**Supplemental Materials**

**Table S1.1.** Group differences in cognitive scores between the Preterm and Control group.

**Table S1.2.** Group differences in psychopathology scores between the Preterm and Control group.

**Table S1.3.** Group differences in cognitive scores between the Preterm and Control group (LME).

**Table S1.4.** Group differences in psychopathology scores between the Preterm and Control group (LME).

**Table S1.5.** Group differences in cognitive scores between the Preterm and Control group (Twin pairs-matched).

**Table S1.6.** Group differences in psychopathology scores between the Preterm and Control group (Twin pairs-matched).

**Table S1.7.** Interaction effects (group×sex) on cognitive function.

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**Table S1.9.** Group differences in cognitive scores between the Preterm and Control group (Multiple imputation).

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**Table S2.1.** Group differences of cortical thickness between the Preterm and Control group.

**Table S2.2.** Group differences of cortical volume between the Preterm and Control group.

**Table S2.3.** Group differences of subcortical volume between the Preterm and Control group.

**Table S2.4.** Group differences of fiber tract volume between the Preterm and Control group.

**Table S2.5.** Group differences of cortical thickness between the Preterm and Control group (LME).

**Table S2.6.** Group differences of cortical volume between the Preterm and Control group (LME).

**Table S2.7.** Group differences of subcortical volume between the Preterm and Control group (LME).

**Table S2.8.** Group differences of fiber tract volume between the Preterm and Control group (LME).

**Table S2.9.** Group differences of cortical thickness between the Preterm and Control group (Twin pairs-matched).

**Table S2.10.** Group differences of cortical volume between the Preterm and Control group (Twin pairs-matched).

**Table S2.11.** Group differences of subcortical volume between the Preterm and Control group (Twin pairs-matched).

**Table S2.12.** Group differences of fiber tract volume between the Preterm and Control group (Twin pairs-matched).

**Table S2.13.** Interaction effects (group×sex) on cortical thickness.

**Table S2.14.** Interaction effects (group×sex) on cortical volume.

**Table S2.15.** Interaction effects (group×sex) on subcortical volume.

**Table S2.16.** Interaction effects (group×sex) on fiber tract volume.

**Table S2.17.** Group differences of cortical thickness between the Preterm and Control group (Multiple imputation).

**Table S2.18.** Group differences of cortical volume between the Preterm and Control group (Multiple imputation).

**Table S2.19.** Group differences of subcortical volume between the Preterm and Control group (Multiple imputation).

**Table S2.20.** Group differences of fiber tract volume between the Preterm and Control group (Multiple imputation).

**Table S3.1.** Partial correlation between gestational age and psychopathological differences in the Preterm group.

**Table S3.2.** Partial correlation between gestational age and cognitive differences in the Preterm group.

**Table S3.3.** Partial correlation between birth weight and psychopathological differences in the Preterm group.

**Table S3.4.** Partial correlation between birth weight and cognitive differences in the Preterm group.

**Table S4.1.** Partial correlation between gestational age and differences in cortical thickness in the Preterm group.

**Table S4.2.** Partial correlation between gestational age and differences in cortical volume in the Preterm group.

**Table S4.3.** Partial correlation between gestational age and differences in subcortical volume in the Preterm group.

**Table S4.4.** Partial correlation between gestational age and differences in fiber tract volume in the Preterm group.

**Table S4.5.** Partial correlation between birth weight and differences in cortical thickness in the Preterm group.

**Table S4.6.** Partial correlation between birth weight and differences in cortical volume in the Preterm group.

**Table S4.7.** Partial correlation between birth weight and differences in subcortical volume in the Preterm group.

**Table S4.8.** Partial correlation between birth weight and differences in fiber tract volume in the Preterm group.

**Table S5.1.** Partial correlation between psychopathological differences and differences in cortical thickness in the Preterm group.

