | 0.161 |  |
| NEFF | ctx-rh-parstriangularis | R-parTRI | -0.0380 | 0.0314 | -1.2077 | -0.0371 | 0.2248 | 0.345 |  |
| NEFF | ctx-rh-pericalcarine | R-perCAR | -0.0508 | 0.0310 | -1.6406 | -0.0504 | 0.1199 | 0.212 |  |
| NEFF | ctx-rh-postcentral | R-posCEN | -0.0793 | 0.0313 | -2.5381 | -0.0779 | 0.0130 | 0.112 |  |
| NEFF | ctx-rh-posteriorcingulate | R-posCIN | -0.0648 | 0.0315 | -2.0594 | -0.0632 | 0.0420 | 0.135 |  |
| NEFF | ctx-rh-precentral | R-preCEN | -0.0258 | 0.0313 | -0.8253 | -0.0253 | 0.4046 | 0.405 |  |
| NEFF | ctx-rh-precuneus | R-preCUN | -0.0630 | 0.0314 | -2.0109 | -0.0618 | 0.0450 | 0.079 |  |
| NEFF | ctx-rh-rostralanteriorcingulate | R-rosACG | -0.0584 | 0.0316 | -1.8503 | -0.0568 | 0.0699 | 0.201 |  |
| NEFF | ctx-rh-rostralmiddlefrontal | R-rosMFR | -0.0582 | 0.0315 | -1.8497 | -0.0568 | 0.0779 | 0.160 |  |
| NEFF | ctx-rh-superiorfrontal | R-supFRO | -0.0459 | 0.0314 | -1.4633 | -0.0449 | 0.1548 | 0.246 |  |
| NEFF | ctx-rh-superiorparietal | R-supPAR | -0.0434 | 0.0314 | -1.3803 | -0.0424 | 0.1548 | 0.173 |  |
| NEFF | ctx-rh-superiortemporal | R-supTEM | -0.0432 | 0.0314 | -1.3768 | -0.0423 | 0.1748 | 0.262 |  |
| NEFF | ctx-rh-supramarginal | R-supMAR | -0.0605 | 0.0313 | -1.9300 | -0.0593 | 0.0619 | 0.139 |  |
| NEFF | ctx-rh-frontalpole | R-froPOL | -0.0425 | 0.0315 | -1.3527 | -0.0415 | 0.1928 | 0.322 |  |
| NEFF | ctx-rh-temporalpole | R-temPOL | -0.0704 | 0.0310 | -2.2732 | -0.0698 | 0.0230 | 0.119 |  |
| NEFF | ctx-rh-transversetemporal | R-traTEM | -0.0825 | 0.0315 | -2.6189 | -0.0804 | 0.0130 | 0.100 |  |
| NEFF | ctx-rh-insula | R-insula | -0.0578 | 0.0313 | -1.8487 | -0.0568 | 0.0500 | 0.135 |  |
| GCC | Global |  | -0.0587 | 0.0311 | -1.8833 | -0.0578 | 0.0509 | 0.051 |  |
| TIER\_CC | T1 |  | -0.0414 | 0.0312 | -1.3255 | -0.0407 | 0.1828 | - |  |
| TIER\_CC | T2 |  | -0.0408 | 0.0313 | -1.3054 | -0.0401 | 0.2028 | - |  |
| TIER\_CC | T3 |  | -0.0522 | 0.0311 | -1.6815 | -0.0516 | 0.0909 | - |  |
| TIER\_CC | T4 |  | -0.0762 | 0.0311 | -2.4467 | -0.0751 | 0.0180 | - |  |
| CC | Left-Thalamus-Proper | L-thal | -0.0377 | 0.0312 | -1.2076 | -0.0371 | 0.2278 | - |  |
| CC | Left-Caudate | L-caud | -0.0131 | 0.0310 | -0.4229 | -0.0130 | 0.7013 | - |  |
| CC | Left-Putamen | L-puta | -0.0025 | 0.0313 | -0.0802 | -0.0025 | 0.9231 | - |  |
| CC | Left-Pallidum | L-pall | 0.0455 | 0.0314 | 1.4470 | 0.0444 | 0.1469 | - |  |
| CC | Brain-Stem | bSTEM | -0.0649 | 0.0315 | -2.0621 | -0.0633 | 0.0410 | - |  |
| CC | Left-Hippocampus | L-hipp | -0.0075 | 0.0314 | -0.2384 | -0.0073 | 0.8002 | - |  |
| CC | Left-Amygdala | L-amyg | 0.0076 | 0.0314 | 0.2432 | 0.0075 | 0.8152 | - |  |
| CC | Left-Accumbens-area | L-accu | -0.0462 | 0.0311 | -1.4830 | -0.0455 | 0.1309 | - |  |
| CC | Left-VentralDC | L-venDC | -0.0001 | 0.0315 | -0.0027 | -0.0001 | 0.9970 | - |  |
| CC | Right-Thalamus-Proper | R-thal | -0.0309 | 0.0312 | -0.9904 | -0.0304 | 0.3546 | - |  |
| CC | Right-Caudate | R-caud | -0.0568 | 0.0310 | -1.8300 | -0.0562 | 0.0629 | - |  |
| CC | Right-Putamen | R-puta | -0.0284 | 0.0313 | -0.9059 | -0.0278 | 0.3786 | - |  |
| CC | Right-Pallidum | R-pall | 0.0470 | 0.0314 | 1.4955 | 0.0459 | 0.1429 | - |  |
| CC | Right-Hippocampus | R-hipp | -0.0185 | 0.0314 | -0.5888 | -0.0181 | 0.5794 | - |  |
| CC | Right-Amygdala | R-amyg | -0.0649 | 0.0314 | -2.0652 | -0.0634 | 0.0360 | - |  |
| CC | Right-Accumbens-area | R-accu | -0.0437 | 0.0313 | -1.3986 | -0.0430 | 0.1598 | - |  |
| CC | Right-VentralDC | R-venDC | -0.0338 | 0.0315 | -1.0725 | -0.0329 | 0.2867 | - |  |
| CC | ctx-lh-bankssts | L-banks | 0.0107 | 0.0313 | 0.3409 | 0.0105 | 0.7502 | - |  |
| CC | ctx-lh-caudalanteriorcingulate | L-cauACG | 0.0188 | 0.0313 | 0.6012 | 0.0185 | 0.5305 | - |  |
| CC | ctx-lh-caudalmiddlefrontal | L-cauMFR | -0.0517 | 0.0313 | -1.6550 | -0.0508 | 0.1099 | - |  |
| CC | ctx-lh-cuneus | L-cune | -0.0622 | 0.0314 | -1.9822 | -0.0609 | 0.0480 | - |  |
| CC | ctx-lh-entorhinal | L-entorh | -0.0075 | 0.0316 | -0.2377 | -0.0073 | 0.8192 | - |  |
| CC | ctx-lh-fusiform | L-fusif | -0.0173 | 0.0315 | -0.5506 | -0.0169 | 0.5884 | - |  |
| CC | ctx-lh-inferiorparietal | L-infPAR | -0.0569 | 0.0315 | -1.8061 | -0.0555 | 0.0759 | - |  |
| CC | ctx-lh-inferiortemporal | L-infTEM | -0.0144 | 0.0314 | -0.4588 | -0.0141 | 0.6424 | - |  |
| CC | ctx-lh-isthmuscingulate | L-istCIN | -0.0545 | 0.0311 | -1.7515 | -0.0538 | 0.0939 | - |  |
| CC | ctx-lh-lateraloccipital | L-latOCC | -0.0314 | 0.0314 | -1.0000 | -0.0307 | 0.3147 | - |  |
| CC | ctx-lh-lateralorbitofrontal | L-latORB | -0.0676 | 0.0315 | -2.1452 | -0.0659 | 0.0410 | - |  |
| CC | ctx-lh-lingual | L-lingual | -0.0243 | 0.0314 | -0.7730 | -0.0237 | 0.4446 | - |  |
| CC | ctx-lh-medialorbitofrontal | L-medORB | 0.0022 | 0.0315 | 0.0712 | 0.0022 | 0.9441 | - |  |
| CC | ctx-lh-middletemporal | L-midTEM | -0.0169 | 0.0313 | -0.5383 | -0.0165 | 0.6084 | - |  |
| CC | ctx-lh-parahippocampal | L-parHIP | -0.0571 | 0.0316 | -1.8078 | -0.0556 | 0.0629 | - |  |
| CC | ctx-lh-paracentral | L-parCEN | -0.0314 | 0.0308 | -1.0178 | -0.0313 | 0.3057 | - |  |
| CC | ctx-lh-parsopercularis | L-parOPE | -0.0188 | 0.0314 | -0.5983 | -0.0184 | 0.5315 | - |  |
| CC | ctx-lh-parsorbitalis | L-parORB | -0.0134 | 0.0315 | -0.4275 | -0.0131 | 0.6743 | - |  |
| CC | ctx-lh-parstriangularis | L-parTRI | -0.0661 | 0.0315 | -2.1020 | -0.0646 | 0.0380 | - |  |
| CC | ctx-lh-pericalcarine | L-perCAR | -0.0437 | 0.0313 | -1.3962 | -0.0429 | 0.1888 | - |  |
| CC | ctx-lh-postcentral | L-posCEN | -0.0592 | 0.0304 | -1.9437 | -0.0597 | 0.0430 | - |  |
| CC | ctx-lh-posteriorcingulate | L-posCIN | -0.0293 | 0.0311 | -0.9403 | -0.0289 | 0.3237 | - |  |
| CC | ctx-lh-precentral | L-preCEN | -0.0439 | 0.0310 | -1.4153 | -0.0435 | 0.1568 | - |  |
| CC | ctx-lh-precuneus | L-preCUN | -0.0149 | 0.0314 | -0.4744 | -0.0146 | 0.6194 | - |  |
| CC | ctx-lh-rostralanteriorcingulate | L-rosACG | -0.0659 | 0.0314 | -2.0980 | -0.0644 | 0.0350 | - |  |
| CC | ctx-lh-rostralmiddlefrontal | L-rosMFR | -0.0312 | 0.0315 | -0.9917 | -0.0305 | 0.2997 | - |  |
| CC | ctx-lh-superiorfrontal | L-supFRO | -0.0554 | 0.0312 | -1.7738 | -0.0545 | 0.0869 | - |  |
| CC | ctx-lh-superiorparietal | L-supPAR | -0.0613 | 0.0313 | -1.9610 | -0.0602 | 0.0539 | - |  |
| CC | ctx-lh-superiortemporal | L-supTEM | -0.0067 | 0.0314 | -0.2131 | -0.0065 | 0.8232 | - |  |
| CC | ctx-lh-supramarginal | L-supMAR | -0.0399 | 0.0310 | -1.2859 | -0.0395 | 0.2028 | - |  |
| CC | ctx-lh-frontalpole | L-froPOL | 0.0227 | 0.0314 | 0.7218 | 0.0222 | 0.4955 | - |  |
| CC | ctx-lh-temporalpole | L-temPOL | -0.0403 | 0.0314 | -1.2827 | -0.0394 | 0.1928 | - |  |
| CC | ctx-lh-transversetemporal | L-traTEM | -0.0371 | 0.0311 | -1.1940 | -0.0367 | 0.2158 | - |  |
| CC | ctx-lh-insula | L-insula | -0.0096 | 0.0313 | -0.3076 | -0.0094 | 0.7632 | - |  |
| CC | ctx-rh-bankssts | R-banks | -0.0376 | 0.0314 | -1.1982 | -0.0368 | 0.2358 | - |  |
| CC | ctx-rh-caudalanteriorcingulate | R-cauACG | -0.0296 | 0.0311 | -0.9526 | -0.0293 | 0.3367 | - |  |
| CC | ctx-rh-caudalmiddlefrontal | R-cauMFR | -0.0347 | 0.0312 | -1.1132 | -0.0342 | 0.2747 | - |  |
| CC | ctx-rh-cuneus | R-cune | -0.0648 | 0.0314 | -2.0627 | -0.0633 | 0.0280 | - |  |
| CC | ctx-rh-entorhinal | R-entorh | -0.0422 | 0.0316 | -1.3354 | -0.0411 | 0.1848 | - |  |
| CC | ctx-rh-fusiform | R-fusif | -0.0364 | 0.0315 | -1.1523 | -0.0354 | 0.2507 | - |  |
| CC | ctx-rh-inferiorparietal | R-infPAR | -0.0219 | 0.0315 | -0.6966 | -0.0214 | 0.4845 | - |  |
| CC | ctx-rh-inferiortemporal | R-infTEM | -0.0140 | 0.0315 | -0.4438 | -0.0136 | 0.6803 | - |  |
| CC | ctx-rh-isthmuscingulate | R-istCIN | -0.0359 | 0.0311 | -1.1517 | -0.0354 | 0.2807 | - |  |
| CC | ctx-rh-lateraloccipital | R-latOCC | -0.0453 | 0.0315 | -1.4369 | -0.0441 | 0.1508 | - |  |
| CC | ctx-rh-lateralorbitofrontal | R-latORB | -0.0334 | 0.0315 | -1.0586 | -0.0325 | 0.2807 | - |  |
| CC | ctx-rh-lingual | R-lingual | -0.0012 | 0.0314 | -0.0391 | -0.0012 | 0.9700 | - |  |
| CC | ctx-rh-medialorbitofrontal | R-medORB | -0.0185 | 0.0313 | -0.5913 | -0.0182 | 0.5554 | - |  |
| CC | ctx-rh-middletemporal | R-midTEM | -0.0320 | 0.0315 | -1.0186 | -0.0313 | 0.2997 | - |  |
| CC | ctx-rh-parahippocampal | R-parHIP | 0.0013 | 0.0313 | 0.0415 | 0.0013 | 0.9670 | - |  |
| CC | ctx-rh-paracentral | R-parCEN | -0.0213 | 0.0312 | -0.6844 | -0.0210 | 0.5085 | - |  |
| CC | ctx-rh-parsopercularis | R-parOPE | -0.0229 | 0.0314 | -0.7311 | -0.0225 | 0.4885 | - |  |
| CC | ctx-rh-parsorbitalis | R-parORB | -0.0563 | 0.0314 | -1.7907 | -0.0550 | 0.0809 | - |  |
| CC | ctx-rh-parstriangularis | R-parTRI | -0.0492 | 0.0314 | -1.5663 | -0.0481 | 0.1229 | - |  |
| CC | ctx-rh-pericalcarine | R-perCAR | -0.0391 | 0.0313 | -1.2490 | -0.0384 | 0.2298 | - |  |
| CC | ctx-rh-postcentral | R-posCEN | -0.0311 | 0.0312 | -0.9978 | -0.0306 | 0.3187 | - |  |
| CC | ctx-rh-posteriorcingulate | R-posCIN | -0.0292 | 0.0311 | -0.9400 | -0.0289 | 0.3656 | - |  |
| CC | ctx-rh-precentral | R-preCEN | -0.0683 | 0.0313 | -2.1847 | -0.0671 | 0.0250 | - |  |
| CC | ctx-rh-precuneus | R-preCUN | -0.0735 | 0.0315 | -2.3358 | -0.0717 | 0.0270 | - |  |
| CC | ctx-rh-rostralanteriorcingulate | R-rosACG | -0.0122 | 0.0315 | -0.3869 | -0.0119 | 0.6873 | - |  |
| CC | ctx-rh-rostralmiddlefrontal | R-rosMFR | -0.0331 | 0.0312 | -1.0586 | -0.0325 | 0.2647 | - |  |
| CC | ctx-rh-superiorfrontal | R-supFRO | -0.0441 | 0.0311 | -1.4196 | -0.0436 | 0.1618 | - |  |
| CC | ctx-rh-superiorparietal | R-supPAR | -0.0769 | 0.0314 | -2.4493 | -0.0752 | 0.0190 | - |  |
| CC | ctx-rh-superiortemporal | R-supTEM | -0.0063 | 0.0315 | -0.2003 | -0.0062 | 0.8272 | - |  |
| CC | ctx-rh-supramarginal | R-supMAR | -0.0330 | 0.0313 | -1.0545 | -0.0324 | 0.3127 | - |  |
| CC | ctx-rh-frontalpole | R-froPOL | -0.0196 | 0.0314 | -0.6241 | -0.0192 | 0.5175 | - |  |
| CC | ctx-rh-temporalpole | R-temPOL | -0.0481 | 0.0312 | -1.5451 | -0.0474 | 0.1179 | - |  |
| CC | ctx-rh-transversetemporal | R-traTEM | 0.0094 | 0.0314 | 0.3003 | 0.0092 | 0.7582 | - |  |
| CC | ctx-rh-insula | R-insula | -0.0156 | 0.0314 | -0.4952 | -0.0152 | 0.6474 | - |  |

Table S4. Cohen's d for all network measures in GS after controlling for age, sex and site in the main analysis comparing MDD cases and controls. To aid comparison, rows highlighted in yellow represent measures that were significantly different between cases and controls in the discovery cohort (UKB) in the main analysis.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **measure** | **region** | **abbreviation** | **beta** | **sd** | **tval** | **cohen\_d** | **pval** | **pFDR** | **sig** |
| GEFF | Global |  | -0.101 | 0.091 | -1.116 | -0.108 | 0.246 | 0.737 |  |
| TIER\_NEFF | T1 |  | -0.094 | 0.094 | -1.001 | -0.097 | 0.312 | 0.416 |  |
| TIER\_NEFF | T2 |  | -0.096 | 0.095 | -1.008 | -0.097 | 0.306 | 0.416 |  |
| TIER\_NEFF | T3 |  | -0.069 | 0.088 | -0.778 | -0.075 | 0.429 | 0.429 |  |
| TIER\_NEFF | T4 |  | -0.111 | 0.087 | -1.275 | -0.123 | 0.205 | 0.416 |  |
| NEFF | Left-Thalamus-Proper | L-thal | -0.084 | 0.092 | -0.912 | -0.088 | 0.365 | 0.724 |  |
| NEFF | Left-Caudate | L-caud | -0.007 | 0.097 | -0.072 | -0.007 | 0.941 | 0.941 |  |
| NEFF | Left-Putamen | L-puta | -0.069 | 0.096 | -0.717 | -0.069 | 0.441 | 0.724 |  |
| NEFF | Left-Pallidum | L-pall | -0.079 | 0.099 | -0.804 | -0.078 | 0.401 | 0.724 |  |
| NEFF | Brain-Stem | bSTEM | -0.146 | 0.095 | -1.534 | -0.148 | 0.116 | 0.502 |  |
| NEFF | Left-Hippocampus | L-hipp | -0.128 | 0.093 | -1.379 | -0.133 | 0.161 | 0.502 |  |
| NEFF | Left-Amygdala | L-amyg | -0.045 | 0.097 | -0.462 | -0.045 | 0.626 | 0.752 |  |
| NEFF | Left-Accumbens-area | L-accu | -0.009 | 0.098 | -0.096 | -0.009 | 0.928 | 0.928 |  |
| NEFF | Left-VentralDC | L-venDC | -0.103 | 0.096 | -1.069 | -0.103 | 0.266 | 0.724 |  |
| NEFF | Right-Thalamus-Proper | R-thal | -0.110 | 0.090 | -1.218 | -0.118 | 0.214 | 0.724 |  |
| NEFF | Right-Caudate | R-caud | -0.034 | 0.098 | -0.347 | -0.034 | 0.723 | 0.858 |  |
| NEFF | Right-Putamen | R-puta | -0.134 | 0.094 | -1.424 | -0.137 | 0.140 | 0.724 |  |
| NEFF | Right-Pallidum | R-pall | -0.107 | 0.097 | -1.100 | -0.106 | 0.272 | 0.724 |  |
| NEFF | Right-Hippocampus | R-hipp | -0.132 | 0.095 | -1.386 | -0.134 | 0.168 | 0.502 |  |
| NEFF | Right-Amygdala | R-amyg | 0.008 | 0.096 | 0.088 | 0.009 | 0.928 | 0.928 |  |
| NEFF | Right-Accumbens-area | R-accu | -0.166 | 0.096 | -1.738 | -0.168 | 0.095 | 0.621 |  |
| NEFF | Right-VentralDC | R-venDC | -0.037 | 0.096 | -0.389 | -0.038 | 0.689 | 0.881 |  |
| NEFF | ctx-lh-bankssts | L-banks | -0.015 | 0.097 | -0.158 | -0.015 | 0.852 | 0.858 |  |
| NEFF | ctx-lh-caudalanteriorcingulate | L-cauACG | -0.045 | 0.095 | -0.477 | -0.046 | 0.618 | 0.754 |  |
| NEFF | ctx-lh-caudalmiddlefrontal | L-cauMFR | -0.094 | 0.093 | -1.019 | -0.098 | 0.274 | 0.683 |  |
| NEFF | ctx-lh-cuneus | L-cune | -0.276 | 0.094 | -2.941 | -0.284 | 0.004 | 0.100 |  |
| NEFF | ctx-lh-entorhinal | L-entorh | -0.072 | 0.098 | -0.742 | -0.072 | 0.449 | 0.621 |  |
| NEFF | ctx-lh-fusiform | L-fusif | 0.029 | 0.092 | 0.315 | 0.030 | 0.745 | 0.810 |  |
| NEFF | ctx-lh-inferiorparietal | L-infPAR | -0.093 | 0.092 | -1.011 | -0.098 | 0.298 | 0.858 |  |
| NEFF | ctx-lh-inferiortemporal | L-infTEM | -0.058 | 0.097 | -0.603 | -0.058 | 0.517 | 0.784 |  |
| NEFF | ctx-lh-isthmuscingulate | L-istCIN | -0.093 | 0.094 | -0.988 | -0.095 | 0.299 | 0.724 |  |
| NEFF | ctx-lh-lateraloccipital | L-latOCC | -0.027 | 0.095 | -0.287 | -0.028 | 0.767 | 0.858 |  |
| NEFF | ctx-lh-lateralorbitofrontal | L-latORB | -0.121 | 0.079 | -1.525 | -0.147 | 0.124 | 0.502 |  |
| NEFF | ctx-lh-lingual | L-lingual | -0.180 | 0.096 | -1.882 | -0.182 | 0.055 | 0.502 |  |
| NEFF | ctx-lh-medialorbitofrontal | L-medORB | -0.068 | 0.095 | -0.710 | -0.069 | 0.468 | 0.754 |  |
| NEFF | ctx-lh-middletemporal | L-midTEM | -0.022 | 0.098 | -0.226 | -0.022 | 0.811 | 0.928 |  |
| NEFF | ctx-lh-parahippocampal | L-parHIP | -0.077 | 0.098 | -0.783 | -0.076 | 0.432 | 0.621 |  |
| NEFF | ctx-lh-paracentral | L-parCEN | -0.069 | 0.095 | -0.721 | -0.070 | 0.418 | 0.858 |  |
| NEFF | ctx-lh-parsopercularis | L-parOPE | -0.035 | 0.093 | -0.379 | -0.037 | 0.700 | 0.796 |  |
| NEFF | ctx-lh-parsorbitalis | L-parORB | -0.078 | 0.094 | -0.824 | -0.080 | 0.437 | 0.621 |  |
| NEFF | ctx-lh-parstriangularis | L-parTRI | -0.084 | 0.095 | -0.877 | -0.085 | 0.389 | 0.737 |  |
| NEFF | ctx-lh-pericalcarine | L-perCAR | -0.098 | 0.094 | -1.044 | -0.101 | 0.301 | 0.683 |  |
| NEFF | ctx-lh-postcentral | L-posCEN | -0.155 | 0.097 | -1.608 | -0.155 | 0.094 | 0.858 |  |
| NEFF | ctx-lh-posteriorcingulate | L-posCIN | -0.078 | 0.097 | -0.804 | -0.078 | 0.395 | 0.858 |  |
| NEFF | ctx-lh-precentral | L-preCEN | 0.015 | 0.096 | 0.158 | 0.015 | 0.858 | 0.858 |  |
| NEFF | ctx-lh-precuneus | L-preCUN | -0.039 | 0.090 | -0.439 | -0.042 | 0.648 | 0.877 |  |
| NEFF | ctx-lh-rostralanteriorcingulate | L-rosACG | -0.059 | 0.093 | -0.640 | -0.062 | 0.533 | 0.686 |  |
| NEFF | ctx-lh-rostralmiddlefrontal | L-rosMFR | -0.024 | 0.086 | -0.277 | -0.027 | 0.782 | 0.815 |  |
| NEFF | ctx-lh-superiorfrontal | L-supFRO | -0.052 | 0.087 | -0.594 | -0.057 | 0.545 | 0.784 |  |
| NEFF | ctx-lh-superiorparietal | L-supPAR | -0.149 | 0.090 | -1.653 | -0.160 | 0.082 | 0.724 |  |
| NEFF | ctx-lh-superiortemporal | L-supTEM | 0.025 | 0.097 | 0.256 | 0.025 | 0.791 | 0.928 |  |
| NEFF | ctx-lh-supramarginal | L-supMAR | 0.025 | 0.098 | 0.260 | 0.025 | 0.773 | 0.858 |  |
| NEFF | ctx-lh-frontalpole | L-froPOL | -0.080 | 0.082 | -0.979 | -0.095 | 0.317 | 0.621 |  |
