Brain Structure in Chronic Pain and Depression Supplementary Material

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# 1. Supplementary Methods

## 1.1. Neurological disorders excluded

Neurological disorder status was determined based on self-reported illnesses recorded in UK Biobank data fields 20001 and 20002.

| Disorder | Data.field |
| --- | --- |
| Benign neuroma | 1683 |
| Brain abscess/intracranial abscess | 1245 |
| Brain haemorrhage | 1491 |
| Cerebral aneurysm | 1425 |
| Cerebral palsy | 1433 |
| Chronic/degenerative neurological problem | 1258 |
| dementia/alzheimers/cognitive impairment | 1263 |
| Encephalitis | 1246 |
| Epilepsy | 1264 |
| Fracture skull/head | 1626 |
| Head injury | 1266 |
| Ischaemic stroke | 1583 |
| Meningitis | 1247 |
| Motor Neurone Disease | 1259 |
| Multiple Sclerosis | 1261 |
| Nervous system infection | 1244 |
| Neurological injury/trauma | 1240 |
| Other demyelinating disease (not Multiple Sclerosis) | 1397 |
| Other neurological problem | 1434 |
| Parkinson’s Disease | 1262 |
| Spina Bifida | 1524 |
| Stroke | 1081 |
| Subarachnoid haemorrhage | 1086 |
| Subdural haemorrhage/haematoma | 1083 |
| Transient ischaemic attack | 1082 |
| Meningioma/benign meningeal tumour | 1659 |

Supplementary Table 1 Non-cancer neurological conditions excluded for based on data field 20002.

| Disorder | Data.field |
| --- | --- |
| Brain cancer/primary malignant brain tumour | 1032 |
| Meningeal cancer/malignant meningioma | 1031 |

Supplementary Table 2 Cancer neurological conditions excluded for based on data field 20001.

## 1.2. Brain structures full details

Measures of cortical volume, thickness and surface area in UK Biobank

| Cortical Region | Lobe |
| --- | --- |
| superior frontal gyrus | frontal |
| rostral middle frontal | frontal |
| caudal middle frontal | frontal |
| pars orbitalis | frontal |
| pars triangularis | frontal |
| pars opercularis | frontal |
| frontal pole | frontal |
| lateral orbitofrontal | frontal |
| precentral gyrus | frontal |
| paracentral cortex | frontal |
| insula | temporal |
| superior temporal | temporal |
| transverse temporal | temporal |
| banks STS | temporal |
| middle temporal gyrus | temporal |
| iferior temporal gyrus | temporal |
| fusiform | temporal |
| parahippocampal | temporal |
| entorhinal | temporal |
| postcentral gyrus | parietal |
| paracentral cortex | parietal |
| superior parietal cortex | parietal |
| inferior parietal cortex | parietal |
| supramarginal gyrus | parietal |
| precuneus | parietal |
| lateral occipital cortex | occipital |
| cuneus | occipital |
| pericalcarine cortex | occipital |
| lingual gyrus | occipital |
| rostral ACC | cingulate |
| caudal ACC | cingulate |
| posterior cingulate cortex | cingulate |
| cingulate isthmus | cingulate |

Supplementary Table 3 Cortical regions in UK Biobank and cortical lobes derived from “Desikan-Killiany-Tourville” atlas

| Subcortical Region |
| --- |
| thalamus |
| caudate |
| putamen |
| pallidum |
| hippocampus |
| amygdala |
| accumbens |

Supplementary Table 4 Subcortical volumes in UK Biobank derived using FIRST (FMRIB’s Integrated Registration and Segmentation Tool)

| White Matter Tract | General Measure |
| --- | --- |
| cingulate gyrus part of cingulum | association fibre |
| inferior fronto-occipital fasciculus | association fibre |
| inferior longitudinal fasciculus | association fibre |
| parahippocampal part of cingulum | association fibre |
| superior longitudinal fasciculus | association fibre |
| uncinate fasciculus | association fibre |
| forceps major | association fibre |
| forceps minor | association fibre |
| anterior thalamic radiation | thalamic radiations |
| posterior thalamic radiation | thalamic radiations |
| superior thalamic radiation | thalamic radiations |
| acoustic radiation | projection fibres |
| corticospinal tract | projection fibres |
| medial lemniscus | projection fibres |
| middle cerebellar peduncle | projection fibres |

Supplementary Table 5 White matter tracts in UK Biobank and general measures derived using AutoPtx.

| White Matter General Measures | Variance Explained |
| --- | --- |
| MD global | 0.438 |
| MD association fibres | 0.487 |
| MD projection fibres | 0.397 |
| MD thalamic associations | 0.739 |
| FA global | 0.415 |
| FA association fibres | 0.467 |
| FA projection fibres | 0.455 |
| FA thalamic associations | 0.651 |

Supplementary Table 6 Variance explained by the first principal component analysis (PCA) component for each global and general measure of white matter tracts.