**Table S5.2.** Partial correlation between psychopathological differences and differences in cortical volume in the Preterm group.

**Table S5.3.** Partial correlation between psychopathological differences and differences in subcortical volume in the Preterm group.

**Table S5.4.** Partial correlation between psychopathological differences and differences in fiber tract volume in the Preterm group.

**Table S6.1.** Partial correlation between cognitive differences and differences in cortical thickness in the Preterm group.

**Table S6.2.** Partial correlation between cognitive differences and differences in cortical volume in the Preterm group.

**Table S6.3.** Partial correlation between cognitive differences and differences in subcortical volume in the Preterm group.

**Table S6.4.** Partial correlation between cognitive differences and differences in fiber tract volume in the Preterm group.

**Table S7.1.** Partial correlation between differences in fiber tract volume and cortical volumes in the Preterm group.

**Table S7.2.** Partial correlation between differences in fiber tract volume and subcortical volumes in the Preterm group.

**Figure S1.** Flow diagram of study participants.

**Table S1.1. Group differences in cognitive scores between the Preterm and Control group (Bonferroni corrected, *P* < 0.005).**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Nihtb Cognitive measurement** | **Preterm** | **Control** | **Cohen’s d** | ***p* value** |
| **( N = 1706 )** | **( N = 1865 )** |
| **( Mean ± SE)** | **( Mean ± SE)** |
| nihtbx\_picvocab | 84.961 ± 7.940 | 85.653 ± 7.591 | -0.089 | **0.0037** |
| nihtbx\_flanker | 94.317 ± 9.143 | 95.262 ± 8.172 | -0.109 | **0.0017** |
| nihtbx\_list | 96.935 ± 11.956 | 97.888 ± 11.166 | -0.083 | 0.0128 |
| nihtbx\_cardsort | 93.330 ± 9.025 | 93.626 ± 9.001 | -0.033 | 0.4232 |
| nihtbx\_pattern | 88.518 ± 15.085 | 89.449 ± 13.983 | -0.064 | 0.0721 |
| nihtbx\_picture | 103.432 ± 12.250 | 103.712 ± 11.849 | -0.023 | 0.5231 |
| nihtbx\_reading | 90.823 ± 6.424 | 91.478 ± 6.260 | -0.103 | **0.0016** |
| nihtbx\_fluidcomp | 92.195 ± 10.571 | 93.183 ± 9.767 | -0.097 | **0.0038** |
| nihtbx\_cryst | 86.605 ± 6.658 | 87.334 ± 6.403 | -0.112 | **0.0003** |
| nihtbx\_totalcomp | 86.741 ± 8.796 | 87.754 ± 8.158 | -0.120 | **0.0001** |