| NEFF | ctx-lh-temporalpole | L-temPOL | 0.063 | 0.087 | 0.719 | 0.069 | 0.448 | 0.621 |  |
| NEFF | ctx-lh-transversetemporal | L-traTEM | 0.159 | 0.096 | 1.652 | 0.160 | 0.102 | 0.621 |  |
| NEFF | ctx-lh-insula | L-insula | -0.047 | 0.096 | -0.490 | -0.047 | 0.607 | 0.754 |  |
| NEFF | ctx-rh-bankssts | R-banks | -0.109 | 0.099 | -1.103 | -0.107 | 0.260 | 0.858 |  |
| NEFF | ctx-rh-caudalanteriorcingulate | R-cauACG | -0.048 | 0.092 | -0.523 | -0.051 | 0.633 | 0.754 |  |
| NEFF | ctx-rh-caudalmiddlefrontal | R-cauMFR | -0.003 | 0.089 | -0.034 | -0.003 | 0.972 | 0.972 |  |
| NEFF | ctx-rh-cuneus | R-cune | -0.144 | 0.092 | -1.565 | -0.151 | 0.117 | 0.502 |  |
| NEFF | ctx-rh-entorhinal | R-entorh | -0.132 | 0.097 | -1.361 | -0.131 | 0.183 | 0.621 |  |
| NEFF | ctx-rh-fusiform | R-fusif | 0.085 | 0.092 | 0.926 | 0.089 | 0.383 | 0.737 |  |
| NEFF | ctx-rh-inferiorparietal | R-infPAR | -0.114 | 0.095 | -1.204 | -0.116 | 0.221 | 0.724 |  |
| NEFF | ctx-rh-inferiortemporal | R-infTEM | -0.032 | 0.095 | -0.337 | -0.033 | 0.729 | 0.858 |  |
| NEFF | ctx-rh-isthmuscingulate | R-istCIN | -0.019 | 0.097 | -0.197 | -0.019 | 0.847 | 0.928 |  |
| NEFF | ctx-rh-lateraloccipital | R-latOCC | -0.069 | 0.096 | -0.722 | -0.070 | 0.460 | 0.858 |  |
| NEFF | ctx-rh-lateralorbitofrontal | R-latORB | 0.046 | 0.074 | 0.613 | 0.059 | 0.544 | 0.754 |  |
| NEFF | ctx-rh-lingual | R-lingual | -0.060 | 0.094 | -0.638 | -0.062 | 0.513 | 0.754 |  |
| NEFF | ctx-rh-medialorbitofrontal | R-medORB | -0.090 | 0.091 | -0.991 | -0.096 | 0.318 | 0.621 |  |
| NEFF | ctx-rh-middletemporal | R-midTEM | -0.072 | 0.097 | -0.744 | -0.072 | 0.441 | 0.724 |  |
| NEFF | ctx-rh-parahippocampal | R-parHIP | -0.086 | 0.096 | -0.902 | -0.087 | 0.368 | 0.621 |  |
| NEFF | ctx-rh-paracentral | R-parCEN | -0.075 | 0.097 | -0.770 | -0.074 | 0.419 | 0.858 |  |
| NEFF | ctx-rh-parsopercularis | R-parOPE | 0.154 | 0.091 | 1.703 | 0.164 | 0.083 | 0.502 |  |
| NEFF | ctx-rh-parsorbitalis | R-parORB | -0.053 | 0.088 | -0.602 | -0.058 | 0.526 | 0.754 |  |
| NEFF | ctx-rh-parstriangularis | R-parTRI | 0.076 | 0.092 | 0.831 | 0.080 | 0.413 | 0.737 |  |
| NEFF | ctx-rh-pericalcarine | R-perCAR | -0.119 | 0.092 | -1.296 | -0.125 | 0.181 | 0.502 |  |
| NEFF | ctx-rh-postcentral | R-posCEN | -0.091 | 0.097 | -0.942 | -0.091 | 0.330 | 0.858 |  |
| NEFF | ctx-rh-posteriorcingulate | R-posCIN | -0.055 | 0.095 | -0.574 | -0.055 | 0.559 | 0.858 |  |
| NEFF | ctx-rh-precentral | R-preCEN | -0.129 | 0.096 | -1.336 | -0.129 | 0.188 | 0.858 |  |
| NEFF | ctx-rh-precuneus | R-preCUN | -0.154 | 0.092 | -1.672 | -0.162 | 0.093 | 0.724 |  |
| NEFF | ctx-rh-rostralanteriorcingulate | R-rosACG | -0.093 | 0.083 | -1.121 | -0.108 | 0.273 | 0.621 |  |
| NEFF | ctx-rh-rostralmiddlefrontal | R-rosMFR | -0.046 | 0.082 | -0.560 | -0.054 | 0.584 | 0.858 |  |
| NEFF | ctx-rh-superiorfrontal | R-supFRO | -0.011 | 0.087 | -0.128 | -0.012 | 0.890 | 0.931 |  |
| NEFF | ctx-rh-superiorparietal | R-supPAR | -0.096 | 0.092 | -1.041 | -0.100 | 0.287 | 0.724 |  |
| NEFF | ctx-rh-superiortemporal | R-supTEM | -0.081 | 0.097 | -0.839 | -0.081 | 0.390 | 0.724 |  |
| NEFF | ctx-rh-supramarginal | R-supMAR | 0.028 | 0.099 | 0.289 | 0.028 | 0.782 | 0.858 |  |
| NEFF | ctx-rh-frontalpole | R-froPOL | -0.076 | 0.081 | -0.934 | -0.090 | 0.366 | 0.621 |  |
| NEFF | ctx-rh-temporalpole | R-temPOL | 0.012 | 0.089 | 0.130 | 0.013 | 0.897 | 0.928 |  |
| NEFF | ctx-rh-transversetemporal | R-traTEM | -0.139 | 0.090 | -1.544 | -0.149 | 0.135 | 0.621 |  |
| NEFF | ctx-rh-insula | R-insula | -0.128 | 0.095 | -1.336 | -0.129 | 0.165 | 0.858 |  |
| GCC | Global |  | -0.007 | 0.097 | -0.069 | -0.007 | 0.937 | 0.937 |  |
| TIER\_CC | T1 |  | 0.033 | 0.097 | 0.342 | 0.033 | 0.735 | - |  |
| TIER\_CC | T2 |  | -0.014 | 0.095 | -0.148 | -0.014 | 0.880 | - |  |
| TIER\_CC | T3 |  | 0.057 | 0.097 | 0.582 | 0.056 | 0.569 | - |  |
| TIER\_CC | T4 |  | -0.050 | 0.092 | -0.549 | -0.053 | 0.566 | - |  |
| CC | Left-Thalamus-Proper | L-thal | 0.079 | 0.098 | 0.809 | 0.078 | 0.406 | - |  |
| CC | Left-Caudate | L-caud | -0.050 | 0.098 | -0.515 | -0.050 | 0.563 | - |  |
| CC | Left-Putamen | L-puta | 0.024 | 0.098 | 0.244 | 0.024 | 0.802 | - |  |
| CC | Left-Pallidum | L-pall | 0.018 | 0.097 | 0.188 | 0.018 | 0.848 | - |  |
| CC | Brain-Stem | bSTEM | -0.135 | 0.097 | -1.395 | -0.135 | 0.159 | - |  |
| CC | Left-Hippocampus | L-hipp | -0.070 | 0.098 | -0.711 | -0.069 | 0.494 | - |  |
| CC | Left-Amygdala | L-amyg | 0.118 | 0.099 | 1.202 | 0.116 | 0.247 | - |  |
| CC | Left-Accumbens-area | L-accu | -0.055 | 0.097 | -0.561 | -0.054 | 0.570 | - |  |
| CC | Left-VentralDC | L-venDC | -0.010 | 0.099 | -0.106 | -0.010 | 0.921 | - |  |
| CC | Right-Thalamus-Proper | R-thal | 0.066 | 0.095 | 0.698 | 0.067 | 0.468 | - |  |
| CC | Right-Caudate | R-caud | -0.062 | 0.098 | -0.634 | -0.061 | 0.528 | - |  |
| CC | Right-Putamen | R-puta | -0.032 | 0.095 | -0.337 | -0.033 | 0.739 | - |  |
| CC | Right-Pallidum | R-pall | 0.064 | 0.098 | 0.659 | 0.064 | 0.496 | - |  |
| CC | Right-Hippocampus | R-hipp | 0.105 | 0.097 | 1.073 | 0.104 | 0.296 | - |  |
| CC | Right-Amygdala | R-amyg | 0.189 | 0.097 | 1.949 | 0.188 | 0.056 | - |  |
| CC | Right-Accumbens-area | R-accu | -0.007 | 0.096 | -0.070 | -0.007 | 0.949 | - |  |
| CC | Right-VentralDC | R-venDC | -0.051 | 0.093 | -0.547 | -0.053 | 0.555 | - |  |
| CC | ctx-lh-bankssts | L-banks | 0.031 | 0.098 | 0.314 | 0.030 | 0.759 | - |  |
| CC | ctx-lh-caudalanteriorcingulate | L-cauACG | -0.001 | 0.097 | -0.010 | -0.001 | 0.992 | - |  |
| CC | ctx-lh-caudalmiddlefrontal | L-cauMFR | -0.084 | 0.095 | -0.891 | -0.086 | 0.392 | - |  |
| CC | ctx-lh-cuneus | L-cune | -0.072 | 0.097 | -0.740 | -0.071 | 0.459 | - |  |
| CC | ctx-lh-entorhinal | L-entorh | -0.041 | 0.097 | -0.419 | -0.040 | 0.653 | - |  |
| CC | ctx-lh-fusiform | L-fusif | -0.076 | 0.096 | -0.797 | -0.077 | 0.425 | - |  |
| CC | ctx-lh-inferiorparietal | L-infPAR | 0.085 | 0.095 | 0.894 | 0.086 | 0.387 | - |  |
| CC | ctx-lh-inferiortemporal | L-infTEM | 0.031 | 0.099 | 0.314 | 0.030 | 0.769 | - |  |
| CC | ctx-lh-isthmuscingulate | L-istCIN | 0.034 | 0.095 | 0.357 | 0.034 | 0.725 | - |  |
| CC | ctx-lh-lateraloccipital | L-latOCC | -0.053 | 0.097 | -0.550 | -0.053 | 0.569 | - |  |
| CC | ctx-lh-lateralorbitofrontal | L-latORB | -0.122 | 0.093 | -1.308 | -0.126 | 0.190 | - |  |
| CC | ctx-lh-lingual | L-lingual | 0.173 | 0.098 | 1.763 | 0.170 | 0.065 | - |  |
| CC | ctx-lh-medialorbitofrontal | L-medORB | 0.059 | 0.095 | 0.616 | 0.060 | 0.540 | - |  |
| CC | ctx-lh-middletemporal | L-midTEM | 0.027 | 0.097 | 0.283 | 0.027 | 0.784 | - |  |
| CC | ctx-lh-parahippocampal | L-parHIP | -0.024 | 0.102 | -0.231 | -0.023 | 0.823 | - |  |
| CC | ctx-lh-paracentral | L-parCEN | -0.084 | 0.095 | -0.880 | -0.085 | 0.373 | - |  |
| CC | ctx-lh-parsopercularis | L-parOPE | -0.096 | 0.093 | -1.030 | -0.099 | 0.303 | - |  |
| CC | ctx-lh-parsorbitalis | L-parORB | -0.058 | 0.098 | -0.597 | -0.058 | 0.529 | - |  |
| CC | ctx-lh-parstriangularis | L-parTRI | -0.066 | 0.097 | -0.674 | -0.065 | 0.451 | - |  |
| CC | ctx-lh-pericalcarine | L-perCAR | -0.056 | 0.098 | -0.569 | -0.055 | 0.554 | - |  |
| CC | ctx-lh-postcentral | L-posCEN | -0.037 | 0.096 | -0.381 | -0.037 | 0.683 | - |  |
| CC | ctx-lh-posteriorcingulate | L-posCIN | -0.054 | 0.097 | -0.558 | -0.054 | 0.565 | - |  |
| CC | ctx-lh-precentral | L-preCEN | -0.086 | 0.095 | -0.900 | -0.087 | 0.371 | - |  |
| CC | ctx-lh-precuneus | L-preCUN | -0.057 | 0.098 | -0.584 | -0.056 | 0.551 | - |  |
| CC | ctx-lh-rostralanteriorcingulate | L-rosACG | -0.134 | 0.094 | -1.425 | -0.138 | 0.158 | - |  |
| CC | ctx-lh-rostralmiddlefrontal | L-rosMFR | -0.021 | 0.099 | -0.215 | -0.021 | 0.836 | - |  |
| CC | ctx-lh-superiorfrontal | L-supFRO | -0.035 | 0.097 | -0.360 | -0.035 | 0.724 | - |  |
| CC | ctx-lh-superiorparietal | L-supPAR | -0.053 | 0.095 | -0.561 | -0.054 | 0.593 | - |  |
| CC | ctx-lh-superiortemporal | L-supTEM | 0.023 | 0.097 | 0.234 | 0.023 | 0.820 | - |  |
| CC | ctx-lh-supramarginal | L-supMAR | -0.101 | 0.098 | -1.038 | -0.100 | 0.290 | - |  |
| CC | ctx-lh-frontalpole | L-froPOL | 0.037 | 0.092 | 0.403 | 0.039 | 0.707 | - |  |
| CC | ctx-lh-temporalpole | L-temPOL | 0.045 | 0.097 | 0.469 | 0.045 | 0.623 | - |  |
| CC | ctx-lh-transversetemporal | L-traTEM | -0.096 | 0.097 | -0.983 | -0.095 | 0.306 | - |  |
| CC | ctx-lh-insula | L-insula | 0.143 | 0.098 | 1.455 | 0.140 | 0.161 | - |  |
| CC | ctx-rh-bankssts | R-banks | 0.079 | 0.098 | 0.806 | 0.078 | 0.401 | - |  |
| CC | ctx-rh-caudalanteriorcingulate | R-cauACG | -0.017 | 0.097 | -0.179 | -0.017 | 0.853 | - |  |
| CC | ctx-rh-caudalmiddlefrontal | R-cauMFR | -0.010 | 0.097 | -0.106 | -0.010 | 0.914 | - |  |
| CC | ctx-rh-cuneus | R-cune | -0.175 | 0.097 | -1.803 | -0.174 | 0.055 | - |  |
| CC | ctx-rh-entorhinal | R-entorh | 0.036 | 0.099 | 0.363 | 0.036 | 0.721 | - |  |
| CC | ctx-rh-fusiform | R-fusif | 0.003 | 0.097 | 0.029 | 0.003 | 0.974 | - |  |
| CC | ctx-rh-inferiorparietal | R-infPAR | 0.208 | 0.097 | 2.137 | 0.206 | 0.021 | - |  |
| CC | ctx-rh-inferiortemporal | R-infTEM | 0.072 | 0.099 | 0.733 | 0.071 | 0.434 | - |  |
| CC | ctx-rh-isthmuscingulate | R-istCIN | 0.119 | 0.097 | 1.226 | 0.118 | 0.201 | - |  |
| CC | ctx-rh-lateraloccipital | R-latOCC | 0.041 | 0.098 | 0.414 | 0.040 | 0.666 | - |  |
| CC | ctx-rh-lateralorbitofrontal | R-latORB | -0.091 | 0.091 | -0.992 | -0.096 | 0.306 | - |  |
| CC | ctx-rh-lingual | R-lingual | 0.013 | 0.096 | 0.131 | 0.013 | 0.893 | - |  |
| CC | ctx-rh-medialorbitofrontal | R-medORB | -0.075 | 0.093 | -0.802 | -0.077 | 0.442 | - |  |
| CC | ctx-rh-middletemporal | R-midTEM | 0.092 | 0.098 | 0.936 | 0.090 | 0.370 | - |  |
| CC | ctx-rh-parahippocampal | R-parHIP | 0.004 | 0.099 | 0.040 | 0.004 | 0.976 | - |  |
| CC | ctx-rh-paracentral | R-parCEN | -0.092 | 0.097 | -0.949 | -0.092 | 0.330 | - |  |
| CC | ctx-rh-parsopercularis | R-parOPE | 0.102 | 0.098 | 1.043 | 0.101 | 0.287 | - |  |
| CC | ctx-rh-parsorbitalis | R-parORB | -0.062 | 0.097 | -0.639 | -0.062 | 0.523 | - |  |
| CC | ctx-rh-parstriangularis | R-parTRI | 0.073 | 0.098 | 0.744 | 0.072 | 0.476 | - |  |
| CC | ctx-rh-pericalcarine | R-perCAR | 0.021 | 0.096 | 0.218 | 0.021 | 0.822 | - |  |
| CC | ctx-rh-postcentral | R-posCEN | -0.046 | 0.097 | -0.476 | -0.046 | 0.619 | - |  |
| CC | ctx-rh-posteriorcingulate | R-posCIN | 0.004 | 0.097 | 0.044 | 0.004 | 0.969 | - |  |
| CC | ctx-rh-precentral | R-preCEN | -0.058 | 0.097 | -0.597 | -0.058 | 0.550 | - |  |
| CC | ctx-rh-precuneus | R-preCUN | 0.087 | 0.098 | 0.888 | 0.086 | 0.363 | - |  |
| CC | ctx-rh-rostralanteriorcingulate | R-rosACG | -0.093 | 0.095 | -0.978 | -0.094 | 0.331 | - |  |
| CC | ctx-rh-rostralmiddlefrontal | R-rosMFR | 0.000 | 0.098 | 0.004 | 0.000 | 0.995 | - |  |
| CC | ctx-rh-superiorfrontal | R-supFRO | -0.066 | 0.097 | -0.678 | -0.065 | 0.484 | - |  |
| CC | ctx-rh-superiorparietal | R-supPAR | -0.004 | 0.097 | -0.044 | -0.004 | 0.961 | - |  |
| CC | ctx-rh-superiortemporal | R-supTEM | 0.051 | 0.098 | 0.525 | 0.051 | 0.597 | - |  |
| CC | ctx-rh-supramarginal | R-supMAR | 0.027 | 0.098 | 0.278 | 0.027 | 0.804 | - |  |
| CC | ctx-rh-frontalpole | R-froPOL | -0.002 | 0.093 | -0.020 | -0.002 | 0.983 | - |  |
| CC | ctx-rh-temporalpole | R-temPOL | 0.099 | 0.092 | 1.076 | 0.104 | 0.318 | - |  |
| CC | ctx-rh-transversetemporal | R-traTEM | -0.089 | 0.098 | -0.906 | -0.090 | 0.353 | - |  |
| CC | ctx-rh-insula | R-insula | 0.072 | 0.096 | 0.753 | 0.073 | 0.461 | - |  |

Table S5. Cohen's d for all network measures in UKB after controlling for age, sex, body mass index, household income, and education level in the supplementary analysis comparing MDD cases and controls. To aid comparison, rows highlighted in yellow represent measures that were significantly different between cases and controls in the discovery cohort (UKB) in the main analysis.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **measure** | **region** | **abb** | **beta** | **sd** | **tval** | **cohen\_d** | **pval** | **pFDR** | **sig** |
| GEFF | Global |  | -0.079 | 0.034 | -2.298 | -0.077 | 0.022 | 0.043 | \* |
| TIER\_NEFF | T1 |  | -0.082 | 0.034 | -2.399 | -0.080 | 0.016 | 0.035 | \* |
| TIER\_NEFF | T2 |  | -0.073 | 0.034 | -2.116 | -0.071 | 0.034 | 0.035 | \* |
| TIER\_NEFF | T3 |  | -0.072 | 0.034 | -2.109 | -0.070 | 0.035 | 0.035 | \* |
| TIER\_NEFF | T4 |  | -0.081 | 0.034 | -2.360 | -0.079 | 0.018 | 0.035 | \* |
| NEFF | Left-Thalamus-Proper | L-thal | -0.071 | 0.035 | -2.042 | -0.068 | 0.041 | 0.097 |  |
| NEFF | Left-Caudate | L-caud | -0.081 | 0.034 | -2.377 | -0.079 | 0.018 | 0.129 |  |
| NEFF | Left-Putamen | L-puta | -0.105 | 0.034 | -3.066 | -0.102 | 0.002 | 0.014 | \* |
| NEFF | Left-Pallidum | L-pall | -0.077 | 0.034 | -2.281 | -0.076 | 0.023 | 0.076 |  |
| NEFF | Brain-Stem | bSTEM | -0.030 | 0.034 | -0.898 | -0.030 | 0.369 | 0.369 |  |
| NEFF | Left-Hippocampus | L-hipp | -0.068 | 0.034 | -2.025 | -0.068 | 0.043 | 0.138 |  |
| NEFF | Left-Amygdala | L-amyg | -0.024 | 0.034 | -0.718 | -0.024 | 0.473 | 0.518 |  |
| NEFF | Left-Accumbens-area | L-accu | -0.041 | 0.034 | -1.195 | -0.040 | 0.232 | 0.333 |  |
| NEFF | Left-VentralDC | L-venDC | -0.075 | 0.033 | -2.260 | -0.075 | 0.024 | 0.076 |  |
| NEFF | Right-Thalamus-Proper | R-thal | -0.092 | 0.034 | -2.698 | -0.090 | 0.007 | 0.033 | \* |
| NEFF | Right-Caudate | R-caud | -0.072 | 0.034 | -2.142 | -0.071 | 0.032 | 0.129 |  |
| NEFF | Right-Putamen | R-puta | -0.113 | 0.034 | -3.285 | -0.110 | 0.001 | 0.010 | \* |
| NEFF | Right-Pallidum | R-pall | -0.125 | 0.034 | -3.698 | -0.123 | 0.000 | 0.004 | \* |
| NEFF | Right-Hippocampus | R-hipp | -0.060 | 0.034 | -1.762 | -0.059 | 0.078 | 0.162 |  |
| NEFF | Right-Amygdala | R-amyg | -0.050 | 0.034 | -1.446 | -0.048 | 0.148 | 0.263 |  |
| NEFF | Right-Accumbens-area | R-accu | -0.031 | 0.034 | -0.893 | -0.030 | 0.372 | 0.475 |  |
| NEFF | Right-VentralDC | R-venDC | -0.060 | 0.034 | -1.759 | -0.059 | 0.079 | 0.107 |  |
| NEFF | ctx-lh-bankssts | L-banks | -0.073 | 0.034 | -2.140 | -0.071 | 0.032 | 0.129 |  |
| NEFF | ctx-lh-caudalanteriorcingulate | L-cauACG | -0.032 | 0.035 | -0.915 | -0.031 | 0.360 | 0.384 |  |
| NEFF | ctx-lh-caudalmiddlefrontal | L-cauMFR | -0.062 | 0.034 | -1.804 | -0.060 | 0.071 | 0.205 |  |
| NEFF | ctx-lh-cuneus | L-cune | -0.049 | 0.034 | -1.424 | -0.048 | 0.154 | 0.228 |  |
| NEFF | ctx-lh-entorhinal | L-entorh | -0.015 | 0.034 | -0.436 | -0.015 | 0.663 | 0.693 |  |
| NEFF | ctx-lh-fusiform | L-fusif | -0.061 | 0.034 | -1.787 | -0.060 | 0.074 | 0.162 |  |
| NEFF | ctx-lh-inferiorparietal | L-infPAR | -0.039 | 0.033 | -1.173 | -0.039 | 0.241 | 0.312 |  |
| NEFF | ctx-lh-inferiortemporal | L-infTEM | -0.078 | 0.034 | -2.296 | -0.077 | 0.022 | 0.129 |  |
| NEFF | ctx-lh-isthmuscingulate | L-istCIN | -0.065 | 0.034 | -1.895 | -0.063 | 0.058 | 0.100 |  |
| NEFF | ctx-lh-lateraloccipital | L-latOCC | -0.047 | 0.034 | -1.393 | -0.046 | 0.164 | 0.194 |  |
| NEFF | ctx-lh-lateralorbitofrontal | L-latORB | -0.054 | 0.034 | -1.577 | -0.053 | 0.115 | 0.228 |  |
| NEFF | ctx-lh-lingual | L-lingual | 0.001 | 0.034 | 0.033 | 0.001 | 0.974 | 0.974 |  |
| NEFF | ctx-lh-medialorbitofrontal | L-medORB | -0.081 | 0.034 | -2.354 | -0.079 | 0.019 | 0.129 |  |
| NEFF | ctx-lh-middletemporal | L-midTEM | -0.030 | 0.034 | -0.884 | -0.030 | 0.377 | 0.442 |  |
| NEFF | ctx-lh-parahippocampal | L-parHIP | -0.044 | 0.034 | -1.307 | -0.044 | 0.191 | 0.314 |  |
| NEFF | ctx-lh-paracentral | L-parCEN | -0.063 | 0.034 | -1.837 | -0.061 | 0.066 | 0.162 |  |