## 2. Supplementary Results

### 2.1. Full results from analysis

| Brain Strucutre Phenotype | Full Sample Beta | Sex Interaction (Males - Females) | Female Sample Beta | Male Sample Beta |
| --- | --- | --- | --- | --- |
| Subcortical volume of accumbens | -0.005 | 0.013 |  |  |
| Subcortical volume of amygdala | -0.006 | **0.033\*** | -0.021 |  |
| Subcortical volume of amygdala left |  |  |  | 0.019 |
| Subcortical volume of amygdala right |  |  |  | 0.001 |
| Subcortical volume of caudate | **0.031\*\*** | -0.004 |  |  |
| Subcortical volume of hippocampus | -0.006 | 0.032 |  |  |
| Subcortical volume of pallidum | 0.013 | -0.02 |  |  |
| Subcortical volume of putamen | -0.001 | -0.019 |  |  |
| Subcortical volume of thalamus | 0.011 | 0.005 |  |  |
| Volume of bankssts | **-0.021\*** | 0.015 |  |  |
| Volume of caudalanteriorcingulate | -0.013 | 0.019 |  |  |
| Volume of caudalmiddlefrontal | -0.01 | -0.001 |  |  |
| Volume of cuneus | 0.009 | 0 |  |  |
| Volume of entorhinal | -0.011 | -0.006 |  |  |
| Volume of frontalpole | **-0.025\*\*** | -0.022 |  |  |
| Volume of fusiform | **-0.026\*\*** | 0.023 |  |  |
| Volume of inferiorparietal | **-0.022\*\*** | -0.014 |  |  |
| Volume of inferiortemporal | **-0.033\*\*\*** | -0.006 |  |  |
| Volume of insula | **-0.035\*\*\*** | -0.011 |  |  |
| Volume of isthmuscingulate | -0.004 | 0.01 |  |  |
| Volume of lateraloccipital | -0.006 | 0.003 |  |  |
| Volume of lateralorbitofrontal | -0.012 | 0.009 |  |  |
| Volume of lingual | 0.006 | 0.001 |  |  |
| Volume of medialorbitofrontal | **-0.033\*\*\*** | 0.01 |  |  |
| Volume of middletemporal | **-0.025\*\*** | 0.01 |  |  |
| Volume of paracentral | **-0.018\*** | 0.027 |  |  |
| Volume of parahippocampal | -0.01 | -0.003 |  |  |
| Volume of parsopercularis | **-0.026\*\*** | -0.006 |  |  |
| Volume of parsorbitalis | 0.012 | 0.012 |  |  |
| Volume of parstriangularis | -0.013 | 0 |  |  |
| Volume of pericalcarine | 0.007 | 0.006 |  |  |
| Volume of postcentral | **-0.042\*\*\*** | 0.006 |  |  |
| Volume of posteriorcingulate | **-0.037\*\*\*** | 0.021 |  |  |
| Volume of precentral | **-0.018\*** | 0.013 |  |  |
| Volume of precuneus | 0.003 | 0.008 |  |  |
| Volume of rostralanteriorcingulate | **-0.033\*\*\*** | **0.038\*\*** |  |  |
| Volume of rostralanteriorcingulate left |  |  | **-0.051\*\*\*** | -0.018 |
| Volume of rostralanteriorcingulate right |  |  | **-0.05\*\*\*** | -0.007 |
| Volume of rostralmiddlefrontal | -0.007 | 0.009 |  |  |
| Volume of superiorfrontal | **-0.017\*** | 0.002 |  |  |
| Volume of superiorparietal | 0.004 | -0.003 |  |  |
| Volume of superiortemporal | **-0.019\*** | 0.012 |  |  |
| Volume of supramarginal | **-0.016\*** | 0.009 |  |  |
| Volume of transversetemporal | **-0.022\*** | -0.022 |  |  |
| Volume of cingulate lobe | **-0.034\*\*\*** | **0.036\*** | **-0.05\*\*\*** | -0.015 |
| Volume of frontal lobe | **-0.019\*\*** | 0.008 |  |  |
| Volume of global cortical | **-0.023\*\*\*** | 0.008 |  |  |
| Volume of occipital lobe | 0.001 | 0.003 |  |  |
| Volume of parietal lobe | **-0.019\*\*** | 0.002 |  |  |
| Volume of temporal lobe | **-0.034\*\*\*** | 0.008 |  |  |
| Area of bankssts | **-0.021\*** | 0.018 |  |  |
| Area of caudalanteriorcingulate | -0.011 | 0.016 |  |  |
| Area of caudalmiddlefrontal | -0.012 | -0.001 |  |  |
| Area of cuneus | 0.007 | 0.008 |  |  |
| Area of entorhinal | -0.008 | 0.015 |  |  |
| Area of frontalpole | -0.007 | -0.012 |  |  |
| Area of fusiform | **-0.027\*\*\*** | 0.018 |  |  |
| Area of inferiorparietal | **-0.027\*\*\*** | -0.003 |  |  |
| Area of inferiortemporal | **-0.032\*\*\*** | -0.003 |  |  |
| Area of insula | **-0.018\*** | -0.009 |  |  |
| Area of isthmuscingulate | 0.001 | 0.012 |  |  |
| Area of lateraloccipital | -0.013 | 0.008 |  |  |
| Area of lateralorbitofrontal | -0.012 | 0.019 |  |  |
| Area of lingual | -0.008 | 0.009 |  |  |
| Area of medialorbitofrontal | **-0.019\*\*** | 0.003 |  |  |
| Area of middletemporal | **-0.028\*\*\*** | 0.011 |  |  |
| Area of paracentral | -0.008 | 0.011 |  |  |
| Area of parahippocampal | -0.003 | -0.001 |  |  |
| Area of parsopercularis | **-0.025\*\*** | -0.011 |  |  |
| Area of parsorbitalis | 0.002 | 0.017 |  |  |
| Area of parstriangularis | -0.014 | 0.001 |  |  |
| Area of pericalcarine | -0.001 | -0.004 |  |  |
| Area of postcentral | **-0.044\*\*\*** | 0.004 |  |  |
| Area of posteriorcingulate | **-0.026\*\*\*** | 0.015 |  |  |
| Area of precentral | **-0.016\*** | -0.002 |  |  |
| Area of precuneus | -0.015 | 0.027 |  |  |
| Area of rostralanteriorcingulate | **-0.027\*\*\*** | 0.022 |  |  |
| Area of rostralmiddlefrontal | -0.009 | 0.01 |  |  |
| Area of superiorfrontal | **-0.019\*\*** | -0.004 |  |  |
| Area of superiorparietal | -0.014 | -0.005 |  |  |
| Area of superiortemporal | -0.013 | 0.008 |  |  |
| Area of supramarginal | **-0.021\*\*** | 0.012 |  |  |
| Area of transversetemporal | -0.015 | -0.023 |  |  |
| Area of cingulate lobe | **-0.022\*\*** | 0.022 |  |  |
| Area of frontal lobe | **-0.02\*\*\*** | 0.002 |  |  |
| Area of global cortical | **-0.024\*\*\*** | 0.007 |  |  |
| Area of occipital lobe | -0.008 | 0.008 |  |  |
| Area of parietal lobe | **-0.029\*\*\*** | 0.008 |  |  |
| Area of temporal lobe | **-0.026\*\*\*** | 0.008 |  |  |
| Thickness of bankssts | -0.005 | -0.007 |  |  |
| Thickness of caudalanteriorcingulate | -0.007 | 0.011 |  |  |
| Thickness of caudalmiddlefrontal | 0.004 | -0.003 |  |  |
| Thickness of cuneus | 0.01 | -0.016 |  |  |
| Thickness of entorhinal | 0.001 | -0.017 |  |  |
| Thickness of frontalpole | -0.022 | -0.021 |  |  |
| Thickness of fusiform | -0.01 | 0.008 |  |  |
| Thickness of inferiorparietal | 0.012 | -0.023 |  |  |
| Thickness of inferiortemporal left | -0.024 | 0.004 |  |  |
| Thickness of inferiortemporal right | 0.009 | -0.008 |  |  |
| Thickness of insula | **-0.029\*** | 0.001 |  |  |
| Thickness of isthmuscingulate | -0.016 | -0.018 |  |  |
| Thickness of lateraloccipital | 0.011 | -0.003 |  |  |
| Thickness of lateralorbitofrontal | -0.001 | -0.013 |  |  |
| Thickness of lingual | 0.015 | -0.01 |  |  |
| Thickness of medialorbitofrontal | -0.023 | 0.027 |  |  |
| Thickness of middletemporal | -0.002 | 0.016 |  |  |
| Thickness of paracentral | -0.007 | 0.022 |  |  |
| Thickness of parahippocampal | -0.015 | -0.005 |  |  |
| Thickness of parsopercularis | -0.009 | 0.012 |  |  |
| Thickness of parsorbitalis | 0.015 | -0.004 |  |  |
| Thickness of parstriangularis | 0.001 | -0.01 |  |  |
| Thickness of pericalcarine | 0.017 | 0.007 |  |  |
| Thickness of postcentral | -0.01 | 0.001 |  |  |
| Thickness of posteriorcingulate | **-0.025\*** | 0.017 |  |  |
| Thickness of precentral | -0.001 | 0.012 |  |  |
| Thickness of precuneus | **0.034\*\*** | -0.036 |  |  |
| Thickness of rostralanteriorcingulate | -0.018 | **0.046\*\*** |  |  |
| Thickness of rostralanteriorcingulate left |  |  | **-0.052\*\*\*** | 0.006 |
| Thickness of rostralanteriorcingulate right |  |  | -0.027 | 0.007 |
| Thickness of rostralmiddlefrontal | 0.002 | -0.006 |  |  |
| Thickness of superiorfrontal | 0.004 | 0.007 |  |  |
| Thickness of superiorparietal | **0.039\*\*** | -0.013 |  |  |
| Thickness of superiortemporal | -0.014 | 0.01 |  |  |
| Thickness of supramarginal | 0.009 | -0.011 |  |  |
| Thickness of transversetemporal | -0.015 | -0.001 |  |  |
| Thickness of cingulate lobe | **-0.028\*** | 0.023 |  |  |
| Thickness of frontal lobe | -0.002 | 0.006 |  |  |
| Thickness of global cortical | 0 | 0 |  |  |
| Thickness of occipital lobe | 0.015 | -0.005 |  |  |
| Thickness of parietal lobe | 0.019 | -0.016 |  |  |
| Thickness of temporal lobe | -0.021 | 0.006 |  |  |
| FA in acoustic radiation | 0.017 | -0.009 |  |  |
| FA in anterior thalamic radiation | -0.013 | 0.023 |  |  |
| FA in cingulate gyrus part of cingulum | 0.01 | 0.018 |  |  |
| FA in corticospinal tract | -0.004 | -0.006 |  |  |
| FA in forceps major | -0.005 | 0.004 |  |  |
| FA in forceps minor | -0.023 | 0 |  |  |
| FA in inferior fronto occipital fasciculus | -0.011 | 0.014 |  |  |
| FA in inferior longitudinal fasciculus | 0.006 | -0.002 |  |  |
| FA in medial lemniscus | -0.001 | -0.013 |  |  |
| FA in middle cerebellar peduncle | -0.009 | -0.01 |  |  |
| FA in parahippocampal part of cingulum | 0.016 | 0.012 |  |  |
| FA in posterior thalamic radiation | -0.011 | 0.001 |  |  |
| FA in superior longitudinal fasciculus | -0.013 | 0.02 |  |  |
| FA in superior thalamic radiation | 0.013 | 0.009 |  |  |
| FA in uncinate fasciculus | -0.002 | -0.004 |  |  |
| FA in association fibres | 0.001 | 0.013 |  |  |
| FA in global | -0.001 | 0.01 |  |  |
| FA in projection fibres | -0.001 | -0.011 |  |  |
| FA in thalamic radiations | -0.007 | 0.014 |  |  |
| MD in acoustic radiation left | 0.011 | 0.012 |  |  |
| MD in acoustic radiation right | -0.016 | 0.006 |  |  |
| MD in anterior thalamic radiation | 0.001 | -0.011 |  |  |
| MD in cingulate gyrus part of cingulum | -0.001 | 0.009 |  |  |
| MD in corticospinal tract | 0.008 | 0.008 |  |  |
| MD in forceps major | -0.008 | **0.042\*** | -0.027 | 0.015 |
| MD in forceps minor | -0.007 | -0.008 |  |  |
| MD in inferior fronto occipital fasciculus | -0.013 | 0.01 |  |  |
| MD in inferior longitudinal fasciculus | -0.015 | 0.004 |  |  |
| MD in medial lemniscus | -0.003 | 0 |  |  |
| MD in middle cerebellar peduncle | -0.016 | -0.003 |  |  |
| MD in parahippocampal part of cingulum | -0.005 | -0.005 |  |  |
| MD in posterior thalamic radiation | -0.008 | -0.01 |  |  |
| MD in superior longitudinal fasciculus | -0.001 | 0.002 |  |  |
| MD in superior thalamic radiation | 0.001 | -0.016 |  |  |
| MD in uncinate fasciculus | 0.008 | 0.009 |  |  |
| MD in association fibres | -0.005 | 0.009 |  |  |
| MD in global | -0.006 | 0 |  |  |
| MD in projection fibres | -0.013 | -0.003 |  |  |
| MD in thalamic radiations | -0.002 | -0.015 |  |  |

Supplementary Table 7 Full results for association and sex-interaction analysis between brain structure and chronic pain in full, female and male sample. \*, \*\* and \*\*\* represent significant results at pFDR<.05, pFDR<.01 and pFDR<.001, respectively (FDR correction not applied to p-values from sex-interaction analysis). Significant results are highlighted in bold.