*Note: Significant effects are indicated in bold.*

**Table S1.2.** **Group differences in psychopathology scores between the Preterm and Control group (Bonferroni corrected, *P* < 0.0025).**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CBCL Category** | **Preterm** | **Control** | **Cohen’s d** | ***p* value** |
| **( N = 1706 )** | **( N = 1865 )** |
| **( Mean ± SE)** | **( Mean ± SE)** |
| cbcl\_scr\_syn\_anxdep | 2.536 ± 3.073 | 2.142 ± 2.685 | 0.137 | **0.0001** |
| cbcl\_scr\_syn\_withdep | 1.022 ± 1.716 | 0.847 ± 1.520 | 0.109 | **0.0013** |
| cbcl\_scr\_syn\_somatic | 1.504 ± 1.987 | 1.204 ± 1.642 | 0.165 | **< 0.0001** |
| cbcl\_scr\_syn\_social | 1.564 ± 2.268 | 1.307 ± 1.935 | 0.122 | **0.0003** |
| cbcl\_scr\_syn\_thought | 1.513 ± 2.149 | 1.337 ± 1.864 | 0.087 | 0.0109 |
| cbcl\_scr\_syn\_attention | 2.840 ± 3.357 | 2.457 ± 3.061 | 0.120 | **0.0003** |
| cbcl\_scr\_syn\_rulebreak | 1.086 ± 1.775 | 1.036 ± 1.647 | 0.029 | 0.3735 |
| cbcl\_scr\_syn\_aggressive | 3.178 ± 4.325 | 2.780 ± 3.835 | 0.098 | 0.0033 |
| cbcl\_scr\_syn\_internal | 5.062 ± 5.565 | 4.193 ± 4.748 | 0.169 | **< 0.0001** |
| cbcl\_scr\_syn\_external | 4.264 ± 5.764 | 3.816 ± 5.142 | 0.082 | 0.0129 |
| cbcl\_scr\_syn\_totprob | 17.578 ± 17.621 | 15.247 ± 15.273 | 0.142 | **< 0.0001** |
| cbcl\_scr\_dsm5\_depress | 1.202 ± 2.026 | 1.006 ± 1.709 | 0.105 | **0.0019** |
| cbcl\_scr\_dsm5\_anxdisord | 2.091 ± 2.467 | 1.717 ± 2.127 | 0.163 | **< 0.0001** |
| cbcl\_scr\_dsm5\_somaticpr | 1.094 ± 1.521 | 0.926 ± 1.316 | 0.119 | **0.0004** |
| cbcl\_scr\_dsm5\_adhd | 2.520 ± 2.881 | 2.190 ± 2.618 | 0.120 | **0.0003** |
| cbcl\_scr\_dsm5\_opposit | 1.738 ± 2.007 | 1.597 ± 1.946 | 0.071 | 0.0347 |
| cbcl\_scr\_dsm5\_conduct | 1.226 ± 2.319 | 1.094 ± 2.059 | 0.060 | 0.0614 |
| cbcl\_scr\_07\_sct | 0.469 ± 0.953 | 0.406 ± 0.847 | 0.070 | 0.0462 |
| cbcl\_scr\_07\_ocd | 1.299 ± 1.792 | 1.135 ± 1.613 | 0.096 | 0.0044 |
| cbcl\_scr\_07\_stress | 2.820 ± 3.352 | 2.377 ± 2.895 | 0.142 | **< 0.0001** |

*Note: Significant effects are indicated in bold.*

**Table S1.3. Group differences in cognitive scores between the Preterm and Control group** **(LME) (Bonferroni corrected, *P* < 0.005).**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Nihtb Cognitive measurement** | **Two-sample t test** | | **Linear mixed-effect model** | |
| **Cohen’s d** | ***p* value** | **Cohen’s d** | ***p* value** |
| nihtbx\_picvocab | -0.089 | **0.0037** | -0.101 | 0.0196 |
| nihtbx\_flanker | -0.109 | **0.0017** | -0.119 | **0.0018** |
| nihtbx\_list | -0.083 | 0.0128 | -0.089 | 0.0289 |
| nihtbx\_cardsort | -0.033 | 0.4232 | -0.029 | 0.4564 |
| nihtbx\_pattern | -0.064 | 0.0721 | -0.067 | 0.0841 |
| nihtbx\_picture | -0.023 | 0.5231 | -0.029 | 0.4818 |
| nihtbx\_reading | -0.103 | **0.0016** | -0.132 | 0.0069 |
| nihtbx\_fluidcomp | -0.097 | **0.0038** | -0.114 | 0.0114 |
| nihtbx\_cryst | -0.112 | **0.0003** | -0.147 | **0.0023** |
| nihtbx\_totalcomp | -0.120 | **0.0001** | -0.153 | **0.0015** |