| NEFF | ctx-lh-parsopercularis | L-parOPE | -0.075 | 0.034 | -2.193 | -0.073 | 0.028 | 0.129 |  |
| NEFF | ctx-lh-parsorbitalis | L-parORB | -0.079 | 0.034 | -2.296 | -0.077 | 0.022 | 0.185 |  |
| NEFF | ctx-lh-parstriangularis | L-parTRI | -0.087 | 0.034 | -2.544 | -0.085 | 0.011 | 0.185 |  |
| NEFF | ctx-lh-pericalcarine | L-perCAR | -0.039 | 0.034 | -1.153 | -0.038 | 0.249 | 0.312 |  |
| NEFF | ctx-lh-postcentral | L-posCEN | -0.027 | 0.034 | -0.779 | -0.026 | 0.436 | 0.490 |  |
| NEFF | ctx-lh-posteriorcingulate | L-posCIN | -0.066 | 0.034 | -1.933 | -0.065 | 0.053 | 0.100 |  |
| NEFF | ctx-lh-precentral | L-preCEN | -0.017 | 0.034 | -0.499 | -0.017 | 0.618 | 0.642 |  |
| NEFF | ctx-lh-precuneus | L-preCUN | -0.073 | 0.034 | -2.143 | -0.072 | 0.032 | 0.087 |  |
| NEFF | ctx-lh-rostralanteriorcingulate | L-rosACG | -0.059 | 0.034 | -1.732 | -0.058 | 0.083 | 0.213 |  |
| NEFF | ctx-lh-rostralmiddlefrontal | L-rosMFR | -0.072 | 0.034 | -2.109 | -0.070 | 0.035 | 0.185 |  |
| NEFF | ctx-lh-superiorfrontal | L-supFRO | -0.039 | 0.035 | -1.140 | -0.038 | 0.254 | 0.312 |  |
| NEFF | ctx-lh-superiorparietal | L-supPAR | -0.051 | 0.034 | -1.492 | -0.050 | 0.136 | 0.172 |  |
| NEFF | ctx-lh-superiortemporal | L-supTEM | -0.062 | 0.034 | -1.804 | -0.060 | 0.071 | 0.107 |  |
| NEFF | ctx-lh-supramarginal | L-supMAR | -0.043 | 0.034 | -1.268 | -0.042 | 0.205 | 0.291 |  |
| NEFF | ctx-lh-frontalpole | L-froPOL | -0.066 | 0.034 | -1.910 | -0.064 | 0.056 | 0.185 |  |
| NEFF | ctx-lh-temporalpole | L-temPOL | -0.002 | 0.034 | -0.052 | -0.002 | 0.959 | 0.959 |  |
| NEFF | ctx-lh-transversetemporal | L-traTEM | -0.017 | 0.034 | -0.512 | -0.017 | 0.609 | 0.609 |  |
| NEFF | ctx-lh-insula | L-insula | -0.099 | 0.034 | -2.898 | -0.097 | 0.004 | 0.060 |  |
| NEFF | ctx-rh-bankssts | R-banks | -0.072 | 0.034 | -2.124 | -0.071 | 0.034 | 0.129 |  |
| NEFF | ctx-rh-caudalanteriorcingulate | R-cauACG | -0.049 | 0.034 | -1.424 | -0.048 | 0.155 | 0.228 |  |
| NEFF | ctx-rh-caudalmiddlefrontal | R-cauMFR | -0.050 | 0.034 | -1.444 | -0.048 | 0.149 | 0.263 |  |
| NEFF | ctx-rh-cuneus | R-cune | -0.053 | 0.034 | -1.546 | -0.052 | 0.122 | 0.228 |  |
| NEFF | ctx-rh-entorhinal | R-entorh | -0.041 | 0.034 | -1.206 | -0.040 | 0.228 | 0.333 |  |
| NEFF | ctx-rh-fusiform | R-fusif | -0.048 | 0.034 | -1.417 | -0.047 | 0.156 | 0.228 |  |
| NEFF | ctx-rh-inferiorparietal | R-infPAR | -0.023 | 0.034 | -0.668 | -0.022 | 0.504 | 0.545 |  |
| NEFF | ctx-rh-inferiortemporal | R-infTEM | -0.071 | 0.034 | -2.097 | -0.070 | 0.036 | 0.129 |  |
| NEFF | ctx-rh-isthmuscingulate | R-istCIN | -0.061 | 0.034 | -1.770 | -0.059 | 0.077 | 0.107 |  |
| NEFF | ctx-rh-lateraloccipital | R-latOCC | -0.031 | 0.034 | -0.910 | -0.030 | 0.363 | 0.369 |  |
| NEFF | ctx-rh-lateralorbitofrontal | R-latORB | -0.043 | 0.034 | -1.267 | -0.042 | 0.205 | 0.263 |  |
| NEFF | ctx-rh-lingual | R-lingual | -0.066 | 0.034 | -1.917 | -0.064 | 0.055 | 0.162 |  |
| NEFF | ctx-rh-medialorbitofrontal | R-medORB | -0.043 | 0.034 | -1.245 | -0.042 | 0.213 | 0.263 |  |
| NEFF | ctx-rh-middletemporal | R-midTEM | -0.052 | 0.034 | -1.505 | -0.050 | 0.132 | 0.210 |  |
| NEFF | ctx-rh-parahippocampal | R-parHIP | -0.026 | 0.034 | -0.770 | -0.026 | 0.442 | 0.518 |  |
| NEFF | ctx-rh-paracentral | R-parCEN | -0.054 | 0.034 | -1.567 | -0.052 | 0.117 | 0.198 |  |
| NEFF | ctx-rh-parsopercularis | R-parOPE | -0.025 | 0.034 | -0.718 | -0.024 | 0.473 | 0.518 |  |
| NEFF | ctx-rh-parsorbitalis | R-parORB | -0.068 | 0.034 | -1.983 | -0.066 | 0.047 | 0.185 |  |
| NEFF | ctx-rh-parstriangularis | R-parTRI | -0.033 | 0.034 | -0.967 | -0.032 | 0.333 | 0.451 |  |
| NEFF | ctx-rh-pericalcarine | R-perCAR | -0.058 | 0.034 | -1.722 | -0.057 | 0.085 | 0.164 |  |
| NEFF | ctx-rh-postcentral | R-posCEN | -0.082 | 0.034 | -2.400 | -0.080 | 0.016 | 0.129 |  |
| NEFF | ctx-rh-posteriorcingulate | R-posCIN | -0.081 | 0.034 | -2.354 | -0.079 | 0.019 | 0.129 |  |
| NEFF | ctx-rh-precentral | R-preCEN | -0.034 | 0.034 | -0.996 | -0.033 | 0.319 | 0.365 |  |
| NEFF | ctx-rh-precuneus | R-preCUN | -0.069 | 0.034 | -1.995 | -0.067 | 0.046 | 0.097 |  |
| NEFF | ctx-rh-rostralanteriorcingulate | R-rosACG | -0.051 | 0.034 | -1.495 | -0.050 | 0.135 | 0.263 |  |
| NEFF | ctx-rh-rostralmiddlefrontal | R-rosMFR | -0.063 | 0.035 | -1.810 | -0.060 | 0.070 | 0.187 |  |
| NEFF | ctx-rh-superiorfrontal | R-supFRO | -0.056 | 0.034 | -1.628 | -0.054 | 0.104 | 0.186 |  |
| NEFF | ctx-rh-superiorparietal | R-supPAR | -0.047 | 0.035 | -1.351 | -0.045 | 0.177 | 0.198 |  |
| NEFF | ctx-rh-superiortemporal | R-supTEM | -0.044 | 0.035 | -1.286 | -0.043 | 0.199 | 0.291 |  |
| NEFF | ctx-rh-supramarginal | R-supMAR | -0.071 | 0.034 | -2.075 | -0.069 | 0.038 | 0.129 |  |
| NEFF | ctx-rh-frontalpole | R-froPOL | -0.052 | 0.035 | -1.518 | -0.051 | 0.129 | 0.263 |  |
| NEFF | ctx-rh-temporalpole | R-temPOL | -0.073 | 0.034 | -2.175 | -0.073 | 0.030 | 0.185 |  |
| NEFF | ctx-rh-transversetemporal | R-traTEM | -0.067 | 0.034 | -1.952 | -0.065 | 0.051 | 0.185 |  |
| NEFF | ctx-rh-insula | R-insula | -0.064 | 0.034 | -1.860 | -0.062 | 0.063 | 0.162 |  |
| GCC | Global |  | -0.066 | 0.034 | -1.925 | -0.064 | 0.054 | 0.054 |  |
| TIER\_CC | T1 |  | -0.053 | 0.034 | -1.564 | -0.052 | 0.118 | - |  |
| TIER\_CC | T2 |  | -0.057 | 0.034 | -1.674 | -0.056 | 0.094 | - |  |
| TIER\_CC | T3 |  | -0.057 | 0.034 | -1.667 | -0.056 | 0.096 | - |  |
| TIER\_CC | T4 |  | -0.068 | 0.034 | -1.988 | -0.066 | 0.047 | - |  |
| CC | Left-Thalamus-Proper | L-thal | -0.039 | 0.034 | -1.153 | -0.038 | 0.249 | - |  |
| CC | Left-Caudate | L-caud | -0.023 | 0.034 | -0.687 | -0.023 | 0.492 | - |  |
| CC | Left-Putamen | L-puta | 0.000 | 0.034 | 0.011 | 0.000 | 0.991 | - |  |
| CC | Left-Pallidum | L-pall | 0.032 | 0.034 | 0.917 | 0.031 | 0.359 | - |  |
| CC | Brain-Stem | bSTEM | -0.059 | 0.034 | -1.711 | -0.057 | 0.087 | - |  |
| CC | Left-Hippocampus | L-hipp | -0.027 | 0.034 | -0.776 | -0.026 | 0.438 | - |  |
| CC | Left-Amygdala | L-amyg | 0.000 | 0.034 | 0.004 | 0.000 | 0.996 | - |  |
| CC | Left-Accumbens-area | L-accu | -0.054 | 0.034 | -1.586 | -0.053 | 0.113 | - |  |
| CC | Left-VentralDC | L-venDC | -0.021 | 0.035 | -0.603 | -0.020 | 0.546 | - |  |
| CC | Right-Thalamus-Proper | R-thal | -0.030 | 0.034 | -0.888 | -0.030 | 0.375 | - |  |
| CC | Right-Caudate | R-caud | -0.060 | 0.034 | -1.785 | -0.060 | 0.074 | - |  |
| CC | Right-Putamen | R-puta | -0.027 | 0.034 | -0.799 | -0.027 | 0.424 | - |  |
| CC | Right-Pallidum | R-pall | 0.037 | 0.034 | 1.095 | 0.037 | 0.274 | - |  |
| CC | Right-Hippocampus | R-hipp | -0.019 | 0.034 | -0.551 | -0.018 | 0.581 | - |  |
| CC | Right-Amygdala | R-amyg | -0.073 | 0.035 | -2.106 | -0.070 | 0.035 | - |  |
| CC | Right-Accumbens-area | R-accu | -0.025 | 0.034 | -0.732 | -0.024 | 0.464 | - |  |
| CC | Right-VentralDC | R-venDC | -0.042 | 0.034 | -1.236 | -0.041 | 0.217 | - |  |
| CC | ctx-lh-bankssts | L-banks | -0.003 | 0.034 | -0.084 | -0.003 | 0.933 | - |  |
| CC | ctx-lh-caudalanteriorcingulate | L-cauACG | 0.011 | 0.034 | 0.335 | 0.011 | 0.737 | - |  |
| CC | ctx-lh-caudalmiddlefrontal | L-cauMFR | -0.059 | 0.034 | -1.746 | -0.058 | 0.081 | - |  |
| CC | ctx-lh-cuneus | L-cune | -0.069 | 0.034 | -2.005 | -0.067 | 0.045 | - |  |
| CC | ctx-lh-entorhinal | L-entorh | 0.003 | 0.035 | 0.101 | 0.003 | 0.920 | - |  |
| CC | ctx-lh-fusiform | L-fusif | -0.031 | 0.034 | -0.915 | -0.031 | 0.360 | - |  |
| CC | ctx-lh-inferiorparietal | L-infPAR | -0.073 | 0.034 | -2.124 | -0.071 | 0.034 | - |  |
| CC | ctx-lh-inferiortemporal | L-infTEM | -0.045 | 0.034 | -1.308 | -0.044 | 0.191 | - |  |
| CC | ctx-lh-isthmuscingulate | L-istCIN | -0.072 | 0.034 | -2.128 | -0.071 | 0.033 | - |  |
| CC | ctx-lh-lateraloccipital | L-latOCC | -0.047 | 0.034 | -1.374 | -0.046 | 0.169 | - |  |
| CC | ctx-lh-lateralorbitofrontal | L-latORB | -0.076 | 0.034 | -2.223 | -0.074 | 0.026 | - |  |
| CC | ctx-lh-lingual | L-lingual | -0.037 | 0.034 | -1.090 | -0.036 | 0.276 | - |  |
| CC | ctx-lh-medialorbitofrontal | L-medORB | 0.022 | 0.034 | 0.623 | 0.021 | 0.533 | - |  |
| CC | ctx-lh-middletemporal | L-midTEM | -0.044 | 0.034 | -1.274 | -0.043 | 0.203 | - |  |
| CC | ctx-lh-parahippocampal | L-parHIP | -0.039 | 0.034 | -1.135 | -0.038 | 0.256 | - |  |
| CC | ctx-lh-paracentral | L-parCEN | -0.034 | 0.034 | -1.016 | -0.034 | 0.310 | - |  |
| CC | ctx-lh-parsopercularis | L-parOPE | -0.020 | 0.034 | -0.574 | -0.019 | 0.566 | - |  |
| CC | ctx-lh-parsorbitalis | L-parORB | 0.001 | 0.034 | 0.025 | 0.001 | 0.980 | - |  |
| CC | ctx-lh-parstriangularis | L-parTRI | -0.063 | 0.034 | -1.856 | -0.062 | 0.064 | - |  |
| CC | ctx-lh-pericalcarine | L-perCAR | -0.056 | 0.034 | -1.647 | -0.055 | 0.100 | - |  |
| CC | ctx-lh-postcentral | L-posCEN | -0.082 | 0.033 | -2.468 | -0.082 | 0.014 | - |  |
| CC | ctx-lh-posteriorcingulate | L-posCIN | -0.046 | 0.034 | -1.348 | -0.045 | 0.178 | - |  |
| CC | ctx-lh-precentral | L-preCEN | -0.050 | 0.034 | -1.452 | -0.048 | 0.147 | - |  |
| CC | ctx-lh-precuneus | L-preCUN | -0.029 | 0.034 | -0.856 | -0.029 | 0.392 | - |  |
| CC | ctx-lh-rostralanteriorcingulate | L-rosACG | -0.071 | 0.035 | -2.064 | -0.069 | 0.039 | - |  |
| CC | ctx-lh-rostralmiddlefrontal | L-rosMFR | -0.039 | 0.034 | -1.147 | -0.038 | 0.251 | - |  |
| CC | ctx-lh-superiorfrontal | L-supFRO | -0.038 | 0.034 | -1.119 | -0.037 | 0.263 | - |  |
| CC | ctx-lh-superiorparietal | L-supPAR | -0.074 | 0.034 | -2.170 | -0.072 | 0.030 | - |  |
| CC | ctx-lh-superiortemporal | L-supTEM | -0.022 | 0.034 | -0.634 | -0.021 | 0.526 | - |  |
| CC | ctx-lh-supramarginal | L-supMAR | -0.066 | 0.034 | -1.940 | -0.065 | 0.052 | - |  |
| CC | ctx-lh-frontalpole | L-froPOL | 0.031 | 0.034 | 0.911 | 0.030 | 0.362 | - |  |
| CC | ctx-lh-temporalpole | L-temPOL | -0.048 | 0.034 | -1.395 | -0.047 | 0.163 | - |  |
| CC | ctx-lh-transversetemporal | L-traTEM | -0.047 | 0.034 | -1.398 | -0.047 | 0.162 | - |  |
| CC | ctx-lh-insula | L-insula | -0.003 | 0.034 | -0.087 | -0.003 | 0.931 | - |  |
| CC | ctx-rh-bankssts | R-banks | -0.044 | 0.034 | -1.285 | -0.043 | 0.199 | - |  |
| CC | ctx-rh-caudalanteriorcingulate | R-cauACG | -0.031 | 0.034 | -0.929 | -0.031 | 0.353 | - |  |
| CC | ctx-rh-caudalmiddlefrontal | R-cauMFR | -0.032 | 0.034 | -0.937 | -0.031 | 0.349 | - |  |
| CC | ctx-rh-cuneus | R-cune | -0.066 | 0.034 | -1.926 | -0.064 | 0.054 | - |  |
| CC | ctx-rh-entorhinal | R-entorh | -0.044 | 0.034 | -1.272 | -0.043 | 0.203 | - |  |
| CC | ctx-rh-fusiform | R-fusif | -0.032 | 0.035 | -0.912 | -0.030 | 0.362 | - |  |
| CC | ctx-rh-inferiorparietal | R-infPAR | -0.027 | 0.034 | -0.783 | -0.026 | 0.434 | - |  |
| CC | ctx-rh-inferiortemporal | R-infTEM | -0.031 | 0.034 | -0.895 | -0.030 | 0.371 | - |  |
| CC | ctx-rh-isthmuscingulate | R-istCIN | -0.032 | 0.034 | -0.948 | -0.032 | 0.343 | - |  |
| CC | ctx-rh-lateraloccipital | R-latOCC | -0.063 | 0.034 | -1.818 | -0.061 | 0.069 | - |  |
| CC | ctx-rh-lateralorbitofrontal | R-latORB | -0.042 | 0.034 | -1.228 | -0.041 | 0.219 | - |  |
| CC | ctx-rh-lingual | R-lingual | 0.003 | 0.034 | 0.083 | 0.003 | 0.933 | - |  |
| CC | ctx-rh-medialorbitofrontal | R-medORB | 0.004 | 0.034 | 0.115 | 0.004 | 0.909 | - |  |
| CC | ctx-rh-middletemporal | R-midTEM | -0.037 | 0.034 | -1.096 | -0.037 | 0.273 | - |  |
| CC | ctx-rh-parahippocampal | R-parHIP | -0.008 | 0.034 | -0.238 | -0.008 | 0.812 | - |  |
| CC | ctx-rh-paracentral | R-parCEN | -0.035 | 0.034 | -1.021 | -0.034 | 0.307 | - |  |
| CC | ctx-rh-parsopercularis | R-parOPE | -0.012 | 0.034 | -0.344 | -0.011 | 0.731 | - |  |
| CC | ctx-rh-parsorbitalis | R-parORB | -0.065 | 0.034 | -1.885 | -0.063 | 0.060 | - |  |
| CC | ctx-rh-parstriangularis | R-parTRI | -0.061 | 0.034 | -1.805 | -0.060 | 0.071 | - |  |
| CC | ctx-rh-pericalcarine | R-perCAR | -0.025 | 0.034 | -0.730 | -0.024 | 0.465 | - |  |
| CC | ctx-rh-postcentral | R-posCEN | -0.037 | 0.034 | -1.080 | -0.036 | 0.280 | - |  |
| CC | ctx-rh-posteriorcingulate | R-posCIN | -0.033 | 0.034 | -0.960 | -0.032 | 0.337 | - |  |
| CC | ctx-rh-precentral | R-preCEN | -0.070 | 0.034 | -2.049 | -0.068 | 0.040 | - |  |
| CC | ctx-rh-precuneus | R-preCUN | -0.087 | 0.034 | -2.530 | -0.084 | 0.011 | - |  |
| CC | ctx-rh-rostralanteriorcingulate | R-rosACG | 0.007 | 0.034 | 0.189 | 0.006 | 0.850 | - |  |
| CC | ctx-rh-rostralmiddlefrontal | R-rosMFR | -0.024 | 0.034 | -0.708 | -0.024 | 0.479 | - |  |
| CC | ctx-rh-superiorfrontal | R-supFRO | -0.031 | 0.034 | -0.897 | -0.030 | 0.370 | - |  |
| CC | ctx-rh-superiorparietal | R-supPAR | -0.093 | 0.034 | -2.715 | -0.091 | 0.007 | - |  |
| CC | ctx-rh-superiortemporal | R-supTEM | -0.024 | 0.035 | -0.689 | -0.023 | 0.491 | - |  |
| CC | ctx-rh-supramarginal | R-supMAR | -0.044 | 0.034 | -1.304 | -0.044 | 0.192 | - |  |
| CC | ctx-rh-frontalpole | R-froPOL | -0.003 | 0.034 | -0.102 | -0.003 | 0.919 | - |  |
| CC | ctx-rh-temporalpole | R-temPOL | -0.054 | 0.034 | -1.594 | -0.053 | 0.111 | - |  |
| CC | ctx-rh-transversetemporal | R-traTEM | 0.008 | 0.035 | 0.237 | 0.008 | 0.812 | - |  |
| CC | ctx-rh-insula | R-insula | -0.023 | 0.034 | -0.678 | -0.023 | 0.498 | - |  |

Table S6. Cohen's d for all network measures in GS after controlling for age, sex, site, body mass index, household income, and education level in the supplementary analysis comparing MDD cases and controls. To aid comparison, rows highlighted in yellow represent measures that were significantly different between cases and controls in the discovery cohort (UKB) in the main analysis.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **measure** | **region** | **abb** | **beta** | **sd** | **tval** | **cohen\_d** | **pval** | **pFDR** | **sig** |
| GEFF | Global |  | -0.165 | 0.096 | -1.723 | -0.174 | 0.085 | 0.171 |  |
| TIER\_NEFF | T1 |  | -0.167 | 0.099 | -1.684 | -0.170 | 0.093 | - |  |
| TIER\_NEFF | T2 |  | -0.173 | 0.100 | -1.723 | -0.174 | 0.085 | - |  |
| TIER\_NEFF | T3 |  | -0.127 | 0.094 | -1.362 | -0.138 | 0.174 | - |  |
| TIER\_NEFF | T4 |  | -0.147 | 0.091 | -1.609 | -0.163 | 0.108 | - |  |
| NEFF | Left-Thalamus-Proper | L-thal | -0.113 | 0.098 | -1.151 | -0.116 | 0.250 | - |  |
| NEFF | Left-Caudate | L-caud | -0.039 | 0.104 | -0.372 | -0.038 | 0.710 | - |  |
| NEFF | Left-Putamen | L-puta | -0.106 | 0.103 | -1.028 | -0.104 | 0.304 | - |  |
| NEFF | Left-Pallidum | L-pall | -0.110 | 0.106 | -1.043 | -0.105 | 0.297 | - |  |
| NEFF | Brain-Stem | bSTEM | -0.170 | 0.103 | -1.643 | -0.166 | 0.101 | - |  |
| NEFF | Left-Hippocampus | L-hipp | -0.208 | 0.100 | -2.075 | -0.210 | 0.038 | - |  |
| NEFF | Left-Amygdala | L-amyg | -0.085 | 0.104 | -0.811 | -0.082 | 0.417 | - |  |
| NEFF | Left-Accumbens-area | L-accu | -0.018 | 0.105 | -0.175 | -0.018 | 0.861 | - |  |
| NEFF | Left-VentralDC | L-venDC | -0.127 | 0.102 | -1.244 | -0.126 | 0.214 | - |  |
| NEFF | Right-Thalamus-Proper | R-thal | -0.160 | 0.096 | -1.666 | -0.168 | 0.096 | - |  |
| NEFF | Right-Caudate | R-caud | -0.039 | 0.106 | -0.370 | -0.037 | 0.712 | - |  |
| NEFF | Right-Putamen | R-puta | -0.192 | 0.099 | -1.935 | -0.196 | 0.053 | - |  |
| NEFF | Right-Pallidum | R-pall | -0.166 | 0.103 | -1.607 | -0.162 | 0.108 | - |  |
| NEFF | Right-Hippocampus | R-hipp | -0.243 | 0.102 | -2.393 | -0.242 | 0.017 | - |  |
| NEFF | Right-Amygdala | R-amyg | -0.048 | 0.104 | -0.459 | -0.046 | 0.647 | - |  |
| NEFF | Right-Accumbens-area | R-accu | -0.140 | 0.102 | -1.376 | -0.139 | 0.169 | - |  |
| NEFF | Right-VentralDC | R-venDC | -0.119 | 0.103 | -1.165 | -0.118 | 0.245 | - |  |
| NEFF | ctx-lh-bankssts | L-banks | -0.081 | 0.103 | -0.789 | -0.080 | 0.430 | - |  |
| NEFF | ctx-lh-caudalanteriorcingulate | L-cauACG | -0.053 | 0.103 | -0.512 | -0.052 | 0.609 | - |  |