| Brain Strucutre Phenotype | Full Sample Beta | Sex Interaction (Males - Females) | Female Sample Beta | Male Sample Beta |
| --- | --- | --- | --- | --- |
| Subcortical volume of accumbens | -0.01 | 0.04 |  |  |
| Subcortical volume of amygdala | 0.005 | -0.001 |  |  |
| Subcortical volume of caudate | **0.043\*\*** | -0.022 |  |  |
| Subcortical volume of hippocampus | 0.009 | 0.023 |  |  |
| Subcortical volume of pallidum | 0.011 | 0.026 |  |  |
| Subcortical volume of putamen | **0.029\*** | -0.005 |  |  |
| Subcortical volume of thalamus | **-0.027\*** | 0.029 |  |  |
| Volume of bankssts | -0.001 | -0.006 |  |  |
| Volume of caudalanteriorcingulate | 0.003 | -0.011 |  |  |
| Volume of caudalmiddlefrontal | 0.007 | 0.007 |  |  |
| Volume of cuneus | 0.001 | -0.006 |  |  |
| Volume of entorhinal | 0.014 | 0.002 |  |  |
| Volume of frontalpole | -0.016 | -0.025 |  |  |
| Volume of fusiform | -0.008 | 0.024 |  |  |
| Volume of inferiorparietal left | 0.004 | -0.03 |  |  |
| Volume of inferiorparietal right | -0.009 | -0.029 |  |  |
| Volume of inferiortemporal | -0.009 | -0.014 |  |  |
| Volume of insula | -0.016 | **-0.046\*** | 0.003 | **-0.042\*** |
| Volume of isthmuscingulate | 0.031 | 0.025 |  |  |
| Volume of lateraloccipital | 0.023 | **-0.059\*\*** | **0.047\*\*\*** | -0.013 |
| Volume of lateralorbitofrontal | 0 | -0.017 |  |  |
| Volume of lingual | 0.009 | -0.013 |  |  |
| Volume of medialorbitofrontal | -0.016 | 0 |  |  |
| Volume of middletemporal | -0.003 | 0.011 |  |  |
| Volume of paracentral | -0.003 | -0.036 |  |  |
| Volume of parahippocampal | 0.015 | -0.02 |  |  |
| Volume of parsopercularis | 0.002 | 0.009 |  |  |
| Volume of parsorbitalis | 0.01 | -0.027 |  |  |
| Volume of parstriangularis | 0 | -0.006 |  |  |
| Volume of pericalcarine | -0.008 | 0.014 |  |  |
| Volume of postcentral | 0.007 | -0.024 |  |  |
| Volume of posteriorcingulate | 0 | 0.016 |  |  |
| Volume of precentral | 0.001 | -0.022 |  |  |
| Volume of precuneus | 0.006 | -0.011 |  |  |
| Volume of rostralanteriorcingulate | 0.006 | 0.003 |  |  |
| Volume of rostralmiddlefrontal | -0.001 | 0.003 |  |  |
| Volume of superiorfrontal | -0.006 | 0.003 |  |  |
| Volume of superiorparietal | 0.01 | -0.035 |  |  |
| Volume of superiortemporal left | 0.002 | -0.026 |  |  |
| Volume of superiortemporal right | 0.027 | 0.01 |  |  |
| Volume of supramarginal left | -0.019 | 0.009 |  |  |
| Volume of supramarginal right | -0.006 | 0.009 |  |  |
| Volume of transversetemporal | 0.026 | -0.013 |  |  |
| Volume of cingulate lobe | 0.014 | 0.01 |  |  |
| Volume of frontal lobe | -0.002 | -0.006 |  |  |
| Volume of global cortical | 0.002 | -0.016 |  |  |
| Volume of occipital lobe | 0.015 | -0.037 |  |  |
| Volume of parietal lobe | 0.001 | -0.026 |  |  |
| Volume of temporal lobe | -0.001 | -0.007 |  |  |
| Area of bankssts | 0.003 | 0.009 |  |  |
| Area of caudalanteriorcingulate | 0.01 | 0.002 |  |  |
| Area of caudalmiddlefrontal | 0.006 | 0.013 |  |  |
| Area of cuneus | -0.004 | 0.011 |  |  |
| Area of entorhinal | 0.007 | 0.031 |  |  |
| Area of frontalpole | 0.006 | -0.007 |  |  |
| Area of fusiform | -0.001 | **0.046\*** |  |  |
| Area of fusiform left |  |  | -0.029 | 0.007 |
| Area of fusiform right |  |  | -0.009 | **0.048\*** |
| Area of inferiorparietal left | 0.01 | -0.007 |  |  |
| Area of inferiorparietal right | -0.006 | -0.012 |  |  |
| Area of inferiortemporal | -0.002 | 0.008 |  |  |
| Area of insula | 0 | -0.036 |  |  |
| Area of isthmuscingulate | 0.027 | 0.038 |  |  |
| Area of lateraloccipital | 0.018 | -0.026 |  |  |
| Area of lateralorbitofrontal | 0.004 | 0.007 |  |  |
| Area of lingual | -0.002 | 0.016 |  |  |
| Area of medialorbitofrontal | 0.001 | 0.023 |  |  |
| Area of middletemporal | 0.002 | 0.017 |  |  |
| Area of paracentral | 0 | -0.011 |  |  |
| Area of parahippocampal | 0.01 | 0.016 |  |  |
| Area of parsopercularis | 0.008 | 0.03 |  |  |
| Area of parsorbitalis | 0.011 | 0.013 |  |  |
| Area of parstriangularis | 0.002 | 0.003 |  |  |
| Area of pericalcarine | -0.017 | 0.03 |  |  |
| Area of postcentral | 0.007 | -0.006 |  |  |
| Area of posteriorcingulate | 0.003 | 0.029 |  |  |
| Area of precentral | -0.008 | -0.002 |  |  |
| Area of precuneus | 0.006 | 0.003 |  |  |
| Area of rostralanteriorcingulate | 0.019 | 0.017 |  |  |
| Area of rostralmiddlefrontal | 0.008 | 0.024 |  |  |
| Area of superiorfrontal | 0 | 0.007 |  |  |
| Area of superiorparietal | 0.005 | -0.013 |  |  |
| Area of superiortemporal | 0.019 | 0.006 |  |  |
| Area of supramarginal | -0.003 | 0.02 |  |  |
| Area of transversetemporal | 0.006 | 0.009 |  |  |
| Area of cingulate lobe | 0.021 | 0.031 |  |  |
| Area of frontal lobe | 0.003 | 0.016 |  |  |
| Area of global cortical | 0.006 | 0.01 |  |  |
| Area of occipital lobe | 0.004 | 0 |  |  |
| Area of parietal lobe | 0.004 | -0.003 |  |  |
| Area of temporal lobe | 0.009 | 0.013 |  |  |
| Thickness of bankssts | -0.01 | -0.028 |  |  |
| Thickness of caudalanteriorcingulate | -0.006 | -0.028 |  |  |
| Thickness of caudalmiddlefrontal | -0.001 | -0.008 |  |  |
| Thickness of cuneus | 0.013 | -0.042 |  |  |
| Thickness of entorhinal | 0.009 | -0.031 |  |  |
| Thickness of frontalpole | -0.022 | -0.019 |  |  |
| Thickness of fusiform | -0.009 | -0.03 |  |  |
| Thickness of inferiorparietal | -0.005 | -0.026 |  |  |
| Thickness of inferiortemporal | -0.012 | -0.041 |  |  |
| Thickness of insula | -0.024 | -0.002 |  |  |
| Thickness of isthmuscingulate | 0.009 | -0.022 |  |  |
| Thickness of lateraloccipital | 0.024 | **-0.081\*\*** | **0.056\*\*** | -0.026 |
| Thickness of lateralorbitofrontal | -0.004 | -0.036 |  |  |
| Thickness of lingual | 0.021 | -0.053 |  |  |
| Thickness of medialorbitofrontal | -0.016 | -0.036 |  |  |
| Thickness of middletemporal | -0.012 | -0.02 |  |  |
| Thickness of paracentral | -0.002 | -0.043 |  |  |
| Thickness of parahippocampal | 0.007 | -0.032 |  |  |
| Thickness of parsopercularis | -0.014 | -0.032 |  |  |
| Thickness of parsorbitalis | -0.001 | -0.052 |  |  |
| Thickness of parstriangularis | -0.014 | -0.025 |  |  |
| Thickness of pericalcarine | 0.014 | -0.027 |  |  |
| Thickness of postcentral | 0.002 | -0.022 |  |  |
| Thickness of posteriorcingulate | -0.009 | -0.025 |  |  |
| Thickness of precentral | 0.005 | -0.033 |  |  |
| Thickness of precuneus | 0.001 | -0.024 |  |  |
| Thickness of rostralanteriorcingulate | -0.013 | -0.033 |  |  |
| Thickness of rostralmiddlefrontal | -0.021 | -0.041 |  |  |
| Thickness of superiorfrontal | -0.016 | -0.003 |  |  |
| Thickness of superiorparietal | 0.018 | -0.031 |  |  |
| Thickness of superiortemporal | -0.002 | -0.022 |  |  |
| Thickness of supramarginal | -0.021 | -0.029 |  |  |
| Thickness of transversetemporal | 0.027 | -0.044 |  |  |
| Thickness of cingulate lobe | -0.009 | -0.045 |  |  |
| Thickness of frontal lobe | -0.012 | -0.033 |  |  |
| Thickness of global cortical | -0.004 | -0.042 |  |  |
| Thickness of occipital lobe | 0.03 | **-0.085\*\*** | **0.064\*\*\*** | -0.022 |
| Thickness of parietal lobe | -0.001 | -0.032 |  |  |
| Thickness of temporal lobe | -0.01 | -0.034 |  |  |
| FA in acoustic radiation | -0.026 | -0.007 |  |  |
| FA in anterior thalamic radiation | **-0.068\*\*\*** | 0.046 |  |  |
| FA in cingulate gyrus part of cingulum | -0.028 | 0.014 |  |  |
| FA in corticospinal tract | -0.022 | 0.015 |  |  |
| FA in forceps major | -0.032 | 0.018 |  |  |
| FA in forceps minor | **-0.046\*\*** | 0.027 |  |  |
| FA in inferior fronto occipital fasciculus | **-0.055\*\*\*** | 0.044 |  |  |
| FA in inferior longitudinal fasciculus | **-0.054\*\*\*** | 0.03 |  |  |
| FA in medial lemniscus | -0.019 | -0.02 |  |  |
| FA in middle cerebellar peduncle | -0.001 | 0.055 |  |  |
| FA in parahippocampal part of cingulum | -0.007 | 0.004 |  |  |
| FA in posterior thalamic radiation | **-0.078\*\*\*** | 0.039 |  |  |
| FA in superior longitudinal fasciculus | **-0.05\*\*** | 0.029 |  |  |
| FA in superior thalamic radiation | **-0.048\*\*** | 0.025 |  |  |
| FA in uncinate fasciculus | **-0.04\*\*** | 0.045 |  |  |
| FA in association fibres | **-0.053\*\*\*** | 0.035 |  |  |
| FA in global | **-0.061\*\*\*** | 0.038 |  |  |
| FA in projection fibres | **-0.031\*** | 0.016 |  |  |
| FA in thalamic radiations | **-0.084\*\*\*** | 0.045 |  |  |
| MD in acoustic radiation | 0.013 | 0.009 |  |  |
| MD in anterior thalamic radiation | **0.053\*\*\*** | -0.044 |  |  |
| MD in cingulate gyrus part of cingulum | **0.042\*\*** | 0.004 |  |  |
| MD in corticospinal tract | **0.036\*** | -0.018 |  |  |
| MD in forceps major | 0.017 | -0.008 |  |  |
| MD in forceps minor | 0.027 | -0.011 |  |  |
| MD in inferior fronto occipital fasciculus | **0.04\*\*** | -0.032 |  |  |
| MD in inferior longitudinal fasciculus | **0.033\*** | -0.028 |  |  |
| MD in medial lemniscus | 0.01 | 0.018 |  |  |
| MD in middle cerebellar peduncle | 0.03 | -0.022 |  |  |
| MD in parahippocampal part of cingulum | 0.007 | -0.001 |  |  |
| MD in posterior thalamic radiation | **0.038\*\*** | -0.017 |  |  |
| MD in superior longitudinal fasciculus | **0.045\*\*** | -0.01 |  |  |
| MD in superior thalamic radiation | **0.055\*\*\*** | -0.027 |  |  |
| MD in uncinate fasciculus | **0.03\*** | -0.021 |  |  |
| MD in association fibres | **0.029\*** | -0.02 |  |  |
| MD in global | **0.044\*\*** | -0.027 |  |  |
| MD in projection fibres | **0.044\*\*** | -0.029 |  |  |
| MD in thalamic radiations | **0.053\*\*\*** | -0.033 |  |  |

Supplementary Table 8 Full results for association and sex-interaction analysis between brain structure and depression in full, female and male sample. \*, \*\* and \*\*\* represent significant results at pFDR<.05, pFDR<.01 and pFDR<.001, respectively (FDR correction not applied to p-values from sex-interaction analysis). Significant results are highlighted in bold.

