

Descriptions of Additional Supplementary Files

Supplementary Data 1

Description: Genome-wide significant associations ($p_{\text{Discovery}} < 1.09 \times 10^{-9}$) of the global cortex.

Supplementary Data 2

Description: Genome-wide significant associations ($p_{\text{Discovery}} < 1.09 \times 10^{-9}$) of regional cortical thickness.

Supplementary Data 3

Description: Genome-wide significant associations ($p_{\text{Discovery}} < 1.09 \times 10^{-9}$) of regional cortical surface area.

Supplementary Data 4

Description: Genome-wide significant associations ($p_{\text{Discovery}} < 1.09 \times 10^{-9}$) of regional cortical volume.

Supplementary Data 5

Description: Genomic control λ_{GC} , LDSR intercept and LDSR ratio.

Supplementary Data 6

Description: Genome-wide significant associations ($p_{\text{Discovery}} < 1.09 \times 10^{-9}$) of surface area and volume in different cortical regions.

Supplementary Data 7

Description: Genome-wide significant associations ($p_{\text{Discovery}} < 1.09 \times 10^{-9}$) within the same cortical region.

Supplementary Data 8

Description: Genome-wide significant associations ($p_{\text{Discovery}} < 1.09 \times 10^{-9}$) of cortical thickness, surface area and volume and corresponding UKBB p-values from Elliott, L.T. et al. 2018 and Zhao, B. et al. 2019.

Supplementary Data 9

Description: Polygenic risk score (PRS) prediction in 7800 out-of-sample individuals from the UK Biobank.

Supplementary Data 10

Description: GWAScatalog (as implemented in FUMA) results for lead SNPs ($P_{\text{Discovery}} < 1.09 \times 10^{-9}$) - cortical thickness.

Supplementary Data 11

Description: GWAScatalog (as implemented in FUMA) results for lead SNPs ($P_{\text{Discovery}} < 1.09 \times 10^{-9}$) - cortical surface area.

Supplementary Data 12

Description: GWAScatalog (as implemented in FUMA) results for lead SNPs ($P_{\text{Discovery}} < 1.09 \times 10^{-9}$) - cortical volume.

Supplementary Data 13

Description: Annotation of genes mapped to independent lead SNPs - cortical thickness.

Supplementary Data 14

Description: Annotation of genes mapped to independent lead SNPs - cortical surface area.

Supplementary Data 15

Description: Annotation of genes mapped to independent lead SNPs - cortical volume.

Supplementary Data 16

Description: MAGMA gene-based analyses (as implemented in FUMA) – cortical thickness.

Supplementary Data 17

Description: MAGMA gene-based analyses (as implemented in FUMA) - cortical surface area.

Supplementary Data 18

Description: MAGMA gene-based analyses (as implemented in FUMA) - cortical volume.

Supplementary Data 19

Description: Association between lead SNPs of cortical thickness, surface area and volume ($p_{\text{Discovery}} < 1.09 \times 10^{-9}$) and expression QTL in autopsied brains from the ROSMAP sample.

Supplementary Data 20

Description: MAGMA gene-set analyses (as implemented in FUMA).

Supplementary Data 21

Description: Heritability estimates.

Supplementary Data 22

Description: Partitioned heritability - functional annotation.

Supplementary Data 23

Description: Partitioned heritability - cell-type-specific annotation.

Supplementary Data 24

Description: Genetic correlation between cortical thickness, surface area and volume within regions.

Supplementary Data 25

Description: Genetic correlation of cortical thickness between regions.

Supplementary Data 26

Description: Genetic correlation of surface area between regions.

Supplementary Data 27

Description: Genetic correlation of volume between regions.

Supplementary Data 28

Description: Genetic correlation between cortical thickness and other GWAS phenotypes.

Supplementary Data 29

Description: Genetic correlation between cortical surface area and other GWAS phenotypes.

Supplementary Data 30

Description: Genetic correlation between cortical volume and other GWAS phenotypes.

Supplementary Data 31

Description: Description of genes associated with global and regional cortical thickness, surface area and volume.

Supplementary Data 32

Description: Population characteristics.

Supplementary Data 33

Description: Genotyping, quality control, imputation and association.

Supplementary Data 34

Description: Image acquisition and processing.

Supplementary Data 35

Description: Descriptive statistics of cortical thickness (mm).

Supplementary Data 36

Description: Descriptive statistics of cortical surface area (mm²).

Supplementary Data 37

Description: Descriptive statistics of cortical volume (mm³).