| NEFF | ctx-lh-caudalmiddlefrontal | L-cauMFR | -0.155 | 0.100 | -1.545 | -0.156 | 0.123 | - |  |
| NEFF | ctx-lh-cuneus | L-cune | -0.271 | 0.100 | -2.718 | -0.275 | 0.007 | - |  |
| NEFF | ctx-lh-entorhinal | L-entorh | -0.042 | 0.104 | -0.404 | -0.041 | 0.686 | - |  |
| NEFF | ctx-lh-fusiform | L-fusif | 0.010 | 0.098 | 0.098 | 0.010 | 0.922 | - |  |
| NEFF | ctx-lh-inferiorparietal | L-infPAR | -0.126 | 0.098 | -1.283 | -0.130 | 0.200 | - |  |
| NEFF | ctx-lh-inferiortemporal | L-infTEM | -0.118 | 0.101 | -1.162 | -0.117 | 0.245 | - |  |
| NEFF | ctx-lh-isthmuscingulate | L-istCIN | -0.138 | 0.100 | -1.391 | -0.140 | 0.165 | - |  |
| NEFF | ctx-lh-lateraloccipital | L-latOCC | -0.087 | 0.101 | -0.863 | -0.087 | 0.389 | - |  |
| NEFF | ctx-lh-lateralorbitofrontal | L-latORB | -0.145 | 0.084 | -1.734 | -0.175 | 0.083 | - |  |
| NEFF | ctx-lh-lingual | L-lingual | -0.168 | 0.102 | -1.643 | -0.166 | 0.101 | - |  |
| NEFF | ctx-lh-medialorbitofrontal | L-medORB | -0.115 | 0.102 | -1.129 | -0.114 | 0.259 | - |  |
| NEFF | ctx-lh-middletemporal | L-midTEM | -0.136 | 0.102 | -1.332 | -0.135 | 0.183 | - |  |
| NEFF | ctx-lh-parahippocampal | L-parHIP | -0.065 | 0.105 | -0.619 | -0.063 | 0.536 | - |  |
| NEFF | ctx-lh-paracentral | L-parCEN | -0.151 | 0.101 | -1.495 | -0.151 | 0.135 | - |  |
| NEFF | ctx-lh-parsopercularis | L-parOPE | -0.038 | 0.102 | -0.375 | -0.038 | 0.708 | - |  |
| NEFF | ctx-lh-parsorbitalis | L-parORB | -0.119 | 0.100 | -1.184 | -0.120 | 0.237 | - |  |
| NEFF | ctx-lh-parstriangularis | L-parTRI | -0.132 | 0.102 | -1.291 | -0.130 | 0.197 | - |  |
| NEFF | ctx-lh-pericalcarine | L-perCAR | -0.126 | 0.101 | -1.242 | -0.125 | 0.215 | - |  |
| NEFF | ctx-lh-postcentral | L-posCEN | -0.165 | 0.103 | -1.597 | -0.161 | 0.111 | - |  |
| NEFF | ctx-lh-posteriorcingulate | L-posCIN | -0.144 | 0.104 | -1.387 | -0.140 | 0.166 | - |  |
| NEFF | ctx-lh-precentral | L-preCEN | -0.005 | 0.104 | -0.051 | -0.005 | 0.959 | - |  |
| NEFF | ctx-lh-precuneus | L-preCUN | -0.079 | 0.095 | -0.831 | -0.084 | 0.406 | - |  |
| NEFF | ctx-lh-rostralanteriorcingulate | L-rosACG | -0.079 | 0.099 | -0.804 | -0.081 | 0.422 | - |  |
| NEFF | ctx-lh-rostralmiddlefrontal | L-rosMFR | -0.058 | 0.092 | -0.625 | -0.063 | 0.532 | - |  |
| NEFF | ctx-lh-superiorfrontal | L-supFRO | -0.082 | 0.094 | -0.877 | -0.089 | 0.381 | - |  |
| NEFF | ctx-lh-superiorparietal | L-supPAR | -0.204 | 0.095 | -2.159 | -0.218 | 0.031 | - |  |
| NEFF | ctx-lh-superiortemporal | L-supTEM | -0.034 | 0.101 | -0.336 | -0.034 | 0.737 | - |  |
| NEFF | ctx-lh-supramarginal | L-supMAR | -0.042 | 0.104 | -0.406 | -0.041 | 0.685 | - |  |
| NEFF | ctx-lh-frontalpole | L-froPOL | -0.105 | 0.087 | -1.205 | -0.122 | 0.229 | - |  |
| NEFF | ctx-lh-temporalpole | L-temPOL | 0.034 | 0.094 | 0.358 | 0.036 | 0.720 | - |  |
| NEFF | ctx-lh-transversetemporal | L-traTEM | 0.104 | 0.101 | 1.029 | 0.104 | 0.304 | - |  |
| NEFF | ctx-lh-insula | L-insula | -0.117 | 0.104 | -1.125 | -0.114 | 0.261 | - |  |
| NEFF | ctx-rh-bankssts | R-banks | -0.162 | 0.104 | -1.561 | -0.158 | 0.119 | - |  |
| NEFF | ctx-rh-caudalanteriorcingulate | R-cauACG | -0.072 | 0.099 | -0.728 | -0.074 | 0.467 | - |  |
| NEFF | ctx-rh-caudalmiddlefrontal | R-cauMFR | -0.041 | 0.096 | -0.431 | -0.044 | 0.666 | - |  |
| NEFF | ctx-rh-cuneus | R-cune | -0.136 | 0.098 | -1.389 | -0.140 | 0.165 | - |  |
| NEFF | ctx-rh-entorhinal | R-entorh | -0.115 | 0.105 | -1.102 | -0.111 | 0.271 | - |  |
| NEFF | ctx-rh-fusiform | R-fusif | 0.041 | 0.099 | 0.415 | 0.042 | 0.678 | - |  |
| NEFF | ctx-rh-inferiorparietal | R-infPAR | -0.262 | 0.101 | -2.590 | -0.262 | 0.010 | - |  |
| NEFF | ctx-rh-inferiortemporal | R-infTEM | -0.094 | 0.101 | -0.927 | -0.094 | 0.354 | - |  |
| NEFF | ctx-rh-isthmuscingulate | R-istCIN | -0.052 | 0.103 | -0.508 | -0.051 | 0.611 | - |  |
| NEFF | ctx-rh-lateraloccipital | R-latOCC | -0.181 | 0.103 | -1.767 | -0.179 | 0.078 | - |  |
| NEFF | ctx-rh-lateralorbitofrontal | R-latORB | 0.015 | 0.078 | 0.198 | 0.020 | 0.843 | - |  |
| NEFF | ctx-rh-lingual | R-lingual | -0.111 | 0.099 | -1.129 | -0.114 | 0.259 | - |  |
| NEFF | ctx-rh-medialorbitofrontal | R-medORB | -0.108 | 0.096 | -1.126 | -0.114 | 0.261 | - |  |
| NEFF | ctx-rh-middletemporal | R-midTEM | -0.154 | 0.103 | -1.495 | -0.151 | 0.135 | - |  |
| NEFF | ctx-rh-parahippocampal | R-parHIP | -0.126 | 0.101 | -1.253 | -0.127 | 0.211 | - |  |
| NEFF | ctx-rh-paracentral | R-parCEN | -0.122 | 0.104 | -1.173 | -0.118 | 0.241 | - |  |
| NEFF | ctx-rh-parsopercularis | R-parOPE | 0.124 | 0.098 | 1.268 | 0.128 | 0.205 | - |  |
| NEFF | ctx-rh-parsorbitalis | R-parORB | -0.126 | 0.094 | -1.341 | -0.135 | 0.180 | - |  |
| NEFF | ctx-rh-parstriangularis | R-parTRI | 0.042 | 0.098 | 0.427 | 0.043 | 0.669 | - |  |
| NEFF | ctx-rh-pericalcarine | R-perCAR | -0.169 | 0.097 | -1.745 | -0.176 | 0.081 | - |  |
| NEFF | ctx-rh-postcentral | R-posCEN | -0.139 | 0.103 | -1.353 | -0.137 | 0.176 | - |  |
| NEFF | ctx-rh-posteriorcingulate | R-posCIN | -0.139 | 0.103 | -1.352 | -0.137 | 0.177 | - |  |
| NEFF | ctx-rh-precentral | R-preCEN | -0.190 | 0.104 | -1.829 | -0.185 | 0.068 | - |  |
| NEFF | ctx-rh-precuneus | R-preCUN | -0.208 | 0.097 | -2.145 | -0.217 | 0.032 | - |  |
| NEFF | ctx-rh-rostralanteriorcingulate | R-rosACG | -0.117 | 0.089 | -1.324 | -0.134 | 0.186 | - |  |
| NEFF | ctx-rh-rostralmiddlefrontal | R-rosMFR | -0.089 | 0.086 | -1.030 | -0.104 | 0.304 | - |  |
| NEFF | ctx-rh-superiorfrontal | R-supFRO | -0.085 | 0.093 | -0.917 | -0.093 | 0.359 | - |  |
| NEFF | ctx-rh-superiorparietal | R-supPAR | -0.176 | 0.097 | -1.805 | -0.182 | 0.072 | - |  |
| NEFF | ctx-rh-superiortemporal | R-supTEM | -0.150 | 0.101 | -1.481 | -0.150 | 0.139 | - |  |
| NEFF | ctx-rh-supramarginal | R-supMAR | -0.039 | 0.104 | -0.376 | -0.038 | 0.707 | - |  |
| NEFF | ctx-rh-frontalpole | R-froPOL | -0.113 | 0.085 | -1.335 | -0.135 | 0.182 | - |  |
| NEFF | ctx-rh-temporalpole | R-temPOL | -0.066 | 0.097 | -0.680 | -0.069 | 0.497 | - |  |
| NEFF | ctx-rh-transversetemporal | R-traTEM | -0.123 | 0.096 | -1.278 | -0.129 | 0.202 | - |  |
| NEFF | ctx-rh-insula | R-insula | -0.156 | 0.101 | -1.555 | -0.157 | 0.120 | - |  |
| GCC | Global |  | -0.057 | 0.103 | -0.554 | -0.056 | 0.580 | 0.580 |  |
| TIER\_CC | T1 |  | -0.066 | 0.103 | -0.640 | -0.065 | 0.522 | - |  |
| TIER\_CC | T2 |  | -0.071 | 0.100 | -0.712 | -0.072 | 0.477 | - |  |
| TIER\_CC | T3 |  | 0.031 | 0.104 | 0.301 | 0.030 | 0.764 | - |  |
| TIER\_CC | T4 |  | -0.040 | 0.099 | -0.405 | -0.041 | 0.686 | - |  |
| CC | Left-Thalamus-Proper | L-thal | -0.031 | 0.105 | -0.297 | -0.030 | 0.766 | - |  |
| CC | Left-Caudate | L-caud | -0.158 | 0.106 | -1.494 | -0.151 | 0.136 | - |  |
| CC | Left-Putamen | L-puta | -0.069 | 0.104 | -0.666 | -0.067 | 0.506 | - |  |
| CC | Left-Pallidum | L-pall | -0.092 | 0.103 | -0.900 | -0.091 | 0.369 | - |  |
| CC | Brain-Stem | bSTEM | -0.201 | 0.106 | -1.897 | -0.192 | 0.058 | - |  |
| CC | Left-Hippocampus | L-hipp | -0.070 | 0.106 | -0.658 | -0.066 | 0.511 | - |  |
| CC | Left-Amygdala | L-amyg | 0.102 | 0.106 | 0.962 | 0.097 | 0.336 | - |  |
| CC | Left-Accumbens-area | L-accu | -0.006 | 0.104 | -0.054 | -0.005 | 0.957 | - |  |
| CC | Left-VentralDC | L-venDC | -0.146 | 0.104 | -1.400 | -0.141 | 0.162 | - |  |
| CC | Right-Thalamus-Proper | R-thal | -0.020 | 0.102 | -0.194 | -0.020 | 0.846 | - |  |
| CC | Right-Caudate | R-caud | -0.084 | 0.106 | -0.792 | -0.080 | 0.429 | - |  |
| CC | Right-Putamen | R-puta | -0.099 | 0.101 | -0.980 | -0.099 | 0.327 | - |  |
| CC | Right-Pallidum | R-pall | -0.001 | 0.105 | -0.009 | -0.001 | 0.993 | - |  |
| CC | Right-Hippocampus | R-hipp | 0.107 | 0.105 | 1.018 | 0.103 | 0.309 | - |  |
| CC | Right-Amygdala | R-amyg | 0.138 | 0.105 | 1.305 | 0.132 | 0.192 | - |  |
| CC | Right-Accumbens-area | R-accu | 0.055 | 0.104 | 0.534 | 0.054 | 0.594 | - |  |
| CC | Right-VentralDC | R-venDC | -0.113 | 0.099 | -1.142 | -0.115 | 0.254 | - |  |
| CC | ctx-lh-bankssts | L-banks | 0.050 | 0.107 | 0.473 | 0.048 | 0.636 | - |  |
| CC | ctx-lh-caudalanteriorcingulate | L-cauACG | -0.021 | 0.106 | -0.200 | -0.020 | 0.842 | - |  |
| CC | ctx-lh-caudalmiddlefrontal | L-cauMFR | -0.095 | 0.101 | -0.946 | -0.096 | 0.344 | - |  |
| CC | ctx-lh-cuneus | L-cune | -0.072 | 0.104 | -0.687 | -0.069 | 0.492 | - |  |
| CC | ctx-lh-entorhinal | L-entorh | -0.016 | 0.103 | -0.159 | -0.016 | 0.874 | - |  |
| CC | ctx-lh-fusiform | L-fusif | -0.091 | 0.102 | -0.894 | -0.090 | 0.372 | - |  |
| CC | ctx-lh-inferiorparietal | L-infPAR | 0.003 | 0.101 | 0.029 | 0.003 | 0.977 | - |  |
| CC | ctx-lh-inferiortemporal | L-infTEM | -0.059 | 0.106 | -0.561 | -0.057 | 0.575 | - |  |
| CC | ctx-lh-isthmuscingulate | L-istCIN | -0.071 | 0.101 | -0.699 | -0.071 | 0.485 | - |  |
| CC | ctx-lh-lateraloccipital | L-latOCC | -0.112 | 0.103 | -1.085 | -0.110 | 0.278 | - |  |
| CC | ctx-lh-lateralorbitofrontal | L-latORB | -0.143 | 0.101 | -1.411 | -0.143 | 0.159 | - |  |
| CC | ctx-lh-lingual | L-lingual | 0.134 | 0.106 | 1.270 | 0.128 | 0.204 | - |  |
| CC | ctx-lh-medialorbitofrontal | L-medORB | 0.076 | 0.104 | 0.736 | 0.074 | 0.462 | - |  |
| CC | ctx-lh-middletemporal | L-midTEM | 0.013 | 0.104 | 0.122 | 0.012 | 0.903 | - |  |
| CC | ctx-lh-parahippocampal | L-parHIP | 0.020 | 0.111 | 0.179 | 0.019 | 0.858 | - |  |
| CC | ctx-lh-paracentral | L-parCEN | -0.132 | 0.102 | -1.300 | -0.131 | 0.194 | - |  |
| CC | ctx-lh-parsopercularis | L-parOPE | -0.170 | 0.099 | -1.717 | -0.173 | 0.087 | - |  |
| CC | ctx-lh-parsorbitalis | L-parORB | -0.097 | 0.106 | -0.923 | -0.093 | 0.356 | - |  |
| CC | ctx-lh-parstriangularis | L-parTRI | -0.031 | 0.106 | -0.289 | -0.029 | 0.773 | - |  |
| CC | ctx-lh-pericalcarine | L-perCAR | -0.130 | 0.103 | -1.264 | -0.128 | 0.207 | - |  |
| CC | ctx-lh-postcentral | L-posCEN | -0.038 | 0.102 | -0.369 | -0.037 | 0.712 | - |  |
| CC | ctx-lh-posteriorcingulate | L-posCIN | -0.130 | 0.102 | -1.270 | -0.128 | 0.204 | - |  |
| CC | ctx-lh-precentral | L-preCEN | -0.140 | 0.100 | -1.397 | -0.141 | 0.163 | - |  |
| CC | ctx-lh-precuneus | L-preCUN | -0.136 | 0.104 | -1.307 | -0.132 | 0.192 | - |  |
| CC | ctx-lh-rostralanteriorcingulate | L-rosACG | -0.150 | 0.101 | -1.488 | -0.150 | 0.137 | - |  |
| CC | ctx-lh-rostralmiddlefrontal | L-rosMFR | -0.030 | 0.106 | -0.280 | -0.028 | 0.779 | - |  |
| CC | ctx-lh-superiorfrontal | L-supFRO | -0.084 | 0.105 | -0.795 | -0.080 | 0.427 | - |  |
| CC | ctx-lh-superiorparietal | L-supPAR | -0.146 | 0.102 | -1.427 | -0.144 | 0.154 | - |  |
| CC | ctx-lh-superiortemporal | L-supTEM | -0.009 | 0.104 | -0.090 | -0.009 | 0.928 | - |  |
| CC | ctx-lh-supramarginal | L-supMAR | -0.123 | 0.105 | -1.175 | -0.119 | 0.240 | - |  |
| CC | ctx-lh-frontalpole | L-froPOL | 0.013 | 0.099 | 0.127 | 0.013 | 0.899 | - |  |
| CC | ctx-lh-temporalpole | L-temPOL | 0.054 | 0.104 | 0.521 | 0.053 | 0.602 | - |  |
| CC | ctx-lh-transversetemporal | L-traTEM | -0.201 | 0.104 | -1.936 | -0.196 | 0.053 | - |  |
| CC | ctx-lh-insula | L-insula | 0.119 | 0.105 | 1.132 | 0.114 | 0.258 | - |  |
| CC | ctx-rh-bankssts | R-banks | 0.083 | 0.104 | 0.793 | 0.080 | 0.428 | - |  |
| CC | ctx-rh-caudalanteriorcingulate | R-cauACG | -0.063 | 0.105 | -0.596 | -0.060 | 0.552 | - |  |
| CC | ctx-rh-caudalmiddlefrontal | R-cauMFR | 0.010 | 0.104 | 0.098 | 0.010 | 0.922 | - |  |
| CC | ctx-rh-cuneus | R-cune | -0.203 | 0.104 | -1.951 | -0.197 | 0.052 | - |  |
| CC | ctx-rh-entorhinal | R-entorh | 0.096 | 0.107 | 0.900 | 0.092 | 0.368 | - |  |
| CC | ctx-rh-fusiform | R-fusif | -0.038 | 0.104 | -0.362 | -0.037 | 0.717 | - |  |
| CC | ctx-rh-inferiorparietal | R-infPAR | 0.240 | 0.104 | 2.306 | 0.233 | 0.021 | - |  |
| CC | ctx-rh-inferiortemporal | R-infTEM | 0.003 | 0.105 | 0.031 | 0.003 | 0.976 | - |  |
| CC | ctx-rh-isthmuscingulate | R-istCIN | 0.012 | 0.104 | 0.111 | 0.011 | 0.911 | - |  |
| CC | ctx-rh-lateraloccipital | R-latOCC | 0.010 | 0.105 | 0.091 | 0.009 | 0.927 | - |  |
| CC | ctx-rh-lateralorbitofrontal | R-latORB | -0.092 | 0.096 | -0.957 | -0.097 | 0.339 | - |  |
| CC | ctx-rh-lingual | R-lingual | -0.005 | 0.101 | -0.045 | -0.004 | 0.964 | - |  |
| CC | ctx-rh-medialorbitofrontal | R-medORB | -0.058 | 0.100 | -0.575 | -0.058 | 0.566 | - |  |
| CC | ctx-rh-middletemporal | R-midTEM | 0.037 | 0.105 | 0.354 | 0.036 | 0.724 | - |  |
| CC | ctx-rh-parahippocampal | R-parHIP | -0.013 | 0.106 | -0.119 | -0.012 | 0.906 | - |  |
| CC | ctx-rh-paracentral | R-parCEN | -0.084 | 0.103 | -0.813 | -0.082 | 0.416 | - |  |
| CC | ctx-rh-parsopercularis | R-parOPE | 0.054 | 0.105 | 0.509 | 0.051 | 0.611 | - |  |
| CC | ctx-rh-parsorbitalis | R-parORB | -0.067 | 0.103 | -0.654 | -0.066 | 0.513 | - |  |
| CC | ctx-rh-parstriangularis | R-parTRI | 0.065 | 0.105 | 0.618 | 0.062 | 0.537 | - |  |
| CC | ctx-rh-pericalcarine | R-perCAR | -0.005 | 0.103 | -0.046 | -0.005 | 0.964 | - |  |
| CC | ctx-rh-postcentral | R-posCEN | -0.030 | 0.104 | -0.288 | -0.029 | 0.774 | - |  |
| CC | ctx-rh-posteriorcingulate | R-posCIN | -0.040 | 0.104 | -0.386 | -0.039 | 0.699 | - |  |
| CC | ctx-rh-precentral | R-preCEN | -0.059 | 0.104 | -0.570 | -0.058 | 0.569 | - |  |
| CC | ctx-rh-precuneus | R-preCUN | 0.009 | 0.104 | 0.083 | 0.008 | 0.934 | - |  |
| CC | ctx-rh-rostralanteriorcingulate | R-rosACG | -0.079 | 0.102 | -0.771 | -0.078 | 0.441 | - |  |
| CC | ctx-rh-rostralmiddlefrontal | R-rosMFR | -0.020 | 0.105 | -0.192 | -0.019 | 0.848 | - |  |
| CC | ctx-rh-superiorfrontal | R-supFRO | -0.085 | 0.104 | -0.821 | -0.083 | 0.412 | - |  |
| CC | ctx-rh-superiorparietal | R-supPAR | -0.032 | 0.103 | -0.313 | -0.032 | 0.754 | - |  |
| CC | ctx-rh-superiortemporal | R-supTEM | 0.040 | 0.105 | 0.384 | 0.039 | 0.701 | - |  |
| CC | ctx-rh-supramarginal | R-supMAR | 0.005 | 0.106 | 0.048 | 0.005 | 0.962 | - |  |
| CC | ctx-rh-frontalpole | R-froPOL | -0.040 | 0.101 | -0.394 | -0.040 | 0.694 | - |  |
| CC | ctx-rh-temporalpole | R-temPOL | 0.064 | 0.101 | 0.637 | 0.064 | 0.524 | - |  |
| CC | ctx-rh-transversetemporal | R-traTEM | -0.054 | 0.106 | -0.510 | -0.053 | 0.610 | - |  |
| CC | ctx-rh-insula | R-insula | -0.016 | 0.103 | -0.154 | -0.016 | 0.878 | - |  |

Table S7. Cohen's d for all network measures in UKB after controlling for age and sex in the supplementary analysis comparing MDD cases with and without antidepressant use. Among the cases, 14% took antidepressants and 86% did not. To aid comparison, rows highlighted in yellow represent measures that were significantly different between cases and controls in the discovery cohort (UKB) in the main analysis.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **measure** | **region** | **abb** | **beta** | **sd** | **tval** | **cohen\_d** | **pval** | **pFDR** | **sig** |
| GEFF | Global |  | -0.143 | 0.071 | -1.995 | -0.146 | 0.046 | 0.092 |  |
| TIER\_NEFF | T1 |  | -0.127 | 0.071 | -1.778 | -0.130 | 0.076 | - |  |
| TIER\_NEFF | T2 |  | -0.144 | 0.071 | -2.021 | -0.148 | 0.043 | - |  |
| TIER\_NEFF | T3 |  | -0.147 | 0.071 | -2.068 | -0.152 | 0.039 | - |  |
| TIER\_NEFF | T4 |  | -0.130 | 0.072 | -1.812 | -0.133 | 0.070 | - |  |
| NEFF | Left-Thalamus-Proper | L-thal | -0.167 | 0.072 | -2.309 | -0.169 | 0.021 | - |  |
| NEFF | Left-Caudate | L-caud | -0.090 | 0.072 | -1.260 | -0.092 | 0.208 | - |  |
| NEFF | Left-Putamen | L-puta | -0.104 | 0.071 | -1.464 | -0.107 | 0.144 | - |  |
| NEFF | Left-Pallidum | L-pall | -0.081 | 0.070 | -1.153 | -0.085 | 0.249 | - |  |
| NEFF | Brain-Stem | bSTEM | -0.073 | 0.072 | -1.025 | -0.075 | 0.305 | - |  |