| Brain Strucutre Phenotype | Comparison | Full Sample Beta | Sex Interaction (Males - Females) | Female Sample Beta | Male Sample Beta |
| --- | --- | --- | --- | --- | --- |
| Subcortical volume of caudate | CP-MDD- VS CP-MDD+ | -0.043 |  |  |  |
| Subcortical volume of caudate | CP-MDD- VS CP+MDD- | -0.028 |  |  |  |
| Subcortical volume of caudate | CP-MDD- VS CP+MDD+ | **-0.065\*\*** |  |  |  |
| Subcortical volume of caudate | CP+MDD- VS CP-MDD+ | -0.014 |  |  |  |
| Subcortical volume of caudate | CP+MDD- VS CP+MDD+ | -0.036 |  |  |  |
| Subcortical volume of caudate | CP+MDD+ VS CP-MDD+ | 0.022 |  |  |  |
| Subcortical volume of thalamus | CP-MDD- VS CP-MDD+ | 0.024 |  |  |  |
| Subcortical volume of thalamus | CP-MDD- VS CP+MDD- | -0.009 |  |  |  |
| Subcortical volume of thalamus | CP-MDD- VS CP+MDD+ | 0.023 |  |  |  |
| Subcortical volume of thalamus | CP+MDD- VS CP-MDD+ | 0.033 |  |  |  |
| Subcortical volume of thalamus | CP+MDD- VS CP+MDD+ | 0.032 |  |  |  |
| Subcortical volume of thalamus | CP+MDD+ VS CP-MDD+ | 0.001 |  |  |  |
| Volume of frontalpole | CP-MDD- VS CP-MDD+ | 0.015 |  |  |  |
| Volume of frontalpole | CP-MDD- VS CP+MDD- | 0.03 |  |  |  |
| Volume of frontalpole | CP-MDD- VS CP+MDD+ | 0.037 |  |  |  |
| Volume of frontalpole | CP+MDD- VS CP-MDD+ | -0.015 |  |  |  |
| Volume of frontalpole | CP+MDD- VS CP+MDD+ | 0.007 |  |  |  |
| Volume of frontalpole | CP+MDD+ VS CP-MDD+ | -0.022 |  |  |  |
| Volume of fusiform | CP-MDD- VS CP-MDD+ | -0.001 |  |  |  |
| Volume of fusiform | CP-MDD- VS CP+MDD- | **0.033\*** |  |  |  |
| Volume of fusiform | CP-MDD- VS CP+MDD+ | **0.044\*** |  |  |  |
| Volume of fusiform | CP+MDD- VS CP-MDD+ | -0.033 |  |  |  |
| Volume of fusiform | CP+MDD- VS CP+MDD+ | 0.011 |  |  |  |
| Volume of fusiform | CP+MDD+ VS CP-MDD+ | **-0.045\*** |  |  |  |
| Volume of inferiortemporal | CP-MDD- VS CP-MDD+ | 0.019 |  |  |  |
| Volume of inferiortemporal | CP-MDD- VS CP+MDD- | **0.039\*\*** |  |  |  |
| Volume of inferiortemporal | CP-MDD- VS CP+MDD+ | 0.026 |  |  |  |
| Volume of inferiortemporal | CP+MDD- VS CP-MDD+ | -0.02 |  |  |  |
| Volume of inferiortemporal | CP+MDD- VS CP+MDD+ | -0.013 |  |  |  |
| Volume of inferiortemporal | CP+MDD+ VS CP-MDD+ | -0.008 |  |  |  |
| Volume of insula | CP-MDD- VS CP-MDD+ | -0.004 |  |  |  |
| Volume of insula | CP-MDD- VS CP+MDD- | 0.024 |  |  |  |
| Volume of insula | CP-MDD- VS CP+MDD+ | **0.054\*\*** |  |  |  |
| Volume of insula | CP+MDD- VS CP-MDD+ | -0.028 |  |  |  |
| Volume of insula | CP+MDD- VS CP+MDD+ | 0.03 |  |  |  |
| Volume of insula | CP+MDD+ VS CP-MDD+ | **-0.058\*\*** |  |  |  |
| Volume of isthmuscingulate | CP-MDD- VS CP-MDD+ | -0.017 |  |  |  |
| Volume of isthmuscingulate | CP-MDD- VS CP+MDD- | **0.034\*** |  |  |  |
| Volume of isthmuscingulate | CP-MDD- VS CP+MDD+ | -0.021 |  |  |  |
| Volume of isthmuscingulate | CP+MDD- VS CP-MDD+ | **-0.051\*** |  |  |  |
| Volume of isthmuscingulate | CP+MDD- VS CP+MDD+ | **-0.055\*\*** |  |  |  |
| Volume of isthmuscingulate | CP+MDD+ VS CP-MDD+ | 0.004 |  |  |  |
| Volume of lateraloccipital | CP-MDD- VS CP-MDD+ | -0.02 | -0.047 |  |  |
| Volume of lateraloccipital | CP-MDD- VS CP+MDD- | 0.018 | -0.003 |  |  |
| Volume of lateraloccipital | CP-MDD- VS CP+MDD+ | -0.017 | -0.074 |  |  |
| Volume of lateraloccipital | CP+MDD- VS CP-MDD+ | -0.039 | -0.044 |  |  |
| Volume of lateraloccipital | CP+MDD- VS CP+MDD+ | -0.035 | -0.071 |  |  |
| Volume of lateraloccipital | CP+MDD+ VS CP-MDD+ | -0.004 | 0.027 |  |  |
| Volume of medialorbitofrontal | CP-MDD- VS CP-MDD+ | 0.015 |  |  |  |
| Volume of medialorbitofrontal | CP-MDD- VS CP+MDD- | **0.037\*\*** |  |  |  |
| Volume of medialorbitofrontal | CP-MDD- VS CP+MDD+ | **0.044\*** |  |  |  |
| Volume of medialorbitofrontal | CP+MDD- VS CP-MDD+ | -0.022 |  |  |  |
| Volume of medialorbitofrontal | CP+MDD- VS CP+MDD+ | 0.006 |  |  |  |
| Volume of medialorbitofrontal | CP+MDD+ VS CP-MDD+ | -0.029 |  |  |  |
| Volume of paracentral | CP-MDD- VS CP-MDD+ |  | -0.015 |  |  |
| Volume of paracentral | CP-MDD- VS CP+MDD- |  | **0.065\*** |  |  |
| Volume of paracentral | CP-MDD- VS CP+MDD+ |  | -0.009 |  |  |
| Volume of paracentral | CP+MDD- VS CP-MDD+ |  | -0.08 |  |  |
| Volume of paracentral | CP+MDD- VS CP+MDD+ |  | -0.074 |  |  |
| Volume of paracentral | CP+MDD+ VS CP-MDD+ |  | -0.006 |  |  |
| Volume of paracentral left | CP-MDD- VS CP+MDD- |  |  | **0.055\*\*** |  |
| Volume of paracentral right | CP-MDD- VS CP+MDD- |  |  | **0.057\*\*** |  |
| Volume of parsopercularis | CP-MDD- VS CP-MDD+ | -0.016 |  |  |  |
| Volume of parsopercularis | CP-MDD- VS CP+MDD- | 0.019 |  |  |  |
| Volume of parsopercularis | CP-MDD- VS CP+MDD+ | 0.028 |  |  |  |
| Volume of parsopercularis | CP+MDD- VS CP-MDD+ | -0.036 |  |  |  |
| Volume of parsopercularis | CP+MDD- VS CP+MDD+ | 0.009 |  |  |  |
| Volume of parsopercularis | CP+MDD+ VS CP-MDD+ | -0.045 |  |  |  |
| Volume of postcentral | CP-MDD- VS CP-MDD+ | -0.013 |  |  |  |
| Volume of postcentral | CP-MDD- VS CP+MDD- | **0.049\*\*\*** |  |  |  |
| Volume of postcentral | CP-MDD- VS CP+MDD+ | 0.033 |  |  |  |
| Volume of postcentral | CP+MDD- VS CP-MDD+ | **-0.062\*\*** |  |  |  |
| Volume of postcentral | CP+MDD- VS CP+MDD+ | -0.016 |  |  |  |
| Volume of postcentral | CP+MDD+ VS CP-MDD+ | **-0.047\*** |  |  |  |
| Volume of posteriorcingulate | CP-MDD- VS CP-MDD+ | -0.004 |  |  |  |
| Volume of posteriorcingulate | CP-MDD- VS CP+MDD- | **0.041\*\*** |  |  |  |
| Volume of posteriorcingulate | CP-MDD- VS CP+MDD+ | 0.036 |  |  |  |
| Volume of posteriorcingulate | CP+MDD- VS CP-MDD+ | **-0.045\*** |  |  |  |
| Volume of posteriorcingulate | CP+MDD- VS CP+MDD+ | -0.005 |  |  |  |
| Volume of posteriorcingulate | CP+MDD+ VS CP-MDD+ | -0.04 |  |  |  |
| Volume of rostralanteriorcingulate | CP-MDD- VS CP-MDD+ | 0.002 |  |  |  |
| Volume of rostralanteriorcingulate | CP-MDD- VS CP+MDD- | **0.054\*\*\*** |  |  |  |
| Volume of rostralanteriorcingulate | CP-MDD- VS CP+MDD+ | 0.024 |  |  |  |
| Volume of rostralanteriorcingulate | CP+MDD- VS CP-MDD+ | **-0.052\*\*** |  |  |  |
| Volume of rostralanteriorcingulate | CP+MDD- VS CP+MDD+ | -0.03 |  |  |  |
| Volume of rostralanteriorcingulate | CP+MDD+ VS CP-MDD+ | -0.022 |  |  |  |
| Volume of superiortemporal left | CP-MDD- VS CP-MDD+ | -0.005 | -0.023 |  |  |
| Volume of superiortemporal left | CP-MDD- VS CP+MDD- | 0.023 | 0.013 |  |  |
| Volume of superiortemporal left | CP-MDD- VS CP+MDD+ | 0.016 | -0.022 |  |  |
| Volume of superiortemporal left | CP+MDD- VS CP-MDD+ | -0.028 | -0.035 |  |  |
| Volume of superiortemporal left | CP+MDD- VS CP+MDD+ | -0.006 | -0.035 |  |  |
| Volume of superiortemporal left | CP+MDD+ VS CP-MDD+ | -0.022 | -0.001 |  |  |
| Volume of superiortemporal right | CP-MDD- VS CP-MDD+ | -0.035 | 0.022 |  |  |
| Volume of superiortemporal right | CP-MDD- VS CP+MDD- | 0.005 | 0.046 |  |  |
| Volume of superiortemporal right | CP-MDD- VS CP+MDD+ | -0.015 | 0.024 |  |  |
| Volume of superiortemporal right | CP+MDD- VS CP-MDD+ | -0.039 | -0.023 |  |  |
| Volume of superiortemporal right | CP+MDD- VS CP+MDD+ | -0.02 | -0.022 |  |  |
| Volume of superiortemporal right | CP+MDD+ VS CP-MDD+ | -0.02 | -0.002 |  |  |
| Volume of transversetemporal | CP-MDD- VS CP-MDD+ | -0.033 |  |  |  |