| NEFF | Left-Hippocampus | L-hipp | -0.085 | 0.071 | -1.211 | -0.089 | 0.226 | - |  |
| NEFF | Left-Amygdala | L-amyg | -0.053 | 0.069 | -0.773 | -0.057 | 0.440 | - |  |
| NEFF | Left-Accumbens-area | L-accu | -0.143 | 0.072 | -1.999 | -0.147 | 0.046 | - |  |
| NEFF | Left-VentralDC | L-venDC | -0.064 | 0.070 | -0.911 | -0.067 | 0.362 | - |  |
| NEFF | Right-Thalamus-Proper | R-thal | -0.116 | 0.071 | -1.630 | -0.120 | 0.103 | - |  |
| NEFF | Right-Caudate | R-caud | -0.112 | 0.070 | -1.596 | -0.117 | 0.111 | - |  |
| NEFF | Right-Putamen | R-puta | -0.103 | 0.071 | -1.442 | -0.106 | 0.149 | - |  |
| NEFF | Right-Pallidum | R-pall | -0.037 | 0.072 | -0.515 | -0.038 | 0.607 | - |  |
| NEFF | Right-Hippocampus | R-hipp | 0.004 | 0.073 | 0.053 | 0.004 | 0.958 | - |  |
| NEFF | Right-Amygdala | R-amyg | -0.037 | 0.074 | -0.499 | -0.037 | 0.618 | - |  |
| NEFF | Right-Accumbens-area | R-accu | -0.193 | 0.074 | -2.614 | -0.192 | 0.009 | - |  |
| NEFF | Right-VentralDC | R-venDC | -0.086 | 0.072 | -1.206 | -0.088 | 0.228 | - |  |
| NEFF | ctx-lh-bankssts | L-banks | -0.114 | 0.073 | -1.560 | -0.114 | 0.119 | - |  |
| NEFF | ctx-lh-caudalanteriorcingulate | L-cauACG | -0.108 | 0.073 | -1.487 | -0.109 | 0.137 | - |  |
| NEFF | ctx-lh-caudalmiddlefrontal | L-cauMFR | -0.068 | 0.073 | -0.924 | -0.068 | 0.356 | - |  |
| NEFF | ctx-lh-cuneus | L-cune | -0.147 | 0.071 | -2.072 | -0.152 | 0.038 | - |  |
| NEFF | ctx-lh-entorhinal | L-entorh | -0.042 | 0.072 | -0.581 | -0.043 | 0.562 | - |  |
| NEFF | ctx-lh-fusiform | L-fusif | -0.200 | 0.071 | -2.834 | -0.208 | 0.005 | - |  |
| NEFF | ctx-lh-inferiorparietal | L-infPAR | -0.128 | 0.070 | -1.833 | -0.134 | 0.067 | - |  |
| NEFF | ctx-lh-inferiortemporal | L-infTEM | -0.160 | 0.071 | -2.240 | -0.164 | 0.025 | - |  |
| NEFF | ctx-lh-isthmuscingulate | L-istCIN | -0.097 | 0.071 | -1.361 | -0.100 | 0.174 | - |  |
| NEFF | ctx-lh-lateraloccipital | L-latOCC | -0.147 | 0.070 | -2.113 | -0.155 | 0.035 | - |  |
| NEFF | ctx-lh-lateralorbitofrontal | L-latORB | -0.209 | 0.073 | -2.870 | -0.210 | 0.004 | - |  |
| NEFF | ctx-lh-lingual | L-lingual | -0.058 | 0.072 | -0.798 | -0.059 | 0.425 | - |  |
| NEFF | ctx-lh-medialorbitofrontal | L-medORB | -0.118 | 0.072 | -1.639 | -0.120 | 0.101 | - |  |
| NEFF | ctx-lh-middletemporal | L-midTEM | -0.141 | 0.072 | -1.962 | -0.144 | 0.050 | - |  |
| NEFF | ctx-lh-parahippocampal | L-parHIP | -0.103 | 0.073 | -1.417 | -0.104 | 0.157 | - |  |
| NEFF | ctx-lh-paracentral | L-parCEN | -0.094 | 0.072 | -1.315 | -0.096 | 0.189 | - |  |
| NEFF | ctx-lh-parsopercularis | L-parOPE | -0.083 | 0.074 | -1.132 | -0.083 | 0.258 | - |  |
| NEFF | ctx-lh-parsorbitalis | L-parORB | -0.140 | 0.073 | -1.931 | -0.142 | 0.054 | - |  |
| NEFF | ctx-lh-parstriangularis | L-parTRI | 0.000 | 0.073 | 0.000 | 0.000 | 1.000 | - |  |
| NEFF | ctx-lh-pericalcarine | L-perCAR | -0.111 | 0.071 | -1.571 | -0.115 | 0.116 | - |  |
| NEFF | ctx-lh-postcentral | L-posCEN | -0.134 | 0.071 | -1.886 | -0.138 | 0.060 | - |  |
| NEFF | ctx-lh-posteriorcingulate | L-posCIN | -0.147 | 0.072 | -2.057 | -0.151 | 0.040 | - |  |
| NEFF | ctx-lh-precentral | L-preCEN | -0.135 | 0.073 | -1.853 | -0.136 | 0.064 | - |  |
| NEFF | ctx-lh-precuneus | L-preCUN | -0.096 | 0.071 | -1.343 | -0.099 | 0.179 | - |  |
| NEFF | ctx-lh-rostralanteriorcingulate | L-rosACG | -0.007 | 0.074 | -0.092 | -0.007 | 0.927 | - |  |
| NEFF | ctx-lh-rostralmiddlefrontal | L-rosMFR | -0.058 | 0.073 | -0.799 | -0.059 | 0.424 | - |  |
| NEFF | ctx-lh-superiorfrontal | L-supFRO | -0.068 | 0.074 | -0.917 | -0.067 | 0.359 | - |  |
| NEFF | ctx-lh-superiorparietal | L-supPAR | -0.086 | 0.071 | -1.223 | -0.090 | 0.222 | - |  |
| NEFF | ctx-lh-superiortemporal | L-supTEM | -0.117 | 0.072 | -1.622 | -0.119 | 0.105 | - |  |
| NEFF | ctx-lh-supramarginal | L-supMAR | -0.104 | 0.072 | -1.431 | -0.105 | 0.153 | - |  |
| NEFF | ctx-lh-frontalpole | L-froPOL | -0.094 | 0.072 | -1.296 | -0.095 | 0.195 | - |  |
| NEFF | ctx-lh-temporalpole | L-temPOL | -0.109 | 0.070 | -1.563 | -0.115 | 0.118 | - |  |
| NEFF | ctx-lh-transversetemporal | L-traTEM | -0.182 | 0.073 | -2.502 | -0.184 | 0.012 | - |  |
| NEFF | ctx-lh-insula | L-insula | -0.170 | 0.072 | -2.375 | -0.174 | 0.018 | - |  |
| NEFF | ctx-rh-bankssts | R-banks | -0.091 | 0.072 | -1.258 | -0.092 | 0.208 | - |  |
| NEFF | ctx-rh-caudalanteriorcingulate | R-cauACG | -0.219 | 0.073 | -2.981 | -0.219 | 0.003 | - |  |
| NEFF | ctx-rh-caudalmiddlefrontal | R-cauMFR | -0.048 | 0.072 | -0.671 | -0.049 | 0.502 | - |  |
| NEFF | ctx-rh-cuneus | R-cune | -0.156 | 0.071 | -2.190 | -0.161 | 0.029 | - |  |
| NEFF | ctx-rh-entorhinal | R-entorh | 0.067 | 0.074 | 0.896 | 0.066 | 0.370 | - |  |
| NEFF | ctx-rh-fusiform | R-fusif | -0.085 | 0.072 | -1.187 | -0.087 | 0.235 | - |  |
| NEFF | ctx-rh-inferiorparietal | R-infPAR | -0.052 | 0.072 | -0.728 | -0.053 | 0.467 | - |  |
| NEFF | ctx-rh-inferiortemporal | R-infTEM | -0.106 | 0.070 | -1.510 | -0.111 | 0.131 | - |  |
| NEFF | ctx-rh-isthmuscingulate | R-istCIN | -0.192 | 0.072 | -2.675 | -0.196 | 0.008 | - |  |
| NEFF | ctx-rh-lateraloccipital | R-latOCC | -0.190 | 0.071 | -2.687 | -0.197 | 0.007 | - |  |
| NEFF | ctx-rh-lateralorbitofrontal | R-latORB | -0.068 | 0.073 | -0.931 | -0.068 | 0.352 | - |  |
| NEFF | ctx-rh-lingual | R-lingual | -0.058 | 0.072 | -0.817 | -0.060 | 0.414 | - |  |
| NEFF | ctx-rh-medialorbitofrontal | R-medORB | -0.069 | 0.073 | -0.943 | -0.069 | 0.346 | - |  |
| NEFF | ctx-rh-middletemporal | R-midTEM | -0.078 | 0.071 | -1.098 | -0.081 | 0.272 | - |  |
| NEFF | ctx-rh-parahippocampal | R-parHIP | -0.048 | 0.070 | -0.689 | -0.051 | 0.491 | - |  |
| NEFF | ctx-rh-paracentral | R-parCEN | -0.145 | 0.072 | -2.006 | -0.147 | 0.045 | - |  |
| NEFF | ctx-rh-parsopercularis | R-parOPE | -0.104 | 0.072 | -1.437 | -0.105 | 0.151 | - |  |
| NEFF | ctx-rh-parsorbitalis | R-parORB | -0.101 | 0.073 | -1.383 | -0.101 | 0.167 | - |  |
| NEFF | ctx-rh-parstriangularis | R-parTRI | -0.115 | 0.073 | -1.563 | -0.115 | 0.118 | - |  |
| NEFF | ctx-rh-pericalcarine | R-perCAR | -0.140 | 0.070 | -2.000 | -0.147 | 0.046 | - |  |
| NEFF | ctx-rh-postcentral | R-posCEN | -0.072 | 0.071 | -1.006 | -0.074 | 0.314 | - |  |
| NEFF | ctx-rh-posteriorcingulate | R-posCIN | -0.165 | 0.073 | -2.276 | -0.167 | 0.023 | - |  |
| NEFF | ctx-rh-precentral | R-preCEN | -0.073 | 0.070 | -1.038 | -0.076 | 0.300 | - |  |
| NEFF | ctx-rh-precuneus | R-preCUN | -0.100 | 0.070 | -1.421 | -0.104 | 0.155 | - |  |
| NEFF | ctx-rh-rostralanteriorcingulate | R-rosACG | -0.115 | 0.074 | -1.556 | -0.114 | 0.120 | - |  |
| NEFF | ctx-rh-rostralmiddlefrontal | R-rosMFR | -0.108 | 0.073 | -1.471 | -0.108 | 0.141 | - |  |
| NEFF | ctx-rh-superiorfrontal | R-supFRO | -0.096 | 0.072 | -1.333 | -0.098 | 0.183 | - |  |
| NEFF | ctx-rh-superiorparietal | R-supPAR | -0.038 | 0.071 | -0.528 | -0.039 | 0.598 | - |  |
| NEFF | ctx-rh-superiortemporal | R-supTEM | -0.132 | 0.071 | -1.858 | -0.136 | 0.063 | - |  |
| NEFF | ctx-rh-supramarginal | R-supMAR | -0.129 | 0.072 | -1.807 | -0.133 | 0.071 | - |  |
| NEFF | ctx-rh-frontalpole | R-froPOL | -0.038 | 0.075 | -0.509 | -0.037 | 0.611 | - |  |
| NEFF | ctx-rh-temporalpole | R-temPOL | 0.014 | 0.072 | 0.189 | 0.014 | 0.850 | - |  |
| NEFF | ctx-rh-transversetemporal | R-traTEM | -0.145 | 0.072 | -2.007 | -0.147 | 0.045 | - |  |
| NEFF | ctx-rh-insula | R-insula | -0.160 | 0.071 | -2.251 | -0.165 | 0.025 | - |  |
| GCC | Global |  | -0.051 | 0.071 | -0.717 | -0.053 | 0.473 | 0.473 |  |
| TIER\_CC | T1 |  | -0.078 | 0.073 | -1.070 | -0.078 | 0.285 | - |  |
| TIER\_CC | T2 |  | -0.007 | 0.072 | -0.092 | -0.007 | 0.927 | - |  |
| TIER\_CC | T3 |  | -0.042 | 0.071 | -0.596 | -0.044 | 0.552 | - |  |
| TIER\_CC | T4 |  | -0.057 | 0.070 | -0.814 | -0.060 | 0.416 | - |  |
| CC | Left-Thalamus-Proper | L-thal | -0.024 | 0.073 | -0.321 | -0.024 | 0.748 | - |  |
| CC | Left-Caudate | L-caud | -0.029 | 0.071 | -0.406 | -0.030 | 0.685 | - |  |
| CC | Left-Putamen | L-puta | -0.043 | 0.072 | -0.602 | -0.044 | 0.547 | - |  |
| CC | Left-Pallidum | L-pall | 0.017 | 0.073 | 0.233 | 0.017 | 0.816 | - |  |
| CC | Brain-Stem | bSTEM | -0.007 | 0.069 | -0.099 | -0.007 | 0.921 | - |  |
| CC | Left-Hippocampus | L-hipp | 0.036 | 0.071 | 0.509 | 0.037 | 0.611 | - |  |
| CC | Left-Amygdala | L-amyg | 0.038 | 0.073 | 0.526 | 0.039 | 0.599 | - |  |
| CC | Left-Accumbens-area | L-accu | -0.100 | 0.067 | -1.488 | -0.109 | 0.137 | - |  |
| CC | Left-VentralDC | L-venDC | -0.024 | 0.074 | -0.331 | -0.024 | 0.740 | - |  |
| CC | Right-Thalamus-Proper | R-thal | -0.020 | 0.073 | -0.280 | -0.021 | 0.780 | - |  |
| CC | Right-Caudate | R-caud | -0.114 | 0.072 | -1.569 | -0.115 | 0.117 | - |  |
| CC | Right-Putamen | R-puta | -0.079 | 0.073 | -1.077 | -0.079 | 0.282 | - |  |
| CC | Right-Pallidum | R-pall | -0.092 | 0.075 | -1.240 | -0.091 | 0.215 | - |  |
| CC | Right-Hippocampus | R-hipp | -0.126 | 0.073 | -1.721 | -0.126 | 0.085 | - |  |
| CC | Right-Amygdala | R-amyg | 0.015 | 0.076 | 0.202 | 0.015 | 0.840 | - |  |
| CC | Right-Accumbens-area | R-accu | -0.218 | 0.073 | -2.989 | -0.219 | 0.003 | - |  |
| CC | Right-VentralDC | R-venDC | -0.109 | 0.075 | -1.451 | -0.106 | 0.147 | - |  |
| CC | ctx-lh-bankssts | L-banks | -0.003 | 0.072 | -0.035 | -0.003 | 0.972 | - |  |
| CC | ctx-lh-caudalanteriorcingulate | L-cauACG | -0.033 | 0.072 | -0.454 | -0.033 | 0.650 | - |  |
| CC | ctx-lh-caudalmiddlefrontal | L-cauMFR | -0.042 | 0.072 | -0.573 | -0.042 | 0.566 | - |  |
| CC | ctx-lh-cuneus | L-cune | -0.030 | 0.071 | -0.422 | -0.031 | 0.673 | - |  |
| CC | ctx-lh-entorhinal | L-entorh | -0.009 | 0.073 | -0.123 | -0.009 | 0.902 | - |  |
| CC | ctx-lh-fusiform | L-fusif | -0.025 | 0.073 | -0.345 | -0.025 | 0.730 | - |  |
| CC | ctx-lh-inferiorparietal | L-infPAR | 0.000 | 0.073 | 0.002 | 0.000 | 0.998 | - |  |
| CC | ctx-lh-inferiortemporal | L-infTEM | -0.030 | 0.072 | -0.423 | -0.031 | 0.672 | - |  |
| CC | ctx-lh-isthmuscingulate | L-istCIN | -0.146 | 0.072 | -2.022 | -0.148 | 0.043 | - |  |
| CC | ctx-lh-lateraloccipital | L-latOCC | -0.035 | 0.073 | -0.482 | -0.035 | 0.630 | - |  |
| CC | ctx-lh-lateralorbitofrontal | L-latORB | -0.072 | 0.072 | -0.998 | -0.073 | 0.318 | - |  |
| CC | ctx-lh-lingual | L-lingual | -0.251 | 0.072 | -3.478 | -0.255 | 0.001 | - |  |
| CC | ctx-lh-medialorbitofrontal | L-medORB | -0.092 | 0.073 | -1.267 | -0.093 | 0.205 | - |  |
| CC | ctx-lh-middletemporal | L-midTEM | -0.003 | 0.072 | -0.043 | -0.003 | 0.966 | - |  |
| CC | ctx-lh-parahippocampal | L-parHIP | -0.148 | 0.075 | -1.987 | -0.146 | 0.047 | - |  |
| CC | ctx-lh-paracentral | L-parCEN | 0.019 | 0.072 | 0.268 | 0.020 | 0.789 | - |  |
| CC | ctx-lh-parsopercularis | L-parOPE | 0.058 | 0.073 | 0.786 | 0.058 | 0.432 | - |  |
| CC | ctx-lh-parsorbitalis | L-parORB | 0.043 | 0.069 | 0.620 | 0.046 | 0.535 | - |  |
| CC | ctx-lh-parstriangularis | L-parTRI | 0.041 | 0.073 | 0.562 | 0.041 | 0.574 | - |  |
| CC | ctx-lh-pericalcarine | L-perCAR | -0.105 | 0.073 | -1.447 | -0.106 | 0.148 | - |  |
| CC | ctx-lh-postcentral | L-posCEN | 0.022 | 0.068 | 0.329 | 0.024 | 0.742 | - |  |
| CC | ctx-lh-posteriorcingulate | L-posCIN | 0.025 | 0.072 | 0.346 | 0.025 | 0.729 | - |  |
| CC | ctx-lh-precentral | L-preCEN | 0.029 | 0.072 | 0.405 | 0.030 | 0.686 | - |  |
| CC | ctx-lh-precuneus | L-preCUN | -0.042 | 0.071 | -0.592 | -0.043 | 0.554 | - |  |
| CC | ctx-lh-rostralanteriorcingulate | L-rosACG | -0.048 | 0.072 | -0.670 | -0.049 | 0.503 | - |  |
| CC | ctx-lh-rostralmiddlefrontal | L-rosMFR | -0.059 | 0.073 | -0.811 | -0.059 | 0.417 | - |  |
| CC | ctx-lh-superiorfrontal | L-supFRO | -0.029 | 0.070 | -0.414 | -0.030 | 0.679 | - |  |
| CC | ctx-lh-superiorparietal | L-supPAR | 0.017 | 0.071 | 0.233 | 0.017 | 0.816 | - |  |
| CC | ctx-lh-superiortemporal | L-supTEM | -0.075 | 0.073 | -1.024 | -0.075 | 0.306 | - |  |
| CC | ctx-lh-supramarginal | L-supMAR | 0.011 | 0.070 | 0.151 | 0.011 | 0.880 | - |  |
| CC | ctx-lh-frontalpole | L-froPOL | 0.041 | 0.075 | 0.551 | 0.040 | 0.581 | - |  |
| CC | ctx-lh-temporalpole | L-temPOL | -0.080 | 0.068 | -1.166 | -0.085 | 0.244 | - |  |
| CC | ctx-lh-transversetemporal | L-traTEM | 0.041 | 0.071 | 0.582 | 0.043 | 0.561 | - |  |
| CC | ctx-lh-insula | L-insula | -0.125 | 0.074 | -1.691 | -0.124 | 0.091 | - |  |
| CC | ctx-rh-bankssts | R-banks | -0.109 | 0.072 | -1.522 | -0.112 | 0.128 | - |  |
| CC | ctx-rh-caudalanteriorcingulate | R-cauACG | 0.126 | 0.073 | 1.735 | 0.127 | 0.083 | - |  |
| CC | ctx-rh-caudalmiddlefrontal | R-cauMFR | 0.107 | 0.071 | 1.501 | 0.110 | 0.134 | - |  |
| CC | ctx-rh-cuneus | R-cune | -0.051 | 0.070 | -0.717 | -0.053 | 0.473 | - |  |
| CC | ctx-rh-entorhinal | R-entorh | 0.049 | 0.075 | 0.652 | 0.048 | 0.515 | - |  |
| CC | ctx-rh-fusiform | R-fusif | -0.083 | 0.072 | -1.152 | -0.085 | 0.249 | - |  |
| CC | ctx-rh-inferiorparietal | R-infPAR | 0.006 | 0.072 | 0.086 | 0.006 | 0.932 | - |  |
| CC | ctx-rh-inferiortemporal | R-infTEM | -0.095 | 0.073 | -1.302 | -0.096 | 0.193 | - |  |
| CC | ctx-rh-isthmuscingulate | R-istCIN | 0.020 | 0.074 | 0.267 | 0.020 | 0.789 | - |  |
| CC | ctx-rh-lateraloccipital | R-latOCC | -0.089 | 0.072 | -1.245 | -0.091 | 0.213 | - |  |
| CC | ctx-rh-lateralorbitofrontal | R-latORB | -0.028 | 0.070 | -0.402 | -0.029 | 0.688 | - |  |
| CC | ctx-rh-lingual | R-lingual | -0.185 | 0.074 | -2.506 | -0.184 | 0.012 | - |  |
| CC | ctx-rh-medialorbitofrontal | R-medORB | -0.028 | 0.074 | -0.375 | -0.028 | 0.708 | - |  |
| CC | ctx-rh-middletemporal | R-midTEM | -0.039 | 0.073 | -0.533 | -0.039 | 0.594 | - |  |
| CC | ctx-rh-parahippocampal | R-parHIP | 0.021 | 0.071 | 0.287 | 0.021 | 0.774 | - |  |
| CC | ctx-rh-paracentral | R-parCEN | 0.058 | 0.073 | 0.795 | 0.058 | 0.427 | - |  |
| CC | ctx-rh-parsopercularis | R-parOPE | -0.029 | 0.070 | -0.414 | -0.030 | 0.679 | - |  |
| CC | ctx-rh-parsorbitalis | R-parORB | -0.074 | 0.070 | -1.048 | -0.077 | 0.295 | - |  |
| CC | ctx-rh-parstriangularis | R-parTRI | 0.007 | 0.069 | 0.102 | 0.007 | 0.919 | - |  |
| CC | ctx-rh-pericalcarine | R-perCAR | -0.036 | 0.070 | -0.507 | -0.037 | 0.612 | - |  |
| CC | ctx-rh-postcentral | R-posCEN | 0.049 | 0.072 | 0.675 | 0.049 | 0.500 | - |  |
| CC | ctx-rh-posteriorcingulate | R-posCIN | 0.073 | 0.071 | 1.021 | 0.075 | 0.307 | - |  |
| CC | ctx-rh-precentral | R-preCEN | 0.063 | 0.071 | 0.885 | 0.065 | 0.376 | - |  |
| CC | ctx-rh-precuneus | R-preCUN | -0.030 | 0.073 | -0.413 | -0.030 | 0.679 | - |  |
| CC | ctx-rh-rostralanteriorcingulate | R-rosACG | -0.101 | 0.074 | -1.368 | -0.100 | 0.171 | - |  |
| CC | ctx-rh-rostralmiddlefrontal | R-rosMFR | 0.072 | 0.072 | 1.006 | 0.074 | 0.314 | - |  |
| CC | ctx-rh-superiorfrontal | R-supFRO | 0.040 | 0.069 | 0.580 | 0.043 | 0.562 | - |  |
| CC | ctx-rh-superiorparietal | R-supPAR | -0.075 | 0.073 | -1.038 | -0.076 | 0.300 | - |  |
| CC | ctx-rh-superiortemporal | R-supTEM | -0.008 | 0.073 | -0.114 | -0.008 | 0.909 | - |  |
| CC | ctx-rh-supramarginal | R-supMAR | 0.046 | 0.072 | 0.630 | 0.046 | 0.529 | - |  |
| CC | ctx-rh-frontalpole | R-froPOL | -0.071 | 0.070 | -1.008 | -0.074 | 0.314 | - |  |
| CC | ctx-rh-temporalpole | R-temPOL | 0.054 | 0.072 | 0.750 | 0.055 | 0.454 | - |  |
| CC | ctx-rh-transversetemporal | R-traTEM | -0.065 | 0.073 | -0.894 | -0.066 | 0.372 | - |  |
| CC | ctx-rh-insula | R-insula | -0.036 | 0.073 | -0.490 | -0.036 | 0.624 | - |  |

Table S8. Cohen's d for all network measures in UKB after controlling for age and sex in the supplementary analysis comparing MDD cases and controls, excluding MDD cases with antidepressant use. Among the cases, 14% took antidepressants and 86% did not. To aid comparison, rows highlighted in yellow represent measures that were significantly different between cases and controls in the discovery cohort (UKB) in the main analysis.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **measure** | **region** | **abb** | **beta** | **sd** | **tval** | **cohen\_d** | **pval** | **pFDR** | **sig** |
| GEFF | Global |  | -0.059 | 0.033 | -1.774 | -0.058 | 0.076 | 0.117 |  |
| TIER\_NEFF | T1 |  | -0.061 | 0.033 | -1.856 | -0.060 | 0.063 | - |  |
| TIER\_NEFF | T2 |  | -0.051 | 0.033 | -1.544 | -0.050 | 0.123 | - |  |
| TIER\_NEFF | T3 |  | -0.058 | 0.033 | -1.738 | -0.057 | 0.082 | - |  |
| TIER\_NEFF | T4 |  | -0.063 | 0.033 | -1.899 | -0.062 | 0.058 | - |  |
| NEFF | Left-Thalamus-Proper | L-thal | -0.052 | 0.033 | -1.568 | -0.051 | 0.117 | - |  |
| NEFF | Left-Caudate | L-caud | -0.079 | 0.033 | -2.377 | -0.077 | 0.017 | - |  |
| NEFF | Left-Putamen | L-puta | -0.088 | 0.033 | -2.660 | -0.086 | 0.008 | - |  |
| NEFF | Left-Pallidum | L-pall | -0.070 | 0.033 | -2.147 | -0.070 | 0.032 | - |  |
| NEFF | Brain-Stem | bSTEM | -0.018 | 0.033 | -0.562 | -0.018 | 0.574 | - |  |
| NEFF | Left-Hippocampus | L-hipp | -0.044 | 0.033 | -1.332 | -0.043 | 0.183 | - |  |
| NEFF | Left-Amygdala | L-amyg | -0.022 | 0.033 | -0.674 | -0.022 | 0.501 | - |  |
| NEFF | Left-Accumbens-area | L-accu | -0.019 | 0.033 | -0.570 | -0.019 | 0.569 | - |  |
| NEFF | Left-VentralDC | L-venDC | -0.072 | 0.032 | -2.230 | -0.073 | 0.026 | - |  |
| NEFF | Right-Thalamus-Proper | R-thal | -0.069 | 0.033 | -2.112 | -0.069 | 0.035 | - |  |
| NEFF | Right-Caudate | R-caud | -0.067 | 0.032 | -2.085 | -0.068 | 0.037 | - |  |
| NEFF | Right-Putamen | R-puta | -0.083 | 0.033 | -2.504 | -0.081 | 0.012 | - |  |
| NEFF | Right-Pallidum | R-pall | -0.111 | 0.033 | -3.390 | -0.110 | 0.001 | - |  |
| NEFF | Right-Hippocampus | R-hipp | -0.063 | 0.033 | -1.909 | -0.062 | 0.056 | - |  |
| NEFF | Right-Amygdala | R-amyg | -0.039 | 0.033 | -1.195 | -0.039 | 0.232 | - |  |
| NEFF | Right-Accumbens-area | R-accu | -0.007 | 0.033 | -0.203 | -0.007 | 0.839 | - |  |
| NEFF | Right-VentralDC | R-venDC | -0.048 | 0.033 | -1.478 | -0.048 | 0.139 | - |  |
| NEFF | ctx-lh-bankssts | L-banks | -0.057 | 0.033 | -1.726 | -0.056 | 0.084 | - |  |
| NEFF | ctx-lh-caudalanteriorcingulate | L-cauACG | -0.017 | 0.033 | -0.525 | -0.017 | 0.600 | - |  |
| NEFF | ctx-lh-caudalmiddlefrontal | L-cauMFR | -0.035 | 0.033 | -1.063 | -0.035 | 0.288 | - |  |
| NEFF | ctx-lh-cuneus | L-cune | -0.035 | 0.033 | -1.058 | -0.034 | 0.290 | - |  |
| NEFF | ctx-lh-entorhinal | L-entorh | -0.023 | 0.033 | -0.702 | -0.023 | 0.483 | - |  |
| NEFF | ctx-lh-fusiform | L-fusif | -0.045 | 0.033 | -1.379 | -0.045 | 0.168 | - |  |
| NEFF | ctx-lh-inferiorparietal | L-infPAR | -0.015 | 0.032 | -0.460 | -0.015 | 0.645 | - |  |
| NEFF | ctx-lh-inferiortemporal | L-infTEM | -0.048 | 0.033 | -1.453 | -0.047 | 0.146 | - |  |
| NEFF | ctx-lh-isthmuscingulate | L-istCIN | -0.047 | 0.033 | -1.423 | -0.046 | 0.155 | - |  |
| NEFF | ctx-lh-lateraloccipital | L-latOCC | -0.037 | 0.033 | -1.123 | -0.037 | 0.262 | - |  |
| NEFF | ctx-lh-lateralorbitofrontal | L-latORB | -0.023 | 0.033 | -0.696 | -0.023 | 0.486 | - |  |
| NEFF | ctx-lh-lingual | L-lingual | -0.013 | 0.033 | -0.403 | -0.013 | 0.687 | - |  |
| NEFF | ctx-lh-medialorbitofrontal | L-medORB | -0.067 | 0.033 | -2.008 | -0.065 | 0.045 | - |  |
| NEFF | ctx-lh-middletemporal | L-midTEM | -0.007 | 0.033 | -0.219 | -0.007 | 0.827 | - |  |
| NEFF | ctx-lh-parahippocampal | L-parHIP | -0.040 | 0.033 | -1.193 | -0.039 | 0.233 | - |  |
| NEFF | ctx-lh-paracentral | L-parCEN | -0.046 | 0.033 | -1.387 | -0.045 | 0.165 | - |  |
| NEFF | ctx-lh-parsopercularis | L-parOPE | -0.051 | 0.033 | -1.531 | -0.050 | 0.126 | - |  |
| NEFF | ctx-lh-parsorbitalis | L-parORB | -0.066 | 0.033 | -1.981 | -0.064 | 0.048 | - |  |
| NEFF | ctx-lh-parstriangularis | L-parTRI | -0.090 | 0.033 | -2.723 | -0.089 | 0.007 | - |  |
| NEFF | ctx-lh-pericalcarine | L-perCAR | -0.037 | 0.033 | -1.108 | -0.036 | 0.268 | - |  |
| NEFF | ctx-lh-postcentral | L-posCEN | -0.014 | 0.033 | -0.435 | -0.014 | 0.663 | - |  |
| NEFF | ctx-lh-posteriorcingulate | L-posCIN | -0.043 | 0.033 | -1.297 | -0.042 | 0.195 | - |  |
| NEFF | ctx-lh-precentral | L-preCEN | -0.006 | 0.033 | -0.191 | -0.006 | 0.849 | - |  |
| NEFF | ctx-lh-precuneus | L-preCUN | -0.069 | 0.033 | -2.068 | -0.067 | 0.039 | - |  |
| NEFF | ctx-lh-rostralanteriorcingulate | L-rosACG | -0.054 | 0.033 | -1.630 | -0.053 | 0.103 | - |  |
| NEFF | ctx-lh-rostralmiddlefrontal | L-rosMFR | -0.065 | 0.033 | -1.975 | -0.064 | 0.048 | - |  |
| NEFF | ctx-lh-superiorfrontal | L-supFRO | -0.028 | 0.033 | -0.847 | -0.028 | 0.397 | - |  |
| NEFF | ctx-lh-superiorparietal | L-supPAR | -0.048 | 0.033 | -1.463 | -0.048 | 0.144 | - |  |
| NEFF | ctx-lh-superiortemporal | L-supTEM | -0.048 | 0.033 | -1.445 | -0.047 | 0.148 | - |  |
| NEFF | ctx-lh-supramarginal | L-supMAR | -0.028 | 0.033 | -0.855 | -0.028 | 0.392 | - |  |
| NEFF | ctx-lh-frontalpole | L-froPOL | -0.055 | 0.033 | -1.664 | -0.054 | 0.096 | - |  |
| NEFF | ctx-lh-temporalpole | L-temPOL | 0.038 | 0.033 | 1.155 | 0.038 | 0.248 | - |  |
| NEFF | ctx-lh-transversetemporal | L-traTEM | -0.011 | 0.033 | -0.338 | -0.011 | 0.735 | - |  |
| NEFF | ctx-lh-insula | L-insula | -0.078 | 0.033 | -2.380 | -0.077 | 0.017 | - |  |
| NEFF | ctx-rh-bankssts | R-banks | -0.030 | 0.033 | -0.923 | -0.030 | 0.356 | - |  |
| NEFF | ctx-rh-caudalanteriorcingulate | R-cauACG | -0.010 | 0.033 | -0.301 | -0.010 | 0.764 | - |  |
| NEFF | ctx-rh-caudalmiddlefrontal | R-cauMFR | -0.024 | 0.033 | -0.728 | -0.024 | 0.467 | - |  |
| NEFF | ctx-rh-cuneus | R-cune | -0.033 | 0.033 | -1.013 | -0.033 | 0.311 | - |  |
| NEFF | ctx-rh-entorhinal | R-entorh | -0.043 | 0.033 | -1.290 | -0.042 | 0.197 | - |  |
| NEFF | ctx-rh-fusiform | R-fusif | -0.047 | 0.033 | -1.422 | -0.046 | 0.155 | - |  |
| NEFF | ctx-rh-inferiorparietal | R-infPAR | -0.001 | 0.033 | -0.020 | -0.001 | 0.984 | - |  |
| NEFF | ctx-rh-inferiortemporal | R-infTEM | -0.058 | 0.033 | -1.761 | -0.057 | 0.078 | - |  |
| NEFF | ctx-rh-isthmuscingulate | R-istCIN | -0.029 | 0.033 | -0.868 | -0.028 | 0.386 | - |  |
| NEFF | ctx-rh-lateraloccipital | R-latOCC | -0.018 | 0.032 | -0.552 | -0.018 | 0.581 | - |  |
| NEFF | ctx-rh-lateralorbitofrontal | R-latORB | -0.041 | 0.033 | -1.232 | -0.040 | 0.218 | - |  |
| NEFF | ctx-rh-lingual | R-lingual | -0.071 | 0.033 | -2.155 | -0.070 | 0.031 | - |  |
| NEFF | ctx-rh-medialorbitofrontal | R-medORB | -0.039 | 0.033 | -1.169 | -0.038 | 0.243 | - |  |
| NEFF | ctx-rh-middletemporal | R-midTEM | -0.039 | 0.033 | -1.177 | -0.038 | 0.239 | - |  |
| NEFF | ctx-rh-parahippocampal | R-parHIP | -0.015 | 0.033 | -0.439 | -0.014 | 0.661 | - |  |
| NEFF | ctx-rh-paracentral | R-parCEN | -0.045 | 0.033 | -1.363 | -0.044 | 0.173 | - |  |
| NEFF | ctx-rh-parsopercularis | R-parOPE | 0.005 | 0.033 | 0.162 | 0.005 | 0.871 | - |  |
| NEFF | ctx-rh-parsorbitalis | R-parORB | -0.054 | 0.033 | -1.658 | -0.054 | 0.097 | - |  |
| NEFF | ctx-rh-parstriangularis | R-parTRI | -0.022 | 0.033 | -0.664 | -0.022 | 0.507 | - |  |
| NEFF | ctx-rh-pericalcarine | R-perCAR | -0.033 | 0.033 | -1.004 | -0.033 | 0.315 | - |  |
| NEFF | ctx-rh-postcentral | R-posCEN | -0.068 | 0.033 | -2.068 | -0.067 | 0.039 | - |  |
| NEFF | ctx-rh-posteriorcingulate | R-posCIN | -0.044 | 0.033 | -1.334 | -0.043 | 0.182 | - |  |
| NEFF | ctx-rh-precentral | R-preCEN | -0.015 | 0.033 | -0.463 | -0.015 | 0.643 | - |  |
| NEFF | ctx-rh-precuneus | R-preCUN | -0.049 | 0.033 | -1.471 | -0.048 | 0.141 | - |  |
| NEFF | ctx-rh-rostralanteriorcingulate | R-rosACG | -0.045 | 0.033 | -1.340 | -0.044 | 0.180 | - |  |
| NEFF | ctx-rh-rostralmiddlefrontal | R-rosMFR | -0.043 | 0.033 | -1.296 | -0.042 | 0.195 | - |  |
| NEFF | ctx-rh-superiorfrontal | R-supFRO | -0.033 | 0.033 | -0.993 | -0.032 | 0.321 | - |  |
| NEFF | ctx-rh-superiorparietal | R-supPAR | -0.039 | 0.033 | -1.161 | -0.038 | 0.246 | - |  |
| NEFF | ctx-rh-superiortemporal | R-supTEM | -0.026 | 0.033 | -0.786 | -0.026 | 0.432 | - |  |
| NEFF | ctx-rh-supramarginal | R-supMAR | -0.042 | 0.033 | -1.280 | -0.042 | 0.201 | - |  |
| NEFF | ctx-rh-frontalpole | R-froPOL | -0.037 | 0.033 | -1.101 | -0.036 | 0.271 | - |  |
| NEFF | ctx-rh-temporalpole | R-temPOL | -0.070 | 0.033 | -2.146 | -0.070 | 0.032 | - |  |
| NEFF | ctx-rh-transversetemporal | R-traTEM | -0.061 | 0.033 | -1.817 | -0.059 | 0.069 | - |  |
| NEFF | ctx-rh-insula | R-insula | -0.036 | 0.033 | -1.079 | -0.035 | 0.281 | - |  |
| GCC | Global |  | -0.052 | 0.033 | -1.567 | -0.051 | 0.117 | 0.117 |  |
| TIER\_CC | T1 |  | -0.031 | 0.033 | -0.942 | -0.031 | 0.346 | - |  |
| TIER\_CC | T2 |  | -0.041 | 0.033 | -1.225 | -0.040 | 0.221 | - |  |
| TIER\_CC | T3 |  | -0.046 | 0.033 | -1.398 | -0.045 | 0.162 | - |  |
| TIER\_CC | T4 |  | -0.068 | 0.033 | -2.050 | -0.067 | 0.040 | - |  |
| CC | Left-Thalamus-Proper | L-thal | -0.036 | 0.033 | -1.094 | -0.036 | 0.274 | - |  |
| CC | Left-Caudate | L-caud | -0.007 | 0.033 | -0.201 | -0.007 | 0.841 | - |  |
| CC | Left-Putamen | L-puta | 0.003 | 0.033 | 0.079 | 0.003 | 0.937 | - |  |
| CC | Left-Pallidum | L-pall | 0.046 | 0.033 | 1.375 | 0.045 | 0.169 | - |  |
| CC | Brain-Stem | bSTEM | -0.063 | 0.033 | -1.893 | -0.062 | 0.058 | - |  |
| CC | Left-Hippocampus | L-hipp | -0.015 | 0.033 | -0.442 | -0.014 | 0.659 | - |  |
| CC | Left-Amygdala | L-amyg | 0.003 | 0.033 | 0.082 | 0.003 | 0.934 | - |  |
| CC | Left-Accumbens-area | L-accu | -0.032 | 0.033 | -0.967 | -0.031 | 0.334 | - |  |
| CC | Left-VentralDC | L-venDC | 0.003 | 0.033 | 0.091 | 0.003 | 0.928 | - |  |
| CC | Right-Thalamus-Proper | R-thal | -0.029 | 0.033 | -0.885 | -0.029 | 0.376 | - |  |
| CC | Right-Caudate | R-caud | -0.041 | 0.033 | -1.235 | -0.040 | 0.217 | - |  |
| CC | Right-Putamen | R-puta | -0.017 | 0.033 | -0.508 | -0.017 | 0.612 | - |  |
| CC | Right-Pallidum | R-pall | 0.061 | 0.033 | 1.833 | 0.060 | 0.067 | - |  |
| CC | Right-Hippocampus | R-hipp | 0.000 | 0.033 | 0.006 | 0.000 | 0.995 | - |  |
| CC | Right-Amygdala | R-amyg | -0.068 | 0.033 | -2.056 | -0.067 | 0.040 | - |  |
| CC | Right-Accumbens-area | R-accu | -0.012 | 0.033 | -0.354 | -0.012 | 0.724 | - |  |
| CC | Right-VentralDC | R-venDC | -0.019 | 0.033 | -0.577 | -0.019 | 0.564 | - |  |
| CC | ctx-lh-bankssts | L-banks | 0.012 | 0.033 | 0.349 | 0.011 | 0.727 | - |  |
| CC | ctx-lh-caudalanteriorcingulate | L-cauACG | 0.023 | 0.033 | 0.707 | 0.023 | 0.480 | - |  |
| CC | ctx-lh-caudalmiddlefrontal | L-cauMFR | -0.047 | 0.033 | -1.424 | -0.046 | 0.154 | - |  |
| CC | ctx-lh-cuneus | L-cune | -0.057 | 0.033 | -1.736 | -0.056 | 0.083 | - |  |
| CC | ctx-lh-entorhinal | L-entorh | -0.004 | 0.033 | -0.116 | -0.004 | 0.908 | - |  |
| CC | ctx-lh-fusiform | L-fusif | -0.015 | 0.033 | -0.463 | -0.015 | 0.643 | - |  |
| CC | ctx-lh-inferiorparietal | L-infPAR | -0.061 | 0.033 | -1.842 | -0.060 | 0.066 | - |  |
| CC | ctx-lh-inferiortemporal | L-infTEM | -0.012 | 0.033 | -0.360 | -0.012 | 0.718 | - |  |
| CC | ctx-lh-isthmuscingulate | L-istCIN | -0.035 | 0.033 | -1.082 | -0.035 | 0.279 | - |  |
| CC | ctx-lh-lateraloccipital | L-latOCC | -0.028 | 0.033 | -0.832 | -0.027 | 0.405 | - |  |
| CC | ctx-lh-lateralorbitofrontal | L-latORB | -0.056 | 0.033 | -1.701 | -0.055 | 0.089 | - |  |
| CC | ctx-lh-lingual | L-lingual | 0.011 | 0.033 | 0.318 | 0.010 | 0.750 | - |  |
| CC | ctx-lh-medialorbitofrontal | L-medORB | 0.014 | 0.033 | 0.411 | 0.013 | 0.681 | - |  |
| CC | ctx-lh-middletemporal | L-midTEM | -0.018 | 0.033 | -0.530 | -0.017 | 0.596 | - |  |
| CC | ctx-lh-parahippocampal | L-parHIP | -0.042 | 0.033 | -1.269 | -0.041 | 0.204 | - |  |
| CC | ctx-lh-paracentral | L-parCEN | -0.032 | 0.033 | -0.993 | -0.032 | 0.321 | - |  |
| CC | ctx-lh-parsopercularis | L-parOPE | -0.029 | 0.033 | -0.874 | -0.028 | 0.382 | - |  |
| CC | ctx-lh-parsorbitalis | L-parORB | -0.019 | 0.033 | -0.573 | -0.019 | 0.567 | - |  |
| CC | ctx-lh-parstriangularis | L-parTRI | -0.071 | 0.033 | -2.137 | -0.069 | 0.033 | - |  |
| CC | ctx-lh-pericalcarine | L-perCAR | -0.028 | 0.033 | -0.838 | -0.027 | 0.402 | - |  |
| CC | ctx-lh-postcentral | L-posCEN | -0.063 | 0.032 | -1.941 | -0.063 | 0.052 | - |  |
| CC | ctx-lh-posteriorcingulate | L-posCIN | -0.032 | 0.033 | -0.986 | -0.032 | 0.324 | - |  |
| CC | ctx-lh-precentral | L-preCEN | -0.048 | 0.033 | -1.467 | -0.048 | 0.142 | - |  |
| CC | ctx-lh-precuneus | L-preCUN | -0.011 | 0.033 | -0.317 | -0.010 | 0.751 | - |  |
| CC | ctx-lh-rostralanteriorcingulate | L-rosACG | -0.060 | 0.033 | -1.823 | -0.059 | 0.068 | - |  |
| CC | ctx-lh-rostralmiddlefrontal | L-rosMFR | -0.022 | 0.033 | -0.656 | -0.021 | 0.512 | - |  |
| CC | ctx-lh-superiorfrontal | L-supFRO | -0.052 | 0.033 | -1.576 | -0.051 | 0.115 | - |  |
| CC | ctx-lh-superiorparietal | L-supPAR | -0.065 | 0.033 | -1.977 | -0.064 | 0.048 | - |  |
| CC | ctx-lh-superiortemporal | L-supTEM | 0.004 | 0.033 | 0.122 | 0.004 | 0.903 | - |  |
| CC | ctx-lh-supramarginal | L-supMAR | -0.043 | 0.033 | -1.305 | -0.042 | 0.192 | - |  |
| CC | ctx-lh-frontalpole | L-froPOL | 0.019 | 0.033 | 0.564 | 0.018 | 0.573 | - |  |
| CC | ctx-lh-temporalpole | L-temPOL | -0.027 | 0.033 | -0.816 | -0.027 | 0.414 | - |  |
| CC | ctx-lh-transversetemporal | L-traTEM | -0.042 | 0.033 | -1.281 | -0.042 | 0.200 | - |  |
| CC | ctx-lh-insula | L-insula | 0.010 | 0.033 | 0.293 | 0.010 | 0.770 | - |  |
| CC | ctx-rh-bankssts | R-banks | -0.022 | 0.033 | -0.657 | -0.021 | 0.511 | - |  |
| CC | ctx-rh-caudalanteriorcingulate | R-cauACG | -0.047 | 0.033 | -1.437 | -0.047 | 0.151 | - |  |
| CC | ctx-rh-caudalmiddlefrontal | R-cauMFR | -0.051 | 0.033 | -1.544 | -0.050 | 0.123 | - |  |
| CC | ctx-rh-cuneus | R-cune | -0.059 | 0.033 | -1.766 | -0.057 | 0.078 | - |  |
| CC | ctx-rh-entorhinal | R-entorh | -0.048 | 0.033 | -1.443 | -0.047 | 0.149 | - |  |
| CC | ctx-rh-fusiform | R-fusif | -0.025 | 0.033 | -0.738 | -0.024 | 0.461 | - |  |
| CC | ctx-rh-inferiorparietal | R-infPAR | -0.024 | 0.033 | -0.726 | -0.024 | 0.468 | - |  |
| CC | ctx-rh-inferiortemporal | R-infTEM | -0.002 | 0.033 | -0.065 | -0.002 | 0.948 | - |  |
| CC | ctx-rh-isthmuscingulate | R-istCIN | -0.040 | 0.033 | -1.211 | -0.039 | 0.226 | - |  |
| CC | ctx-rh-lateraloccipital | R-latOCC | -0.031 | 0.033 | -0.935 | -0.030 | 0.350 | - |  |
| CC | ctx-rh-lateralorbitofrontal | R-latORB | -0.027 | 0.033 | -0.807 | -0.026 | 0.420 | - |  |
| CC | ctx-rh-lingual | R-lingual | 0.028 | 0.033 | 0.833 | 0.027 | 0.405 | - |  |
| CC | ctx-rh-medialorbitofrontal | R-medORB | -0.014 | 0.033 | -0.416 | -0.014 | 0.677 | - |  |
| CC | ctx-rh-middletemporal | R-midTEM | -0.027 | 0.033 | -0.823 | -0.027 | 0.411 | - |  |
| CC | ctx-rh-parahippocampal | R-parHIP | 0.000 | 0.033 | 0.001 | 0.000 | 0.999 | - |  |
| CC | ctx-rh-paracentral | R-parCEN | -0.029 | 0.033 | -0.866 | -0.028 | 0.387 | - |  |
| CC | ctx-rh-parsopercularis | R-parOPE | -0.018 | 0.033 | -0.542 | -0.018 | 0.588 | - |  |
| CC | ctx-rh-parsorbitalis | R-parORB | -0.047 | 0.033 | -1.407 | -0.046 | 0.160 | - |  |
| CC | ctx-rh-parstriangularis | R-parTRI | -0.054 | 0.033 | -1.629 | -0.053 | 0.103 | - |  |
| CC | ctx-rh-pericalcarine | R-perCAR | -0.034 | 0.033 | -1.028 | -0.033 | 0.304 | - |  |
| CC | ctx-rh-postcentral | R-posCEN | -0.036 | 0.033 | -1.087 | -0.035 | 0.277 | - |  |
| CC | ctx-rh-posteriorcingulate | R-posCIN | -0.040 | 0.033 | -1.207 | -0.039 | 0.227 | - |  |
| CC | ctx-rh-precentral | R-preCEN | -0.078 | 0.033 | -2.366 | -0.077 | 0.018 | - |  |