| Volume of transversetemporal | CP-MDD- VS CP+MDD- | 0.02 |  |  |  |
| Volume of transversetemporal | CP-MDD- VS CP+MDD+ | -0.005 |  |  |  |
| Volume of transversetemporal | CP+MDD- VS CP-MDD+ | **-0.053\*** |  |  |  |
| Volume of transversetemporal | CP+MDD- VS CP+MDD+ | -0.025 |  |  |  |
| Volume of transversetemporal | CP+MDD+ VS CP-MDD+ | -0.028 |  |  |  |
| Volume of cingulate lobe | CP-MDD- VS CP-MDD+ | -0.003 | 0.002 |  |  |
| Volume of cingulate lobe | CP-MDD- VS CP+MDD- | **0.059\*\*\*** | 0.045 |  |  |
| Volume of cingulate lobe | CP-MDD- VS CP+MDD+ | 0.017 | 0.051 |  |  |
| Volume of cingulate lobe | CP+MDD- VS CP-MDD+ | **-0.062\*\*** | -0.043 |  |  |
| Volume of cingulate lobe | CP+MDD- VS CP+MDD+ | -0.041 | 0.006 |  |  |
| Volume of cingulate lobe | CP+MDD+ VS CP-MDD+ | -0.02 | -0.048 |  |  |
| Volume of frontal lobe | CP-MDD- VS CP-MDD+ | 0.002 | 0.022 |  |  |
| Volume of frontal lobe | CP-MDD- VS CP+MDD- | **0.024\*** | 0.04 |  |  |
| Volume of frontal lobe | CP-MDD- VS CP+MDD+ | 0.019 | -0.013 |  |  |
| Volume of frontal lobe | CP+MDD- VS CP-MDD+ | -0.022 | -0.018 |  |  |
| Volume of frontal lobe | CP+MDD- VS CP+MDD+ | -0.005 | -0.053 |  |  |
| Volume of frontal lobe | CP+MDD+ VS CP-MDD+ | -0.017 | 0.035 |  |  |
| Volume of global cortical | CP-MDD- VS CP-MDD+ | -0.002 | -0.009 |  |  |
| Volume of global cortical | CP-MDD- VS CP+MDD- | **0.028\*\*** | 0.028 |  |  |
| Volume of global cortical | CP-MDD- VS CP+MDD+ | 0.017 | -0.008 |  |  |
| Volume of global cortical | CP+MDD- VS CP-MDD+ | **-0.03\*** | -0.037 |  |  |
| Volume of global cortical | CP+MDD- VS CP+MDD+ | -0.01 | -0.036 |  |  |
| Volume of global cortical | CP+MDD+ VS CP-MDD+ | -0.02 | -0.001 |  |  |
| Volume of occipital lobe | CP-MDD- VS CP-MDD+ | -0.013 | -0.016 |  |  |
| Volume of occipital lobe | CP-MDD- VS CP+MDD- | 0.01 | 0.016 |  |  |
| Volume of occipital lobe | CP-MDD- VS CP+MDD+ | -0.014 | -0.048 |  |  |
| Volume of occipital lobe | CP+MDD- VS CP-MDD+ | -0.023 | -0.032 |  |  |
| Volume of occipital lobe | CP+MDD- VS CP+MDD+ | -0.025 | -0.064 |  |  |
| Volume of occipital lobe | CP+MDD+ VS CP-MDD+ | 0.001 | 0.031 |  |  |
| Volume of parietal lobe | CP-MDD- VS CP-MDD+ | 0 | -0.05 |  |  |
| Volume of parietal lobe | CP-MDD- VS CP+MDD- | 0.02 | 0.012 |  |  |
| Volume of parietal lobe | CP-MDD- VS CP+MDD+ | 0.012 | 0.004 |  |  |
| Volume of parietal lobe | CP+MDD- VS CP-MDD+ | -0.021 | -0.061 |  |  |
| Volume of parietal lobe | CP+MDD- VS CP+MDD+ | -0.008 | -0.008 |  |  |
| Volume of parietal lobe | CP+MDD+ VS CP-MDD+ | -0.013 | -0.054 |  |  |
| Volume of temporal lobe | CP-MDD- VS CP-MDD+ | -0.004 | -0.007 |  |  |
| Volume of temporal lobe | CP-MDD- VS CP+MDD- | **0.033\*\*** | 0.017 |  |  |
| Volume of temporal lobe | CP-MDD- VS CP+MDD+ | **0.031\*** | -0.004 |  |  |
| Volume of temporal lobe | CP+MDD- VS CP-MDD+ | **-0.036\*** | -0.024 |  |  |
| Volume of temporal lobe | CP+MDD- VS CP+MDD+ | -0.002 | -0.021 |  |  |
| Volume of temporal lobe | CP+MDD+ VS CP-MDD+ | -0.034 | -0.004 |  |  |
| Area of fusiform | CP-MDD- VS CP-MDD+ | 0.005 |  |  |  |
| Area of fusiform | CP-MDD- VS CP+MDD- | **0.034\*\*** |  |  |  |
| Area of fusiform | CP-MDD- VS CP+MDD+ | 0.025 |  |  |  |
| Area of fusiform | CP+MDD- VS CP-MDD+ | -0.029 |  |  |  |
| Area of fusiform | CP+MDD- VS CP+MDD+ | -0.009 |  |  |  |
| Area of fusiform | CP+MDD+ VS CP-MDD+ | -0.02 |  |  |  |
| Area of inferiortemporal | CP-MDD- VS CP-MDD+ | 0.013 |  |  |  |
| Area of inferiortemporal | CP-MDD- VS CP+MDD- | **0.037\*\*** |  |  |  |
| Area of inferiortemporal | CP-MDD- VS CP+MDD+ | 0.018 |  |  |  |
| Area of inferiortemporal | CP+MDD- VS CP-MDD+ | -0.023 |  |  |  |
| Area of inferiortemporal | CP+MDD- VS CP+MDD+ | -0.018 |  |  |  |
| Area of inferiortemporal | CP+MDD+ VS CP-MDD+ | -0.005 |  |  |  |
| Area of isthmuscingulate | CP-MDD- VS CP-MDD+ | -0.008 |  |  |  |
| Area of isthmuscingulate | CP-MDD- VS CP+MDD- | **0.03\*** |  |  |  |
| Area of isthmuscingulate | CP-MDD- VS CP+MDD+ | -0.024 |  |  |  |
| Area of isthmuscingulate | CP+MDD- VS CP-MDD+ | **-0.039\*** |  |  |  |
| Area of isthmuscingulate | CP+MDD- VS CP+MDD+ | **-0.054\*\*** |  |  |  |
| Area of isthmuscingulate | CP+MDD+ VS CP-MDD+ | 0.015 |  |  |  |
| Area of postcentral | CP-MDD- VS CP-MDD+ | -0.008 |  |  |  |
| Area of postcentral | CP-MDD- VS CP+MDD- | **0.033\*\*** |  |  |  |
| Area of postcentral | CP-MDD- VS CP+MDD+ | 0.019 |  |  |  |
| Area of postcentral | CP+MDD- VS CP-MDD+ | **-0.041\*** |  |  |  |
| Area of postcentral | CP+MDD- VS CP+MDD+ | -0.015 |  |  |  |
| Area of postcentral | CP+MDD+ VS CP-MDD+ | -0.027 |  |  |  |
| Area of posteriorcingulate | CP-MDD- VS CP-MDD+ | 0.003 |  |  |  |
| Area of posteriorcingulate | CP-MDD- VS CP+MDD- | **0.036\*\*** |  |  |  |
| Area of posteriorcingulate | CP-MDD- VS CP+MDD+ | 0.019 |  |  |  |
| Area of posteriorcingulate | CP+MDD- VS CP-MDD+ | -0.033 |  |  |  |
| Area of posteriorcingulate | CP+MDD- VS CP+MDD+ | -0.016 |  |  |  |
| Area of posteriorcingulate | CP+MDD+ VS CP-MDD+ | -0.017 |  |  |  |
| Area of precuneus | CP-MDD- VS CP-MDD+ |  | -0.054 |  |  |
| Area of precuneus | CP-MDD- VS CP+MDD- |  | -0.003 |  |  |
| Area of precuneus | CP-MDD- VS CP+MDD+ |  | 0.066 |  |  |
| Area of precuneus | CP+MDD- VS CP-MDD+ |  | -0.051 |  |  |
| Area of precuneus | CP+MDD- VS CP+MDD+ |  | 0.07 |  |  |
| Area of precuneus | CP+MDD+ VS CP-MDD+ |  | **-0.121\*\*** |  | **0.083\*\*** |
| Area of rostralanteriorcingulate | CP-MDD- VS CP-MDD+ | -0.007 |  |  |  |
| Area of rostralanteriorcingulate | CP-MDD- VS CP+MDD- | **0.044\*\*** |  |  |  |
| Area of rostralanteriorcingulate | CP-MDD- VS CP+MDD+ | 0 |  |  |  |
| Area of rostralanteriorcingulate | CP+MDD- VS CP-MDD+ | **-0.051\*\*** |  |  |  |
| Area of rostralanteriorcingulate | CP+MDD- VS CP+MDD+ | **-0.044\*** |  |  |  |
| Area of rostralanteriorcingulate | CP+MDD+ VS CP-MDD+ | -0.006 |  |  |  |
| Area of cingulate lobe | CP-MDD- VS CP-MDD+ | -0.005 | 0.011 |  |  |
| Area of cingulate lobe | CP-MDD- VS CP+MDD- | **0.045\*\*\*** | 0.018 |  |  |
| Area of cingulate lobe | CP-MDD- VS CP+MDD+ | -0.003 | 0.068 |  |  |
| Area of cingulate lobe | CP+MDD- VS CP-MDD+ | **-0.051\*\*** | -0.007 |  |  |
| Area of cingulate lobe | CP+MDD- VS CP+MDD+ | **-0.048\*** | 0.05 |  |  |
| Area of cingulate lobe | CP+MDD+ VS CP-MDD+ | -0.002 | -0.057 |  |  |
| Area of frontal lobe | CP-MDD- VS CP-MDD+ | 0.002 | 0.048 |  |  |
| Area of frontal lobe | CP-MDD- VS CP+MDD- | **0.023\*** | 0.02 |  |  |
| Area of frontal lobe | CP-MDD- VS CP+MDD+ | 0.009 | -0.008 |  |  |
| Area of frontal lobe | CP+MDD- VS CP-MDD+ | -0.021 | 0.027 |  |  |
| Area of frontal lobe | CP+MDD- VS CP+MDD+ | -0.014 | -0.029 |  |  |
| Area of frontal lobe | CP+MDD+ VS CP-MDD+ | -0.007 | 0.056 |  |  |
| Area of global cortical | CP-MDD- VS CP-MDD+ | 0.002 | 0.009 |  |  |
| Area of global cortical | CP-MDD- VS CP+MDD- | **0.027\*\*\*** | 0.01 |  |  |
| Area of global cortical | CP-MDD- VS CP+MDD+ | 0.005 | 0.016 |  |  |
| Area of global cortical | CP+MDD- VS CP-MDD+ | **-0.024\*** | -0.001 |  |  |
| Area of global cortical | CP+MDD- VS CP+MDD+ | **-0.021\*** | 0.006 |  |  |
| Area of global cortical | CP+MDD+ VS CP-MDD+ | -0.003 | -0.007 |  |  |
| Area of occipital lobe | CP-MDD- VS CP-MDD+ | 0.008 | 0.013 |  |  |