| CC | ctx-rh-precuneus | R-preCUN | -0.070 | 0.033 | -2.096 | -0.068 | 0.036 | - |  |
| CC | ctx-rh-rostralanteriorcingulate | R-rosACG | 0.003 | 0.033 | 0.081 | 0.003 | 0.936 | - |  |
| CC | ctx-rh-rostralmiddlefrontal | R-rosMFR | -0.046 | 0.033 | -1.376 | -0.045 | 0.169 | - |  |
| CC | ctx-rh-superiorfrontal | R-supFRO | -0.051 | 0.033 | -1.545 | -0.050 | 0.122 | - |  |
| CC | ctx-rh-superiorparietal | R-supPAR | -0.066 | 0.033 | -1.972 | -0.064 | 0.049 | - |  |
| CC | ctx-rh-superiortemporal | R-supTEM | -0.004 | 0.033 | -0.125 | -0.004 | 0.901 | - |  |
| CC | ctx-rh-supramarginal | R-supMAR | -0.037 | 0.033 | -1.115 | -0.036 | 0.265 | - |  |
| CC | ctx-rh-frontalpole | R-froPOL | -0.009 | 0.033 | -0.265 | -0.009 | 0.791 | - |  |
| CC | ctx-rh-temporalpole | R-temPOL | -0.056 | 0.033 | -1.690 | -0.055 | 0.091 | - |  |
| CC | ctx-rh-transversetemporal | R-traTEM | 0.017 | 0.033 | 0.518 | 0.017 | 0.605 | - |  |
| CC | ctx-rh-insula | R-insula | -0.010 | 0.033 | -0.314 | -0.010 | 0.753 | - |  |

Table S9. Bayes factor analysis looking at network differences between MDD cases and controls in GS. For the model, we used network measures as the dependent variable, MDD status as the grouping factor, and age, sex and site as covariates. This model was compared to a null model, which also included age, sex, and site as covariates, to derive BF10. To aid comparison, rows highlighted in yellow represent measures that were significantly different between cases and controls in the discovery cohort (UKB) in the main analysis.

Note: Briefly, in comparing the alternative hypothesis to the null hypothesis (BF10), a BF10 of value *X* would mean that the data are *X* times more likely under the alternative hypothesis than under the null. To determine the strength of evidence, we used the suggested reference values, where BF10>3 can be interpreted as being roughly similar to p<0.05. BF10<1/3 would suggest moderate evidence for the absence of an effect, 1/3<BF10<3 would suggest absence of evidence (i.e., study not informative enough), and BF10>3 would suggest moderate evidence for the presence of an effect (Keysers, Gazzola & Wagenmakers, 2020).

The results show that majority of the measures had BF10 below 1 (i.e., less likely to occur as compared to the null) and fall under the category of BF10<1/3, suggesting moderate evidence for the absence of effect. However, we would like to highlight that the correlation between the case-control Cohen’s d for all the network measures between those derived in UKB and GS were rather strong and significant (rs=0.37, p=7.1×10-7), suggesting that the effects observed in UKB are likely to be consistent in GS. The lack of significant findings might be a matter of insufficient sample size and not necessarily an absence of effect, especially since previous studies have reported that a sample size of at least N=1000 is needed to reliably detect brain-behaviour associations (Marek et al., 2022).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **measure** | **region** | **abb** | **BF10** | **BF10\_error** |
| GEFF | Global |  | 0.16115411 | 0.15696768 |
| TIER\_LNEF | T1 |  | 0.1330622 | 0.02372637 |
| TIER\_LNEF | T2 |  | 0.13692971 | 0.04360612 |
| TIER\_LNEF | T3 |  | 0.1220917 | 0.0293749 |
| TIER\_LNEF | T4 |  | 0.19829608 | 0.2006628 |
| LNEF | Left-Thalamus-Proper | L-thal | 0.15083621 | 0.0270096 |
| LNEF | Left-Caudate | L-caud | 0.13478229 | 0.02544543 |
| LNEF | Left-Putamen | L-puta | 0.16002935 | 0.04247565 |
| LNEF | Left-Pallidum | L-pall | 0.16250855 | 0.03222233 |
| LNEF | Brain-Stem | bSTEM | 0.18425498 | 0.03403999 |
| LNEF | Left-Hippocampus | L-hipp | 0.14588602 | 0.08306244 |
| LNEF | Left-Amygdala | L-amyg | 0.11861926 | 0.03176265 |
| LNEF | Left-Accumbens-area | L-accu | 0.09504783 | 0.13753686 |
| LNEF | Left-VentralDC | L-venDC | 0.15883309 | 0.03948545 |
| LNEF | Right-Thalamus-Proper | R-thal | 0.15814095 | 0.02119135 |
| LNEF | Right-Caudate | R-caud | 0.12772797 | 0.03130398 |
| LNEF | Right-Putamen | R-puta | 0.28841983 | 0.03865176 |
| LNEF | Right-Pallidum | R-pall | 0.21954407 | 0.05386256 |
| LNEF | Right-Hippocampus | R-hipp | 0.12499978 | 0.02231405 |
| LNEF | Right-Amygdala | R-amyg | 0.14409981 | 0.04541631 |
| LNEF | Right-Accumbens-area | R-accu | 0.45694309 | 0.05087775 |
| LNEF | Right-VentralDC | R-venDC | 0.11909494 | 0.04389136 |
| LNEF | ctx-lh-bankssts | L-banks | 0.13579644 | 0.05617556 |
| LNEF | ctx-lh-caudalanteriorcingulate | L-cauACG | 0.14191245 | 0.02259783 |
| LNEF | ctx-lh-caudalmiddlefrontal | L-cauMFR | 0.14781244 | 0.02380726 |
| LNEF | ctx-lh-cuneus | L-cune | 1.26465961 | 0.06586829 |
| LNEF | ctx-lh-entorhinal | L-entorh | 0.1160552 | 0.04823371 |
| LNEF | ctx-lh-fusiform | L-fusif | 0.15293092 | 0.03276657 |
| LNEF | ctx-lh-inferiorparietal | L-infPAR | 0.15207149 | 0.02405598 |
| LNEF | ctx-lh-inferiortemporal | L-infTEM | 0.13017855 | 0.03242282 |
| LNEF | ctx-lh-isthmuscingulate | L-istCIN | 0.16669664 | 0.0211162 |
| LNEF | ctx-lh-lateraloccipital | L-latOCC | 0.11446774 | 0.03209847 |
| LNEF | ctx-lh-lateralorbitofrontal | L-latORB | 0.35663411 | 0.03333823 |
| LNEF | ctx-lh-lingual | L-lingual | 0.26173804 | 0.03420066 |
| LNEF | ctx-lh-medialorbitofrontal | L-medORB | 0.1504379 | 0.0320086 |
| LNEF | ctx-lh-middletemporal | L-midTEM | 0.08832218 | 0.22643338 |
| LNEF | ctx-lh-parahippocampal | L-parHIP | 0.11579994 | 0.07074013 |
| LNEF | ctx-lh-paracentral | L-parCEN | 0.12556455 | 0.04882464 |
| LNEF | ctx-lh-parsopercularis | L-parOPE | 0.20691228 | 0.45121519 |
| LNEF | ctx-lh-parsorbitalis | L-parORB | 0.15506163 | 0.04947517 |
| LNEF | ctx-lh-parstriangularis | L-parTRI | 0.16602285 | 0.0500814 |
| LNEF | ctx-lh-pericalcarine | L-perCAR | 0.18265883 | 0.06232319 |
| LNEF | ctx-lh-postcentral | L-posCEN | 0.40008265 | 0.0488138 |
| LNEF | ctx-lh-posteriorcingulate | L-posCIN | 0.14726067 | 0.03364983 |
| LNEF | ctx-lh-precentral | L-preCEN | 0.12751994 | 0.04324029 |
| LNEF | ctx-lh-precuneus | L-preCUN | 0.11528551 | 0.02518855 |
| LNEF | ctx-lh-rostralanteriorcingulate | L-rosACG | 0.15343462 | 0.0333054 |
| LNEF | ctx-lh-rostralmiddlefrontal | L-rosMFR | 0.12004891 | 0.02329184 |
| LNEF | ctx-lh-superiorfrontal | L-supFRO | 0.12939953 | 0.04903821 |
| LNEF | ctx-lh-superiorparietal | L-supPAR | 0.22612295 | 0.02737812 |
| LNEF | ctx-lh-superiortemporal | L-supTEM | 0.13009271 | 0.04078699 |
| LNEF | ctx-lh-supramarginal | L-supMAR | 0.26907552 | 0.84953399 |
| LNEF | ctx-lh-frontalpole | L-froPOL | 0.19305654 | 0.06207071 |
| LNEF | ctx-lh-temporalpole | L-temPOL | 0.21524709 | 0.0302919 |
| LNEF | ctx-lh-transversetemporal | L-traTEM | 0.34242874 | 0.02250714 |
| LNEF | ctx-lh-insula | L-insula | 0.13664826 | 0.02403309 |
| LNEF | ctx-rh-bankssts | R-banks | 0.14377869 | 0.04416332 |
| LNEF | ctx-rh-caudalanteriorcingulate | R-cauACG | 0.12694851 | 0.08610289 |
| LNEF | ctx-rh-caudalmiddlefrontal | R-cauMFR | 0.11710021 | 0.02143745 |
| LNEF | ctx-rh-cuneus | R-cune | 0.16679219 | 0.02209158 |
| LNEF | ctx-rh-entorhinal | R-entorh | 0.26672156 | 0.06683795 |
| LNEF | ctx-rh-fusiform | R-fusif | 0.28478987 | 0.03233084 |
| LNEF | ctx-rh-inferiorparietal | R-infPAR | 0.17650011 | 0.02105307 |
| LNEF | ctx-rh-inferiortemporal | R-infTEM | 0.1010021 | 0.18258712 |
| LNEF | ctx-rh-isthmuscingulate | R-istCIN | 0.12543461 | 0.03388579 |
| LNEF | ctx-rh-lateraloccipital | R-latOCC | 0.11968064 | 0.07473535 |
| LNEF | ctx-rh-lateralorbitofrontal | R-latORB | 0.15852023 | 0.02205961 |
| LNEF | ctx-rh-lingual | R-lingual | 0.1201137 | 0.04683142 |
| LNEF | ctx-rh-medialorbitofrontal | R-medORB | 0.15396901 | 0.02112863 |
| LNEF | ctx-rh-middletemporal | R-midTEM | 0.12706729 | 0.03520928 |
| LNEF | ctx-rh-parahippocampal | R-parHIP | 0.13888401 | 0.03808925 |
| LNEF | ctx-rh-paracentral | R-parCEN | 0.12491481 | 0.06990945 |
| LNEF | ctx-rh-parsopercularis | R-parOPE | 0.42301928 | 0.04502333 |
| LNEF | ctx-rh-parsorbitalis | R-parORB | 0.11423656 | 0.02631305 |
| LNEF | ctx-rh-parstriangularis | R-parTRI | 0.14331802 | 0.02571658 |
| LNEF | ctx-rh-pericalcarine | R-perCAR | 0.12203971 | 0.04968352 |
| LNEF | ctx-rh-postcentral | R-posCEN | 0.17370452 | 0.02475531 |
| LNEF | ctx-rh-posteriorcingulate | R-posCIN | 0.13545381 | 0.03117073 |
| LNEF | ctx-rh-precentral | R-preCEN | 0.26101651 | 0.02238347 |
| LNEF | ctx-rh-precuneus | R-preCUN | 0.23402818 | 0.03858195 |
| LNEF | ctx-rh-rostralanteriorcingulate | R-rosACG | 0.16509765 | 0.02113082 |
| LNEF | ctx-rh-rostralmiddlefrontal | R-rosMFR | 0.12638377 | 0.03882118 |
| LNEF | ctx-rh-superiorfrontal | R-supFRO | 0.11047395 | 0.01964023 |
| LNEF | ctx-rh-superiorparietal | R-supPAR | 0.13809604 | 0.03548247 |
| LNEF | ctx-rh-superiortemporal | R-supTEM | 0.11120316 | 0.20204433 |
| LNEF | ctx-rh-supramarginal | R-supMAR | 0.09594432 | 0.18228997 |
| LNEF | ctx-rh-frontalpole | R-froPOL | 0.1223241 | 0.02617827 |
| LNEF | ctx-rh-temporalpole | R-temPOL | 0.11757652 | 0.04070014 |
| LNEF | ctx-rh-transversetemporal | R-traTEM | 0.17697539 | 0.01994915 |
| LNEF | ctx-rh-insula | R-insula | 0.1575456 | 0.06457639 |
| GCC | Global |  | 0.11634358 | 0.03421479 |
| TIER\_LCC | T4 |  | 0.14243643 | 0.08663579 |
| TIER\_LCC | T1 |  | 0.12277424 | 0.04124247 |
| TIER\_LCC | T2 |  | 0.11997807 | 0.02861867 |
| TIER\_LCC | T3 |  | 0.19411091 | 0.22454987 |
| LCC | Left-Thalamus-Proper | L-thal | 0.17438553 | 0.24538222 |
| LCC | Left-Caudate | L-caud | 0.17189786 | 0.02551096 |
| LCC | Left-Putamen | L-puta | 0.13036023 | 0.03657811 |
| LCC | Left-Pallidum | L-pall | 0.12371839 | 0.0943803 |
| LCC | Brain-Stem | bSTEM | 0.25515326 | 0.08036026 |
| LCC | Left-Hippocampus | L-hipp | 0.17332785 | 0.08181673 |
| LCC | Left-Amygdala | L-amyg | 0.32449911 | 0.02695624 |
| LCC | Left-Accumbens-area | L-accu | 0.67698466 | 0.0560877 |
| LCC | Left-VentralDC | L-venDC | 0.12290402 | 0.03715117 |
| LCC | Right-Thalamus-Proper | R-thal | 0.16746518 | 0.04140049 |
| LCC | Right-Caudate | R-caud | 0.14894568 | 0.0652848 |
| LCC | Right-Putamen | R-puta | 0.12101104 | 0.02172291 |
| LCC | Right-Pallidum | R-pall | 0.13914248 | 0.02472246 |
| LCC | Right-Hippocampus | R-hipp | 0.11789203 | 0.05189223 |
| LCC | Right-Amygdala | R-amyg | 2.45490842 | 0.05350073 |
| LCC | Right-Accumbens-area | R-accu | 6.51839124 | 0.98076464 |
| LCC | Right-VentralDC | R-venDC | 0.15720347 | 0.07467294 |
| LCC | ctx-lh-bankssts | L-banks | 0.12116573 | 0.03878084 |
| LCC | ctx-lh-caudalanteriorcingulate | L-cauACG | 0.11113763 | 0.1115267 |
| LCC | ctx-lh-caudalmiddlefrontal | L-cauMFR | 0.22543476 | 0.04910314 |
| LCC | ctx-lh-cuneus | L-cune | 0.13300241 | 0.03318202 |
| LCC | ctx-lh-entorhinal | L-entorh | 0.11149816 | 0.09746281 |
| LCC | ctx-lh-fusiform | L-fusif | 0.16854242 | 0.06873485 |
| LCC | ctx-lh-inferiorparietal | L-infPAR | 0.13639207 | 0.09944227 |
| LCC | ctx-lh-inferiortemporal | L-infTEM | 0.13305417 | 0.05189519 |
| LCC | ctx-lh-isthmuscingulate | L-istCIN | 0.13516589 | 0.03421247 |
| LCC | ctx-lh-lateraloccipital | L-latOCC | 0.11780524 | 0.03286496 |
| LCC | ctx-lh-lateralorbitofrontal | L-latORB | 0.89119405 | 0.02214524 |
| LCC | ctx-lh-lingual | L-lingual | 0.54040065 | 0.02839444 |
| LCC | ctx-lh-medialorbitofrontal | L-medORB | 0.15687578 | 0.04144085 |
| LCC | ctx-lh-middletemporal | L-midTEM | 0.12443853 | 0.0339458 |
| LCC | ctx-lh-parahippocampal | L-parHIP | 0.11143187 | 0.0408074 |
| LCC | ctx-lh-paracentral | L-parCEN | 0.18952023 | 0.05598854 |
| LCC | ctx-lh-parsopercularis | L-parOPE | 0.24697503 | 0.04153441 |
| LCC | ctx-lh-parsorbitalis | L-parORB | 0.14783557 | 0.04387814 |
| LCC | ctx-lh-parstriangularis | L-parTRI | 0.18440829 | 0.04898933 |
| LCC | ctx-lh-pericalcarine | L-perCAR | 0.13047466 | 0.03082269 |
| LCC | ctx-lh-postcentral | L-posCEN | 0.13182352 | 0.03132139 |
| LCC | ctx-lh-posteriorcingulate | L-posCIN | 0.15730876 | 0.0424746 |
| LCC | ctx-lh-precentral | L-preCEN | 0.37089989 | 0.03823101 |
| LCC | ctx-lh-precuneus | L-preCUN | 0.14625061 | 0.02515656 |
| LCC | ctx-lh-rostralanteriorcingulate | L-rosACG | 0.18822436 | 0.02462713 |
| LCC | ctx-lh-rostralmiddlefrontal | L-rosMFR | 0.12886576 | 0.03458263 |
| LCC | ctx-lh-superiorfrontal | L-supFRO | 0.12730217 | 0.02406275 |
| LCC | ctx-lh-superiorparietal | L-supPAR | 0.11086489 | 0.03529768 |
| LCC | ctx-lh-superiortemporal | L-supTEM | 0.1364857 | 0.02345061 |
| LCC | ctx-lh-supramarginal | L-supMAR | 0.31286786 | 0.04912556 |
| LCC | ctx-lh-frontalpole | L-froPOL | 0.11990528 | 0.02069123 |
| LCC | ctx-lh-temporalpole | L-temPOL | 0.14857474 | 0.05348019 |
| LCC | ctx-lh-transversetemporal | L-traTEM | 0.18320921 | 0.09881816 |
| LCC | ctx-lh-insula | L-insula | 0.15542712 | 0.03413163 |
| LCC | ctx-rh-bankssts | R-banks | 0.13469865 | 0.02409235 |
| LCC | ctx-rh-caudalanteriorcingulate | R-cauACG | 0.11390732 | 0.04262898 |
| LCC | ctx-rh-caudalmiddlefrontal | R-cauMFR | 0.12877372 | 0.10047992 |
| LCC | ctx-rh-cuneus | R-cune | 0.38964623 | 0.04010708 |
| LCC | ctx-rh-entorhinal | R-entorh | 0.11697274 | 0.0362858 |
| LCC | ctx-rh-fusiform | R-fusif | 0.12567745 | 0.02335213 |
| LCC | ctx-rh-inferiorparietal | R-infPAR | 0.67842239 | 0.05586979 |
| LCC | ctx-rh-inferiortemporal | R-infTEM | 0.12938697 | 0.03694808 |
| LCC | ctx-rh-isthmuscingulate | R-istCIN | 0.19372544 | 0.1087856 |
| LCC | ctx-rh-lateraloccipital | R-latOCC | 0.1407557 | 0.06972331 |
| LCC | ctx-rh-lateralorbitofrontal | R-latORB | 0.13418814 | 0.05308628 |
| LCC | ctx-rh-lingual | R-lingual | 0.12949191 | 0.03280416 |
| LCC | ctx-rh-medialorbitofrontal | R-medORB | 0.23461768 | 0.02473386 |
| LCC | ctx-rh-middletemporal | R-midTEM | 0.17912316 | 0.02540408 |
| LCC | ctx-rh-parahippocampal | R-parHIP | 0.12363149 | 0.03826873 |
| LCC | ctx-rh-paracentral | R-parCEN | 0.29023368 | 0.03310488 |
| LCC | ctx-rh-parsopercularis | R-parOPE | 0.16609547 | 0.06591768 |
| LCC | ctx-rh-parsorbitalis | R-parORB | 0.13045692 | 0.02735672 |
| LCC | ctx-rh-parstriangularis | R-parTRI | 0.15679574 | 0.0566699 |
| LCC | ctx-rh-pericalcarine | R-perCAR | 0.11655808 | 0.04418457 |
| LCC | ctx-rh-postcentral | R-posCEN | 0.18580708 | 0.03635432 |
| LCC | ctx-rh-posteriorcingulate | R-posCIN | 0.1326434 | 0.03900991 |
| LCC | ctx-rh-precentral | R-preCEN | 0.18424626 | 0.09690667 |
| LCC | ctx-rh-precuneus | R-preCUN | 0.12113881 | 0.07025331 |
| LCC | ctx-rh-rostralanteriorcingulate | R-rosACG | 0.23902214 | 0.11450339 |
| LCC | ctx-rh-rostralmiddlefrontal | R-rosMFR | 0.10842206 | 0.04293403 |
| LCC | ctx-rh-superiorfrontal | R-supFRO | 0.20832068 | 0.0372779 |
| LCC | ctx-rh-superiorparietal | R-supPAR | 0.11013535 | 0.03973776 |
| LCC | ctx-rh-superiortemporal | R-supTEM | 0.13948605 | 0.03275478 |
| LCC | ctx-rh-supramarginal | R-supMAR | 0.11388066 | 0.0966321 |
| LCC | ctx-rh-frontalpole | R-froPOL | 0.12191341 | 0.03370643 |
| LCC | ctx-rh-temporalpole | R-temPOL | 0.17797268 | 0.02543795 |
| LCC | ctx-rh-transversetemporal | R-traTEM | 0.22563626 | 0.08925254 |
| LCC | ctx-rh-insula | R-insula | 0.1731277 | 0.03948812 |

Table S10. Bayes factor analysis looking at network differences between MDD cases with and without antidepressant use in UKB. For the model, we used network measures as the dependent variable, antidepressant use as the grouping factor, and age and sex as covariates. This model was compared to a null model, which also included age and sex as covariates, to derive BF10. To aid comparison, rows highlighted in yellow represent measures that were significantly different between cases and controls in the discovery cohort (UKB) in the main analysis.

Note: Briefly, in comparing the alternative hypothesis to the null hypothesis (BF10), a BF10 of value *X* would mean that the data are *X* times more likely under the alternative hypothesis than under the null. To determine the strength of evidence, we used the suggested reference values, where BF10>3 can be interpreted as being roughly similar to p<0.05. BF10<1/3 would suggest moderate evidence for the absence of an effect, 1/3<BF10<3 would suggest absence of evidence (i.e., study not informative enough), and BF10>3 would suggest moderate evidence for the presence of an effect (Keysers, Gazzola & Wagenmakers, 2020).

The results show that majority of the measures had BF10 below 1 (i.e., less likely to occur as compared to the null) and fall under the category of BF10<1/3 and even BF10<1/10, suggesting moderate and strong evidence for the absence of effect, respectively. However, a considerable number of variables also fall under the category of absence of evidence, and even some under the category of evidence of effect. However, we would like to highlight that the analysis between MDD cases not on antidepressant use and controls had highly consistent results with the main findings (rs=0.934, p<0.001), thus showing that our main findings are unlikely to be driven by the effects of antidepressants.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **measure** | **region** | **abb** | **BF10** | **BF10\_error** |
| GEFF | Global |  | 0.51659083 | 0.02731845 |
| TIER\_LNEF | T1 |  | 0.33084819 | 0.03721299 |
| TIER\_LNEF | T2 |  | 0.54014859 | 0.03183695 |
| TIER\_LNEF | T3 |  | 0.59135881 | 0.03416457 |
| TIER\_LNEF | T4 |  | 0.45241506 | 0.05773054 |
| LNEF | Left-Thalamus-Proper | L-thal | 1.12844966 | 0.04015115 |
| LNEF | Left-Caudate | L-caud | 0.1700984 | 0.03347781 |
| LNEF | Left-Putamen | L-puta | 0.20179169 | 0.04773076 |
| LNEF | Left-Pallidum | L-pall | 0.14464577 | 0.07251843 |
| LNEF | Brain-Stem | bSTEM | 0.13112779 | 0.01763863 |
| LNEF | Left-Hippocampus | L-hipp | 0.16960088 | 0.01981275 |
| LNEF | Left-Amygdala | L-amyg | 0.11692364 | 0.04393909 |
| LNEF | Left-Accumbens-area | L-accu | 0.42391597 | 0.02958313 |
| LNEF | Left-VentralDC | L-venDC | 0.10931274 | 0.02341447 |
| LNEF | Right-Thalamus-Proper | R-thal | 0.28657252 | 0.02648195 |
| LNEF | Right-Caudate | R-caud | 0.25047049 | 0.02488406 |
| LNEF | Right-Putamen | R-puta | 0.23411908 | 0.08555397 |
| LNEF | Right-Pallidum | R-pall | 0.08948262 | 0.02332008 |
| LNEF | Right-Hippocampus | R-hipp | 0.08099524 | 0.03530827 |
| LNEF | Right-Amygdala | R-amyg | 0.08424015 | 0.02804033 |
| LNEF | Right-Accumbens-area | R-accu | 2.24901355 | 0.01959196 |
| LNEF | Right-VentralDC | R-venDC | 0.1539964 | 0.06860288 |
| LNEF | ctx-lh-bankssts | L-banks | 0.2308982 | 0.03439726 |
| LNEF | ctx-lh-caudalanteriorcingulate | L-cauACG | 0.23609535 | 0.02194809 |
| LNEF | ctx-lh-caudalmiddlefrontal | L-cauMFR | 0.12582514 | 0.04184666 |
| LNEF | ctx-lh-cuneus | L-cune | 0.57814853 | 0.03004241 |
| LNEF | ctx-lh-entorhinal | L-entorh | 0.09625934 | 0.03051983 |
| LNEF | ctx-lh-fusiform | L-fusif | 3.68932129 | 0.01696132 |
| LNEF | ctx-lh-inferiorparietal | L-infPAR | 0.37360268 | 0.03357381 |
| LNEF | ctx-lh-inferiortemporal | L-infTEM | 0.95817845 | 0.0437011 |
| LNEF | ctx-lh-isthmuscingulate | L-istCIN | 0.13686292 | 0.25855551 |
| LNEF | ctx-lh-lateraloccipital | L-latOCC | 0.67581537 | 0.03133219 |
| LNEF | ctx-lh-lateralorbitofrontal | L-latORB | 5.73534481 | 0.05854164 |
| LNEF | ctx-lh-lingual | L-lingual | 0.11487866 | 0.02482856 |
| LNEF | ctx-lh-medialorbitofrontal | L-medORB | 0.30089707 | 0.0413005 |
| LNEF | ctx-lh-middletemporal | L-midTEM | 0.43019205 | 0.01848759 |
| LNEF | ctx-lh-parahippocampal | L-parHIP | 0.30771851 | 0.02752576 |
| LNEF | ctx-lh-paracentral | L-parCEN | 0.20222502 | 0.03511604 |
| LNEF | ctx-lh-parsopercularis | L-parOPE | 0.13821857 | 0.0203937 |
| LNEF | ctx-lh-parsorbitalis | L-parORB | 0.45997552 | 0.06813927 |
| LNEF | ctx-lh-parstriangularis | L-parTRI | 0.07622113 | 0.10428335 |
| LNEF | ctx-lh-pericalcarine | L-perCAR | 0.28485809 | 0.0273292 |
| LNEF | ctx-lh-postcentral | L-posCEN | 0.48399931 | 0.01917721 |
| LNEF | ctx-lh-posteriorcingulate | L-posCIN | 0.55420687 | 0.04562344 |
| LNEF | ctx-lh-precentral | L-preCEN | 0.41920897 | 0.04891265 |
| LNEF | ctx-lh-precuneus | L-preCUN | 0.18996549 | 0.04479445 |
| LNEF | ctx-lh-rostralanteriorcingulate | L-rosACG | 0.07733936 | 0.04374407 |
| LNEF | ctx-lh-rostralmiddlefrontal | L-rosMFR | 0.10760079 | 0.04565695 |
| LNEF | ctx-lh-superiorfrontal | L-supFRO | 0.11713873 | 0.02790567 |
| LNEF | ctx-lh-superiorparietal | L-supPAR | 0.15851528 | 0.05117136 |
| LNEF | ctx-lh-superiortemporal | L-supTEM | 0.260148 | 0.02861393 |
| LNEF | ctx-lh-supramarginal | L-supMAR | 0.20227416 | 0.01948296 |
| LNEF | ctx-lh-frontalpole | L-froPOL | 0.17760096 | 0.03968224 |
| LNEF | ctx-lh-temporalpole | L-temPOL | 0.27636565 | 0.03364887 |
| LNEF | ctx-lh-transversetemporal | L-traTEM | 1.16806585 | 0.0300553 |
| LNEF | ctx-lh-insula | L-insula | 1.31249723 | 0.03704653 |
| LNEF | ctx-rh-bankssts | R-banks | 0.13841653 | 0.06422881 |
| LNEF | ctx-rh-caudalanteriorcingulate | R-cauACG | 5.26705751 | 0.02295781 |
| LNEF | ctx-rh-caudalmiddlefrontal | R-cauMFR | 0.10285205 | 0.04521328 |
| LNEF | ctx-rh-cuneus | R-cune | 0.78536767 | 0.02530346 |
| LNEF | ctx-rh-entorhinal | R-entorh | 0.11878727 | 0.07317349 |
| LNEF | ctx-rh-fusiform | R-fusif | 0.15460731 | 0.02243272 |
| LNEF | ctx-rh-inferiorparietal | R-infPAR | 0.10494441 | 0.02463602 |
| LNEF | ctx-rh-inferiortemporal | R-infTEM | 0.22486544 | 0.01733734 |
| LNEF | ctx-rh-isthmuscingulate | R-istCIN | 2.83755487 | 0.03519937 |
| LNEF | ctx-rh-lateraloccipital | R-latOCC | 2.16625294 | 0.04024875 |
| LNEF | ctx-rh-lateralorbitofrontal | R-latORB | 0.11913321 | 0.07917363 |
| LNEF | ctx-rh-lingual | R-lingual | 0.11631546 | 0.02687188 |
| LNEF | ctx-rh-medialorbitofrontal | R-medORB | 0.12739844 | 0.04490671 |
| LNEF | ctx-rh-middletemporal | R-midTEM | 0.12583033 | 0.07926122 |
| LNEF | ctx-rh-parahippocampal | R-parHIP | 0.1022401 | 0.05642382 |
| LNEF | ctx-rh-paracentral | R-parCEN | 0.72593183 | 0.02915285 |
| LNEF | ctx-rh-parsopercularis | R-parOPE | 0.23833951 | 0.02241006 |
| LNEF | ctx-rh-parsorbitalis | R-parORB | 0.21289438 | 0.05619676 |
| LNEF | ctx-rh-parstriangularis | R-parTRI | 0.30018594 | 0.10872929 |
| LNEF | ctx-rh-pericalcarine | R-perCAR | 0.66898388 | 0.06647589 |
| LNEF | ctx-rh-postcentral | R-posCEN | 0.14806922 | 0.05719865 |
| LNEF | ctx-rh-posteriorcingulate | R-posCIN | 1.02948256 | 0.06285358 |
| LNEF | ctx-rh-precentral | R-preCEN | 0.14467343 | 0.02042506 |
| LNEF | ctx-rh-precuneus | R-preCUN | 0.22206458 | 0.04662745 |
| LNEF | ctx-rh-rostralanteriorcingulate | R-rosACG | 0.23998594 | 0.0238111 |
| LNEF | ctx-rh-rostralmiddlefrontal | R-rosMFR | 0.24530232 | 0.01978748 |
| LNEF | ctx-rh-superiorfrontal | R-supFRO | 0.19240971 | 0.02898439 |
| LNEF | ctx-rh-superiorparietal | R-supPAR | 0.08772746 | 0.03210656 |
| LNEF | ctx-rh-superiortemporal | R-supTEM | 0.42679911 | 0.09059185 |
| LNEF | ctx-rh-supramarginal | R-supMAR | 0.37916171 | 0.03456918 |
| LNEF | ctx-rh-frontalpole | R-froPOL | 0.08752916 | 0.02084906 |
| LNEF | ctx-rh-temporalpole | R-temPOL | 0.08616067 | 0.02132094 |
| LNEF | ctx-rh-transversetemporal | R-traTEM | 0.79529523 | 0.02620074 |
| LNEF | ctx-rh-insula | R-insula | 0.98695961 | 0.03078779 |
| GCC | Global |  | 0.10537334 | 0.02083691 |
| TIER\_LCC | T4 |  | 0.11304725 | 0.01840815 |
| TIER\_LCC | T1 |  | 0.13562455 | 0.01959982 |
| TIER\_LCC | T2 |  | 0.09055637 | 0.10003995 |
| TIER\_LCC | T3 |  | 0.09098258 | 0.02674643 |
| LCC | Left-Thalamus-Proper | L-thal | 0.07612428 | 0.06707713 |
| LCC | Left-Caudate | L-caud | 0.08390641 | 0.03912916 |
| LCC | Left-Putamen | L-puta | 0.09174775 | 0.08127935 |
| LCC | Left-Pallidum | L-pall | 0.08666992 | 0.01985115 |
| LCC | Brain-Stem | bSTEM | 0.08148073 | 0.01978652 |
| LCC | Left-Hippocampus | L-hipp | 0.09656095 | 0.0534517 |
| LCC | Left-Amygdala | L-amyg | 0.08830678 | 0.03716608 |
| LCC | Left-Accumbens-area | L-accu | 0.18026791 | 0.01836676 |
| LCC | Left-VentralDC | L-venDC | 0.09103072 | 0.02197416 |
| LCC | Right-Thalamus-Proper | R-thal | 0.07597372 | 0.02717488 |
| LCC | Right-Caudate | R-caud | 0.26959095 | 0.10662872 |
| LCC | Right-Putamen | R-puta | 0.126177 | 0.04214453 |
| LCC | Right-Pallidum | R-pall | 0.16738595 | 0.02972443 |
| LCC | Right-Hippocampus | R-hipp | 0.33712385 | 0.03637027 |
| LCC | Right-Amygdala | R-amyg | 0.08150796 | 0.08810541 |
| LCC | Right-Accumbens-area | R-accu | 7.94184058 | 0.17175212 |
| LCC | Right-VentralDC | R-venDC | 0.21878459 | 0.04229412 |
| LCC | ctx-lh-bankssts | L-banks | 0.08432898 | 0.02896968 |
| LCC | ctx-lh-caudalanteriorcingulate | L-cauACG | 0.09211549 | 0.06662343 |
| LCC | ctx-lh-caudalmiddlefrontal | L-cauMFR | 0.08192273 | 0.02124155 |
| LCC | ctx-lh-cuneus | L-cune | 0.08474095 | 0.03185455 |
| LCC | ctx-lh-entorhinal | L-entorh | 0.08318074 | 0.03014179 |
| LCC | ctx-lh-fusiform | L-fusif | 0.09793358 | 0.20898445 |
| LCC | ctx-lh-inferiorparietal | L-infPAR | 0.08330766 | 0.05889723 |
| LCC | ctx-lh-inferiortemporal | L-infTEM | 0.08110197 | 0.06326355 |
| LCC | ctx-lh-isthmuscingulate | L-istCIN | 0.56097404 | 0.02658327 |
| LCC | ctx-lh-lateraloccipital | L-latOCC | 0.09239657 | 0.03992808 |
| LCC | ctx-lh-lateralorbitofrontal | L-latORB | 0.12731975 | 0.03709617 |
| LCC | ctx-lh-lingual | L-lingual | 23.8704701 | 0.01760166 |
| LCC | ctx-lh-medialorbitofrontal | L-medORB | 0.16413365 | 0.02368031 |
| LCC | ctx-lh-middletemporal | L-midTEM | 0.0819485 | 0.05839175 |
| LCC | ctx-lh-parahippocampal | L-parHIP | 0.80832376 | 0.26584348 |
| LCC | ctx-lh-paracentral | L-parCEN | 0.08628796 | 0.07155319 |
| LCC | ctx-lh-parsopercularis | L-parOPE | 0.1152226 | 0.01973289 |
| LCC | ctx-lh-parsorbitalis | L-parORB | 0.09434836 | 0.03149267 |
| LCC | ctx-lh-parstriangularis | L-parTRI | 0.10586626 | 0.13601887 |
| LCC | ctx-lh-pericalcarine | L-perCAR | 0.19773735 | 0.02660659 |
| LCC | ctx-lh-postcentral | L-posCEN | 0.0873558 | 0.02927382 |
| LCC | ctx-lh-posteriorcingulate | L-posCIN | 0.08943677 | 0.02599637 |
| LCC | ctx-lh-precentral | L-preCEN | 0.09063304 | 0.03771244 |
| LCC | ctx-lh-precuneus | L-preCUN | 0.09334888 | 0.03171153 |
| LCC | ctx-lh-rostralanteriorcingulate | L-rosACG | 0.09021436 | 0.0359107 |
| LCC | ctx-lh-rostralmiddlefrontal | L-rosMFR | 0.12097025 | 0.0300524 |
| LCC | ctx-lh-superiorfrontal | L-supFRO | 0.08864277 | 0.08655403 |
| LCC | ctx-lh-superiorparietal | L-supPAR | 0.09051392 | 0.02110573 |
| LCC | ctx-lh-superiortemporal | L-supTEM | 0.12046357 | 0.03712691 |
| LCC | ctx-lh-supramarginal | L-supMAR | 0.08778446 | 0.0309568 |
| LCC | ctx-lh-frontalpole | L-froPOL | 0.0979122 | 0.03054582 |
| LCC | ctx-lh-temporalpole | L-temPOL | 0.16726512 | 0.10302688 |
| LCC | ctx-lh-transversetemporal | L-traTEM | 0.09302018 | 0.02871877 |
| LCC | ctx-lh-insula | L-insula | 0.31992494 | 0.02672149 |
| LCC | ctx-rh-bankssts | R-banks | 0.26506076 | 0.03852671 |
| LCC | ctx-rh-caudalanteriorcingulate | R-cauACG | 0.34092352 | 0.15497107 |
| LCC | ctx-rh-caudalmiddlefrontal | R-cauMFR | 0.33782663 | 0.0188864 |
| LCC | ctx-rh-cuneus | R-cune | 0.10490085 | 0.01906464 |
| LCC | ctx-rh-entorhinal | R-entorh | 0.0998781 | 0.03317983 |
| LCC | ctx-rh-fusiform | R-fusif | 0.16378646 | 0.02204565 |
| LCC | ctx-rh-inferiorparietal | R-infPAR | 0.09440326 | 0.14017076 |
| LCC | ctx-rh-inferiortemporal | R-infTEM | 0.15525881 | 0.03503535 |
| LCC | ctx-rh-isthmuscingulate | R-istCIN | 0.08196783 | 0.03044492 |
| LCC | ctx-rh-lateraloccipital | R-latOCC | 0.17639361 | 0.07034082 |
| LCC | ctx-rh-lateralorbitofrontal | R-latORB | 0.0798884 | 0.06336161 |
| LCC | ctx-rh-lingual | R-lingual | 1.55499751 | 0.02529382 |
| LCC | ctx-rh-medialorbitofrontal | R-medORB | 0.09024026 | 0.03795262 |
| LCC | ctx-rh-middletemporal | R-midTEM | 0.08927574 | 0.02817434 |
| LCC | ctx-rh-parahippocampal | R-parHIP | 0.07905559 | 0.02099929 |
| LCC | ctx-rh-paracentral | R-parCEN | 0.12625182 | 0.02961629 |
| LCC | ctx-rh-parsopercularis | R-parOPE | 0.08854862 | 0.05643596 |
| LCC | ctx-rh-parsorbitalis | R-parORB | 0.13218257 | 0.03296867 |
| LCC | ctx-rh-parstriangularis | R-parTRI | 0.08307117 | 0.03694569 |
| LCC | ctx-rh-pericalcarine | R-perCAR | 0.07897337 | 0.04939035 |
| LCC | ctx-rh-postcentral | R-posCEN | 0.12195295 | 0.03075111 |
| LCC | ctx-rh-posteriorcingulate | R-posCIN | 0.14785382 | 0.03386091 |
| LCC | ctx-rh-precentral | R-preCEN | 0.16836323 | 0.15055524 |
| LCC | ctx-rh-precuneus | R-preCUN | 0.08344151 | 0.02541291 |
| LCC | ctx-rh-rostralanteriorcingulate | R-rosACG | 0.17358415 | 0.03971958 |
| LCC | ctx-rh-rostralmiddlefrontal | R-rosMFR | 0.15719158 | 0.0457432 |
| LCC | ctx-rh-superiorfrontal | R-supFRO | 0.11006605 | 0.02687783 |
| LCC | ctx-rh-superiorparietal | R-supPAR | 0.11442108 | 0.02684386 |
| LCC | ctx-rh-superiortemporal | R-supTEM | 0.07805659 | 0.02358742 |
| LCC | ctx-rh-supramarginal | R-supMAR | 0.10022813 | 0.01977657 |
| LCC | ctx-rh-frontalpole | R-froPOL | 0.12180699 | 0.02852578 |
| LCC | ctx-rh-temporalpole | R-temPOL | 0.11433383 | 0.07403618 |
| LCC | ctx-rh-transversetemporal | R-traTEM | 0.10836511 | 0.02498548 |
| LCC | ctx-rh-insula | R-insula | 0.08814204 | 0.04975702 |

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