| Area of occipital lobe | CP-MDD- VS CP+MDD- | 0.019 | 0.009 |  |  |
| Area of occipital lobe | CP-MDD- VS CP+MDD+ | -0.004 | -0.006 |  |  |
| Area of occipital lobe | CP+MDD- VS CP-MDD+ | -0.011 | 0.004 |  |  |
| Area of occipital lobe | CP+MDD- VS CP+MDD+ | -0.023 | -0.014 |  |  |
| Area of occipital lobe | CP+MDD+ VS CP-MDD+ | 0.012 | 0.018 |  |  |
| Area of parietal lobe | CP-MDD- VS CP-MDD+ | 0.004 | -0.038 |  |  |
| Area of parietal lobe | CP-MDD- VS CP+MDD- | 0.023 | 0 |  |  |
| Area of parietal lobe | CP-MDD- VS CP+MDD+ | 0.005 | 0.033 |  |  |
| Area of parietal lobe | CP+MDD- VS CP-MDD+ | -0.019 | -0.037 |  |  |
| Area of parietal lobe | CP+MDD- VS CP+MDD+ | -0.018 | 0.033 |  |  |
| Area of parietal lobe | CP+MDD+ VS CP-MDD+ | -0.001 | -0.071 |  |  |
| Area of temporal lobe | CP-MDD- VS CP-MDD+ | -0.004 | -0.006 |  |  |
| Area of temporal lobe | CP-MDD- VS CP+MDD- | **0.027\*\*** | -0.002 |  |  |
| Area of temporal lobe | CP-MDD- VS CP+MDD+ | 0.007 | 0.029 |  |  |
| Area of temporal lobe | CP+MDD- VS CP-MDD+ | **-0.03\*** | -0.003 |  |  |
| Area of temporal lobe | CP+MDD- VS CP+MDD+ | -0.02 | 0.031 |  |  |
| Area of temporal lobe | CP+MDD+ VS CP-MDD+ | -0.01 | -0.034 |  |  |
| Thickness of entorhinal | CP-MDD- VS CP-MDD+ |  | 0.026 |  |  |
| Thickness of entorhinal | CP-MDD- VS CP+MDD- |  | 0.06 |  |  |
| Thickness of entorhinal | CP-MDD- VS CP+MDD+ |  | -0.066 |  |  |
| Thickness of entorhinal | CP+MDD- VS CP-MDD+ |  | -0.035 |  |  |
| Thickness of entorhinal | CP+MDD- VS CP+MDD+ |  | **-0.126\*** | **-0.07\*\*** |  |
| Thickness of entorhinal | CP+MDD+ VS CP-MDD+ |  | 0.092 |  |  |
| Thickness of frontalpole | CP-MDD- VS CP-MDD+ | 0.031 |  |  |  |
| Thickness of frontalpole | CP-MDD- VS CP+MDD- | 0.037 |  |  |  |
| Thickness of frontalpole | CP-MDD- VS CP+MDD+ | 0.035 |  |  |  |
| Thickness of frontalpole | CP+MDD- VS CP-MDD+ | -0.006 |  |  |  |
| Thickness of frontalpole | CP+MDD- VS CP+MDD+ | -0.002 |  |  |  |
| Thickness of frontalpole | CP+MDD+ VS CP-MDD+ | -0.004 |  |  |  |
| Thickness of inferiortemporal left | CP-MDD- VS CP-MDD+ | 0.014 | -0.03 |  |  |
| Thickness of inferiortemporal left | CP-MDD- VS CP+MDD- | 0.038 | 0.019 |  |  |
| Thickness of inferiortemporal left | CP-MDD- VS CP+MDD+ | 0.034 | -0.029 |  |  |
| Thickness of inferiortemporal left | CP+MDD- VS CP-MDD+ | -0.024 | -0.05 |  |  |
| Thickness of inferiortemporal left | CP+MDD- VS CP+MDD+ | -0.004 | -0.048 |  |  |
| Thickness of inferiortemporal left | CP+MDD+ VS CP-MDD+ | -0.02 | -0.002 |  |  |
| Thickness of inferiortemporal right | CP-MDD- VS CP-MDD+ | 0.009 |  |  |  |
| Thickness of inferiortemporal right | CP-MDD- VS CP+MDD- | -0.01 |  |  |  |
| Thickness of inferiortemporal right | CP-MDD- VS CP+MDD+ | -0.001 |  |  |  |
| Thickness of inferiortemporal right | CP+MDD- VS CP-MDD+ | 0.019 |  |  |  |
| Thickness of inferiortemporal right | CP+MDD- VS CP+MDD+ | 0.009 |  |  |  |
| Thickness of inferiortemporal right | CP+MDD+ VS CP-MDD+ | 0.01 |  |  |  |
| Thickness of insula left | CP-MDD- VS CP-MDD+ | 0 | 0.017 |  |  |
| Thickness of insula left | CP-MDD- VS CP+MDD- | **0.05\*** | -0.01 |  |  |
| Thickness of insula left | CP-MDD- VS CP+MDD+ | **0.073\*** | -0.017 |  |  |
| Thickness of insula left | CP+MDD- VS CP-MDD+ | -0.05 | 0.027 |  |  |
| Thickness of insula left | CP+MDD- VS CP+MDD+ | 0.023 | -0.007 |  |  |
| Thickness of insula left | CP+MDD+ VS CP-MDD+ | -0.073 | 0.034 |  |  |
| Thickness of lateraloccipital | CP-MDD- VS CP-MDD+ |  | -0.071 |  |  |
| Thickness of lateraloccipital | CP-MDD- VS CP+MDD- |  | 0.017 |  |  |
| Thickness of lateraloccipital | CP-MDD- VS CP+MDD+ |  | -0.085 |  |  |
| Thickness of lateraloccipital | CP+MDD- VS CP-MDD+ |  | -0.088 |  |  |
| Thickness of lateraloccipital | CP+MDD- VS CP+MDD+ |  | -0.102 |  |  |
| Thickness of lateraloccipital | CP+MDD+ VS CP-MDD+ |  | 0.014 |  |  |
| Thickness of medialorbitofrontal | CP-MDD- VS CP-MDD+ | 0.007 |  |  |  |
| Thickness of medialorbitofrontal | CP-MDD- VS CP+MDD- | 0.029 |  |  |  |
| Thickness of medialorbitofrontal | CP-MDD- VS CP+MDD+ | 0.045 |  |  |  |
| Thickness of medialorbitofrontal | CP+MDD- VS CP-MDD+ | -0.022 |  |  |  |
| Thickness of medialorbitofrontal | CP+MDD- VS CP+MDD+ | 0.015 |  |  |  |
| Thickness of medialorbitofrontal | CP+MDD+ VS CP-MDD+ | -0.037 |  |  |  |
| Thickness of parahippocampal | CP-MDD- VS CP-MDD+ | -0.007 |  |  |  |
| Thickness of parahippocampal | CP-MDD- VS CP+MDD- | 0.039 |  |  |  |
| Thickness of parahippocampal | CP-MDD- VS CP+MDD+ | 0.018 |  |  |  |
| Thickness of parahippocampal | CP+MDD- VS CP-MDD+ | -0.046 |  |  |  |
| Thickness of parahippocampal | CP+MDD- VS CP+MDD+ | -0.021 |  |  |  |
| Thickness of parahippocampal | CP+MDD+ VS CP-MDD+ | -0.025 |  |  |  |
| Thickness of postcentral | CP-MDD- VS CP-MDD+ | -0.009 |  |  |  |
| Thickness of postcentral | CP-MDD- VS CP+MDD- | 0.037 |  |  |  |
| Thickness of postcentral | CP-MDD- VS CP+MDD+ | 0.029 |  |  |  |
| Thickness of postcentral | CP+MDD- VS CP-MDD+ | -0.046 |  |  |  |
| Thickness of postcentral | CP+MDD- VS CP+MDD+ | -0.009 |  |  |  |
| Thickness of postcentral | CP+MDD+ VS CP-MDD+ | -0.038 |  |  |  |
| Thickness of rostralanteriorcingulate | CP-MDD- VS CP-MDD+ |  | 0.006 |  |  |
| Thickness of rostralanteriorcingulate | CP-MDD- VS CP+MDD- |  | **0.098\*\*** |  |  |
| Thickness of rostralanteriorcingulate | CP-MDD- VS CP+MDD+ |  | -0.014 |  |  |
| Thickness of rostralanteriorcingulate | CP+MDD- VS CP-MDD+ |  | **-0.092\*** |  |  |
| Thickness of rostralanteriorcingulate | CP+MDD- VS CP+MDD+ |  | **-0.112\*** |  |  |
| Thickness of rostralanteriorcingulate | CP+MDD+ VS CP-MDD+ |  | 0.02 |  |  |
| Thickness of rostralanteriorcingulate left | CP-MDD- VS CP+MDD- |  |  | **0.09\*\*\*** |  |
| Thickness of rostralanteriorcingulate left | CP+MDD- VS CP-MDD+ |  |  | -0.063 |  |
| Thickness of rostralanteriorcingulate left | CP+MDD- VS CP+MDD+ |  |  | -0.016 |  |
| Thickness of transversetemporal | CP-MDD- VS CP-MDD+ | -0.047 |  |  |  |
| Thickness of transversetemporal | CP-MDD- VS CP+MDD- | 0.014 |  |  |  |
| Thickness of transversetemporal | CP-MDD- VS CP+MDD+ | 0.002 |  |  |  |
| Thickness of transversetemporal | CP+MDD- VS CP-MDD+ | **-0.061\*** |  |  |  |
| Thickness of transversetemporal | CP+MDD- VS CP+MDD+ | -0.012 |  |  |  |
| Thickness of transversetemporal | CP+MDD+ VS CP-MDD+ | -0.049 |  |  |  |
| Thickness of cingulate lobe | CP-MDD- VS CP-MDD+ | 0.006 | -0.009 |  |  |
| Thickness of cingulate lobe | CP-MDD- VS CP+MDD- | 0.029 | 0.061 |  |  |
| Thickness of cingulate lobe | CP-MDD- VS CP+MDD+ | 0.029 | -0.05 |  |  |
| Thickness of cingulate lobe | CP+MDD- VS CP-MDD+ | -0.023 | -0.07 |  |  |
| Thickness of cingulate lobe | CP+MDD- VS CP+MDD+ | -0.001 | -0.111 |  |  |
| Thickness of cingulate lobe | CP+MDD+ VS CP-MDD+ | -0.022 | 0.041 |  |  |
| Thickness of frontal lobe | CP-MDD- VS CP-MDD+ | 0.002 | -0.035 |  |  |
| Thickness of frontal lobe | CP-MDD- VS CP+MDD- | 0.009 | 0.037 |  |  |
| Thickness of frontal lobe | CP-MDD- VS CP+MDD+ | 0.028 | -0.007 |  |  |
| Thickness of frontal lobe | CP+MDD- VS CP-MDD+ | -0.008 | -0.072 |  |  |
| Thickness of frontal lobe | CP+MDD- VS CP+MDD+ | 0.018 | -0.045 |  |  |
| Thickness of frontal lobe | CP+MDD+ VS CP-MDD+ | -0.026 | -0.028 |  |  |
| Thickness of global cortical | CP-MDD- VS CP-MDD+ | -0.009 | -0.029 |  |  |
| Thickness of global cortical | CP-MDD- VS CP+MDD- | 0.01 | 0.034 |  |  |
| Thickness of global cortical | CP-MDD- VS CP+MDD+ | 0.021 | -0.035 |  |  |
| Thickness of global cortical | CP+MDD- VS CP-MDD+ | -0.019 | -0.063 |  |  |
| Thickness of global cortical | CP+MDD- VS CP+MDD+ | 0.011 | -0.07 |  |  |
| Thickness of global cortical | CP+MDD+ VS CP-MDD+ | -0.029 | 0.006 |  |  |
| Thickness of occipital lobe | CP-MDD- VS CP-MDD+ | -0.043 | -0.073 |  |  |
| Thickness of occipital lobe | CP-MDD- VS CP+MDD- | -0.005 | 0.016 |  |  |
| Thickness of occipital lobe | CP-MDD- VS CP+MDD+ | -0.024 | -0.086 |  |  |
| Thickness of occipital lobe | CP+MDD- VS CP-MDD+ | -0.038 | -0.089 |  |  |
| Thickness of occipital lobe | CP+MDD- VS CP+MDD+ | -0.02 | -0.102 |  |  |
| Thickness of occipital lobe | CP+MDD+ VS CP-MDD+ | -0.019 | 0.013 |  |  |
| Thickness of parietal lobe | CP-MDD- VS CP-MDD+ | -0.009 | -0.022 |  |  |
| Thickness of parietal lobe | CP-MDD- VS CP+MDD- | -0.001 | 0.009 |  |  |
| Thickness of parietal lobe | CP-MDD- VS CP+MDD+ | 0.007 | -0.037 |  |  |
| Thickness of parietal lobe | CP+MDD- VS CP-MDD+ | -0.008 | -0.031 |  |  |
| Thickness of parietal lobe | CP+MDD- VS CP+MDD+ | 0.008 | -0.046 |  |  |
| Thickness of parietal lobe | CP+MDD+ VS CP-MDD+ | -0.016 | 0.015 |  |  |
| Thickness of temporal lobe | CP-MDD- VS CP-MDD+ | -0.004 | -0.004 |  |  |
| Thickness of temporal lobe | CP-MDD- VS CP+MDD- | 0.026 | 0.053 |  |  |
| Thickness of temporal lobe | CP-MDD- VS CP+MDD+ | 0.038 | -0.04 |  |  |
| Thickness of temporal lobe | CP+MDD- VS CP-MDD+ | -0.03 | -0.057 |  |  |
| Thickness of temporal lobe | CP+MDD- VS CP+MDD+ | 0.012 | -0.093 |  |  |
| Thickness of temporal lobe | CP+MDD+ VS CP-MDD+ | -0.042 | 0.036 |  |  |
| FA in anterior thalamic radiation | CP-MDD- VS CP-MDD+ | **0.061\*\*** |  |  |  |
| FA in anterior thalamic radiation | CP-MDD- VS CP+MDD- | 0.001 |  |  |  |
| FA in anterior thalamic radiation | CP-MDD- VS CP+MDD+ | **0.076\*\*** |  |  |  |
| FA in anterior thalamic radiation | CP+MDD- VS CP-MDD+ | **0.06\*** |  |  |  |
| FA in anterior thalamic radiation | CP+MDD- VS CP+MDD+ | **0.075\*\*** |  |  |  |
| FA in anterior thalamic radiation | CP+MDD+ VS CP-MDD+ | -0.015 |  |  |  |
| FA in forceps minor | CP-MDD- VS CP-MDD+ | **0.048\*** | 0.025 |  |  |
| FA in forceps minor | CP-MDD- VS CP+MDD- | 0.016 | 0.002 |  |  |
| FA in forceps minor | CP-MDD- VS CP+MDD+ | **0.052\*** | 0.03 |  |  |
| FA in forceps minor | CP+MDD- VS CP-MDD+ | 0.032 | 0.024 |  |  |
| FA in forceps minor | CP+MDD- VS CP+MDD+ | 0.037 | 0.028 |  |  |
| FA in forceps minor | CP+MDD+ VS CP-MDD+ | -0.005 | -0.005 |  |  |
| FA in inferior fronto occipital fasciculus | CP-MDD- VS CP-MDD+ | 0.044 |  |  |  |
| FA in inferior fronto occipital fasciculus | CP-MDD- VS CP+MDD- | 0.002 |  |  |  |
| FA in inferior fronto occipital fasciculus | CP-MDD- VS CP+MDD+ | **0.07\*\*** |  |  |  |
| FA in inferior fronto occipital fasciculus | CP+MDD- VS CP-MDD+ | 0.042 |  |  |  |
| FA in inferior fronto occipital fasciculus | CP+MDD- VS CP+MDD+ | **0.068\*\*** |  |  |  |
| FA in inferior fronto occipital fasciculus | CP+MDD+ VS CP-MDD+ | -0.025 |  |  |  |
| FA in inferior longitudinal fasciculus | CP-MDD- VS CP-MDD+ | 0.044 |  |  |  |
| FA in inferior longitudinal fasciculus | CP-MDD- VS CP+MDD- | -0.019 |  |  |  |
| FA in inferior longitudinal fasciculus | CP-MDD- VS CP+MDD+ | **0.054\*** |  |  |  |
| FA in inferior longitudinal fasciculus | CP+MDD- VS CP-MDD+ | **0.063\*** |  |  |  |
| FA in inferior longitudinal fasciculus | CP+MDD- VS CP+MDD+ | **0.073\*\*** |  |  |  |
| FA in inferior longitudinal fasciculus | CP+MDD+ VS CP-MDD+ | -0.01 |  |  |  |
| FA in middle cerebellar peduncle | CP-MDD- VS CP-MDD+ |  | 0.041 |  |  |
| FA in middle cerebellar peduncle | CP-MDD- VS CP+MDD- |  | -0.008 |  |  |
| FA in middle cerebellar peduncle | CP-MDD- VS CP+MDD+ |  | 0.052 |  |  |
| FA in middle cerebellar peduncle | CP+MDD- VS CP-MDD+ |  | 0.05 |  |  |
| FA in middle cerebellar peduncle | CP+MDD- VS CP+MDD+ |  | 0.06 |  |  |
| FA in middle cerebellar peduncle | CP+MDD+ VS CP-MDD+ |  | -0.01 |  |  |
| FA in posterior thalamic radiation | CP-MDD- VS CP-MDD+ | **0.07\*\*** |  |  |  |
| FA in posterior thalamic radiation | CP-MDD- VS CP+MDD- | -0.001 |  |  |  |
| FA in posterior thalamic radiation | CP-MDD- VS CP+MDD+ | **0.086\*\*\*** |  |  |  |
| FA in posterior thalamic radiation | CP+MDD- VS CP-MDD+ | **0.071\*\*** |  |  |  |
| FA in posterior thalamic radiation | CP+MDD- VS CP+MDD+ | **0.086\*\*** |  |  |  |
| FA in posterior thalamic radiation | CP+MDD+ VS CP-MDD+ | -0.015 |  |  |  |
| FA in superior longitudinal fasciculus | CP-MDD- VS CP-MDD+ | 0.031 |  |  |  |
| FA in superior longitudinal fasciculus | CP-MDD- VS CP+MDD- | -0.01 |  |  |  |
| FA in superior longitudinal fasciculus | CP-MDD- VS CP+MDD+ | **0.068\*\*** |  |  |  |
| FA in superior longitudinal fasciculus | CP+MDD- VS CP-MDD+ | 0.041 |  |  |  |
| FA in superior longitudinal fasciculus | CP+MDD- VS CP+MDD+ | **0.078\*\*** |  |  |  |
| FA in superior longitudinal fasciculus | CP+MDD+ VS CP-MDD+ | -0.037 |  |  |  |
| FA in superior thalamic radiation | CP-MDD- VS CP-MDD+ | **0.056\*** |  |  |  |
| FA in superior thalamic radiation | CP-MDD- VS CP+MDD- | -0.01 |  |  |  |
| FA in superior thalamic radiation | CP-MDD- VS CP+MDD+ | 0.03 |  |  |  |
| FA in superior thalamic radiation | CP+MDD- VS CP-MDD+ | **0.066\*** |  |  |  |
| FA in superior thalamic radiation | CP+MDD- VS CP+MDD+ | 0.04 |  |  |  |
| FA in superior thalamic radiation | CP+MDD+ VS CP-MDD+ | 0.026 |  |  |  |
| FA in uncinate fasciculus | CP-MDD- VS CP-MDD+ | 0.035 |  |  |  |
| FA in uncinate fasciculus | CP-MDD- VS CP+MDD- | 0.003 |  |  |  |
| FA in uncinate fasciculus | CP-MDD- VS CP+MDD+ | **0.046\*** |  |  |  |
| FA in uncinate fasciculus | CP+MDD- VS CP-MDD+ | 0.032 |  |  |  |
| FA in uncinate fasciculus | CP+MDD- VS CP+MDD+ | 0.043 |  |  |  |
| FA in uncinate fasciculus | CP+MDD+ VS CP-MDD+ | -0.011 |  |  |  |
| FA in association fibres | CP-MDD- VS CP-MDD+ |  | 0.04 |  |  |
| FA in association fibres | CP-MDD- VS CP+MDD- |  | 0.017 |  |  |
| FA in association fibres | CP-MDD- VS CP+MDD+ |  | 0.037 |  |  |
| FA in association fibres | CP+MDD- VS CP-MDD+ |  | 0.023 |  |  |
| FA in association fibres | CP+MDD- VS CP+MDD+ |  | 0.02 |  |  |
| FA in association fibres | CP+MDD+ VS CP-MDD+ |  | 0.003 |  |  |
| FA in global | CP-MDD- VS CP-MDD+ |  | 0.041 |  |  |
| FA in global | CP-MDD- VS CP+MDD- |  | 0.012 |  |  |
| FA in global | CP-MDD- VS CP+MDD+ |  | 0.041 |  |  |
| FA in global | CP+MDD- VS CP-MDD+ |  | 0.029 |  |  |
| FA in global | CP+MDD- VS CP+MDD+ |  | 0.029 |  |  |
| FA in global | CP+MDD+ VS CP-MDD+ |  | 0 |  |  |
| FA in projection fibres | CP-MDD- VS CP-MDD+ | 0.04 | 0.021 |  |  |
| FA in projection fibres | CP-MDD- VS CP+MDD- | 0.008 | -0.014 |  |  |
| FA in projection fibres | CP-MDD- VS CP+MDD+ | 0.025 | 0 |  |  |
| FA in projection fibres | CP+MDD- VS CP-MDD+ | 0.032 | 0.035 |  |  |
| FA in projection fibres | CP+MDD- VS CP+MDD+ | 0.017 | 0.014 |  |  |
| FA in projection fibres | CP+MDD+ VS CP-MDD+ | 0.015 | 0.021 |  |  |
| FA in thalamic radiations | CP-MDD- VS CP-MDD+ |  | 0.041 |  |  |
| FA in thalamic radiations | CP-MDD- VS CP+MDD- |  | 0.019 |  |  |
| FA in thalamic radiations | CP-MDD- VS CP+MDD+ |  | 0.064 |  |  |
| FA in thalamic radiations | CP+MDD- VS CP-MDD+ |  | 0.022 |  |  |
| FA in thalamic radiations | CP+MDD- VS CP+MDD+ |  | 0.045 |  |  |
| FA in thalamic radiations | CP+MDD+ VS CP-MDD+ |  | -0.023 |  |  |
| MD in anterior thalamic radiation | CP-MDD- VS CP-MDD+ | **-0.046\*** |  |  |  |
| MD in anterior thalamic radiation | CP-MDD- VS CP+MDD- | 0.002 |  |  |  |
| MD in anterior thalamic radiation | CP-MDD- VS CP+MDD+ | **-0.059\*** |  |  |  |
| MD in anterior thalamic radiation | CP+MDD- VS CP-MDD+ | **-0.048\*** |  |  |  |
| MD in anterior thalamic radiation | CP+MDD- VS CP+MDD+ | **-0.062\*** |  |  |  |
| MD in anterior thalamic radiation | CP+MDD+ VS CP-MDD+ | 0.014 |  |  |  |
| MD in cingulate gyrus part of cingulum | CP-MDD- VS CP-MDD+ | **-0.056\*** |  |  |  |
| MD in cingulate gyrus part of cingulum | CP-MDD- VS CP+MDD- | -0.001 |  |  |  |
| MD in cingulate gyrus part of cingulum | CP-MDD- VS CP+MDD+ | -0.025 |  |  |  |
| MD in cingulate gyrus part of cingulum | CP+MDD- VS CP-MDD+ | **-0.054\*** |  |  |  |
| MD in cingulate gyrus part of cingulum | CP+MDD- VS CP+MDD+ | -0.024 |  |  |  |
| MD in cingulate gyrus part of cingulum | CP+MDD+ VS CP-MDD+ | -0.03 |  |  |  |
| MD in forceps major | CP-MDD- VS CP-MDD+ | -0.025 | 0.012 |  |  |
| MD in forceps major | CP-MDD- VS CP+MDD- | -0.001 | 0.075 |  |  |
| MD in forceps major | CP-MDD- VS CP+MDD+ | -0.008 | 0.014 |  |  |
| MD in forceps major | CP+MDD- VS CP-MDD+ | -0.024 | -0.063 |  |  |
| MD in forceps major | CP+MDD- VS CP+MDD+ | -0.008 | -0.061 |  |  |
| MD in forceps major | CP+MDD+ VS CP-MDD+ | -0.017 | -0.002 |  |  |
| MD in forceps minor | CP-MDD- VS CP-MDD+ | -0.029 | 0.014 |  |  |
| MD in forceps minor | CP-MDD- VS CP+MDD- | 0.014 | -0.009 |  |  |
| MD in forceps minor | CP-MDD- VS CP+MDD+ | -0.013 | -0.044 |  |  |
| MD in forceps minor | CP+MDD- VS CP-MDD+ | -0.044 | 0.023 |  |  |
| MD in forceps minor | CP+MDD- VS CP+MDD+ | -0.027 | -0.035 |  |  |
| MD in forceps minor | CP+MDD+ VS CP-MDD+ | -0.017 | 0.058 |  |  |
| MD in inferior fronto occipital fasciculus | CP-MDD- VS CP-MDD+ | -0.03 |  |  |  |
| MD in inferior fronto occipital fasciculus | CP-MDD- VS CP+MDD- | 0.025 |  |  |  |
| MD in inferior fronto occipital fasciculus | CP-MDD- VS CP+MDD+ | -0.033 |  |  |  |
| MD in inferior fronto occipital fasciculus | CP+MDD- VS CP-MDD+ | **-0.055\*** |  |  |  |
| MD in inferior fronto occipital fasciculus | CP+MDD- VS CP+MDD+ | **-0.057\*** |  |  |  |
| MD in inferior fronto occipital fasciculus | CP+MDD+ VS CP-MDD+ | 0.002 |  |  |  |
| MD in inferior longitudinal fasciculus | CP-MDD- VS CP-MDD+ | -0.022 |  |  |  |
| MD in inferior longitudinal fasciculus | CP-MDD- VS CP+MDD- | 0.03 |  |  |  |
| MD in inferior longitudinal fasciculus | CP-MDD- VS CP+MDD+ | -0.024 |  |  |  |
| MD in inferior longitudinal fasciculus | CP+MDD- VS CP-MDD+ | **-0.053\*** |  |  |  |
| MD in inferior longitudinal fasciculus | CP+MDD- VS CP+MDD+ | **-0.054\*** |  |  |  |
| MD in inferior longitudinal fasciculus | CP+MDD+ VS CP-MDD+ | 0.002 |  |  |  |
| MD in middle cerebellar peduncle | CP-MDD- VS CP-MDD+ | -0.03 | 0.036 |  |  |
| MD in middle cerebellar peduncle | CP-MDD- VS CP+MDD- | 0.006 | 0.001 |  |  |
| MD in middle cerebellar peduncle | CP-MDD- VS CP+MDD+ | -0.027 | -0.09 |  |  |
| MD in middle cerebellar peduncle | CP+MDD- VS CP-MDD+ | -0.036 | 0.035 |  |  |
| MD in middle cerebellar peduncle | CP+MDD- VS CP+MDD+ | -0.033 | -0.091 |  |  |
| MD in middle cerebellar peduncle | CP+MDD+ VS CP-MDD+ | -0.003 | 0.126 |  |  |
| MD in posterior thalamic radiation | CP-MDD- VS CP-MDD+ | -0.03 |  |  |  |
| MD in posterior thalamic radiation | CP-MDD- VS CP+MDD- | 0.017 |  |  |  |
| MD in posterior thalamic radiation | CP-MDD- VS CP+MDD+ | -0.037 |  |  |  |
| MD in posterior thalamic radiation | CP+MDD- VS CP-MDD+ | **-0.047\*** |  |  |  |
| MD in posterior thalamic radiation | CP+MDD- VS CP+MDD+ | **-0.054\*** |  |  |  |
| MD in posterior thalamic radiation | CP+MDD+ VS CP-MDD+ | 0.007 |  |  |  |
| MD in superior longitudinal fasciculus | CP-MDD- VS CP-MDD+ | -0.032 |  |  |  |
| MD in superior longitudinal fasciculus | CP-MDD- VS CP+MDD- | 0.017 |  |  |  |
| MD in superior longitudinal fasciculus | CP-MDD- VS CP+MDD+ | **-0.051\*** |  |  |  |
| MD in superior longitudinal fasciculus | CP+MDD- VS CP-MDD+ | **-0.049\*** |  |  |  |
| MD in superior longitudinal fasciculus | CP+MDD- VS CP+MDD+ | **-0.068\*** |  |  |  |
| MD in superior longitudinal fasciculus | CP+MDD+ VS CP-MDD+ | 0.019 |  |  |  |
| MD in superior thalamic radiation | CP-MDD- VS CP-MDD+ | **-0.05\*** |  |  |  |
| MD in superior thalamic radiation | CP-MDD- VS CP+MDD- | 0.007 |  |  |  |
| MD in superior thalamic radiation | CP-MDD- VS CP+MDD+ | **-0.058\*** |  |  |  |
| MD in superior thalamic radiation | CP+MDD- VS CP-MDD+ | **-0.057\*** |  |  |  |
| MD in superior thalamic radiation | CP+MDD- VS CP+MDD+ | **-0.064\*** |  |  |  |
| MD in superior thalamic radiation | CP+MDD+ VS CP-MDD+ | 0.008 |  |  |  |
| MD in association fibres | CP-MDD- VS CP-MDD+ | -0.027 | -0.029 |  |  |
| MD in association fibres | CP-MDD- VS CP+MDD- | 0.012 | -0.002 |  |  |
| MD in association fibres | CP-MDD- VS CP+MDD+ | -0.025 | -0.011 |  |  |
| MD in association fibres | CP+MDD- VS CP-MDD+ | -0.039 | -0.027 |  |  |
| MD in association fibres | CP+MDD- VS CP+MDD+ | -0.037 | -0.009 |  |  |
| MD in association fibres | CP+MDD+ VS CP-MDD+ | -0.002 | -0.019 |  |  |
| MD in global | CP-MDD- VS CP-MDD+ | **-0.041\*** | -0.024 |  |  |
| MD in global | CP-MDD- VS CP+MDD- | 0.012 | -0.001 |  |  |
| MD in global | CP-MDD- VS CP+MDD+ | **-0.042\*** | -0.029 |  |  |
| MD in global | CP+MDD- VS CP-MDD+ | **-0.052\*** | -0.023 |  |  |
| MD in global | CP+MDD- VS CP+MDD+ | **-0.053\*** | -0.028 |  |  |
| MD in global | CP+MDD+ VS CP-MDD+ | 0.001 | 0.005 |  |  |
| MD in projection fibres | CP-MDD- VS CP-MDD+ | -0.042 | 0.001 |  |  |
| MD in projection fibres | CP-MDD- VS CP+MDD- | 0.016 | 0.005 |  |  |
| MD in projection fibres | CP-MDD- VS CP+MDD+ | -0.037 | -0.057 |  |  |
| MD in projection fibres | CP+MDD- VS CP-MDD+ | **-0.058\*** | -0.004 |  |  |
| MD in projection fibres | CP+MDD- VS CP+MDD+ | -0.053 | -0.062 |  |  |
| MD in projection fibres | CP+MDD+ VS CP-MDD+ | -0.005 | 0.058 |  |  |
| MD in thalamic radiations | CP-MDD- VS CP-MDD+ | -0.045 | -0.031 |  |  |
| MD in thalamic radiations | CP-MDD- VS CP+MDD- | 0.009 | -0.009 |  |  |
| MD in thalamic radiations | CP-MDD- VS CP+MDD+ | **-0.056\*** | -0.04 |  |  |
| MD in thalamic radiations | CP+MDD- VS CP-MDD+ | **-0.054\*** | -0.022 |  |  |
| MD in thalamic radiations | CP+MDD- VS CP+MDD+ | **-0.065\*** | -0.031 |  |  |
| MD in thalamic radiations | CP+MDD+ VS CP-MDD+ | 0.011 | 0.009 |  |  |

Supplementary Table 9 Full results for association and sex-interaction analysis between brain structure and comorbidity groups in full, female and male sample. \*, \*\* and \*\*\* represent significant results at pFDR<.05, pFDR<.01 and pFDR<.001, respectively, respectively (FDR correction not applied to p-values from sex-interaction analysis). Significant results are highlighted in bold.