*Note: Significant effects are indicated in bold.*

**Table S1.4. Group differences in psychopathology scores between the Preterm and Control group (LME) (Bonferroni corrected, *P* < 0.0025).**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CBCL Category** | **Two-sample t test** | | **Linear mixed-effect model** | |
| **Cohen’s d** | ***p* value** | **Cohen’s d** | ***p* value** |
| cbcl\_scr\_syn\_anxdep | 0.137 | **0.0001** | 0.180 | **0.0001** |
| cbcl\_scr\_syn\_withdep | 0.109 | **0.0013** | 0.124 | **0.0016** |
| cbcl\_scr\_syn\_somatic | 0.165 | **< 0.0001** | 0.223 | **< 0.0001** |
| cbcl\_scr\_syn\_social | 0.122 | **0.0003** | 0.175 | **0.0003** |
| cbcl\_scr\_syn\_thought | 0.087 | 0.0109 | 0.124 | 0.0038 |
| cbcl\_scr\_syn\_attention | 0.120 | **0.0003** | 0.169 | **0.0001** |
| cbcl\_scr\_syn\_rulebreak | 0.029 | 0.3735 | 0.048 | 0.3146 |
| cbcl\_scr\_syn\_aggressive | 0.098 | 0.0033 | 0.140 | 0.0036 |
| cbcl\_scr\_syn\_internal | 0.169 | **< 0.0001** | 0.238 | **< 0.0001** |
| cbcl\_scr\_syn\_external | 0.082 | 0.0129 | 0.125 | 0.0123 |
| cbcl\_scr\_syn\_totprob | 0.142 | **< 0.0001** | 0.249 | **< 0.0001** |
| cbcl\_scr\_dsm5\_depress | 0.105 | **0.0019** | 0.136 | **0.0022** |
| cbcl\_scr\_dsm5\_anxdisord | 0.163 | **< 0.0001** | 0.214 | **< 0.0001** |
| cbcl\_scr\_dsm5\_somaticpr | 0.119 | **0.0004** | 0.158 | **0.0004** |
| cbcl\_scr\_dsm5\_adhd | 0.120 | **0.0003** | 0.170 | **0.0001** |
| cbcl\_scr\_dsm5\_opposit | 0.071 | 0.0347 | 0.097 | 0.0348 |
| cbcl\_scr\_dsm5\_conduct | 0.060 | 0.0614 | 0.089 | 0.0618 |
| cbcl\_scr\_07\_sct | 0.070 | 0.0462 | 0.086 | 0.0276 |
| cbcl\_scr\_07\_ocd | 0.096 | 0.0044 | 0.132 | 0.0033 |
| cbcl\_scr\_07\_stress | 0.142 | **< 0.0001** | 0.211 | **< 0.0001** |

*Note: Significant effects are indicated in bold.*

**Table S1.5. Group differences in cognitive scores between the Preterm and Control group (Twin pairs-matched) (Bonferroni corrected, P < 0.005).**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Nihtb Cognitive measurement** | **Pre ( N = 1706 ) vs. Con ( N = 1865 )** | | **Pre ( N = 1171 ) vs. Con ( N = 1231 )** | |
| **Cohen’s d** | ***p* value** | **Cohen’s d** | ***p* value** |
| nihtbx\_picvocab | -0.089 | **0.0037** | -0.051 | 0.1632 |
| nihtbx\_flanker | -0.109 | **0.0017** | -0.099 | 0.0128 |
| nihtbx\_list | -0.083 | 0.0128 | -0.044 | 0.2717 |
| nihtbx\_cardsort | -0.033 | 0.4232 | 0.009 | 0.8171 |
| nihtbx\_pattern | -0.064 | 0.0721 | -0.045 | 0.2558 |
| nihtbx\_picture | -0.023 | 0.5231 | 0.037 | 0.3502 |
| nihtbx\_reading | -0.103 | **0.0016** | -0.035 | 0.3551 |
| nihtbx\_fluidcomp | -0.097 | **0.0038** | -0.048 | 0.2099 |
| nihtbx\_cryst | -0.112 | **0.0003** | -0.056 | 0.1207 |
| nihtbx\_totalcomp | -0.120 | **0.0001** | -0.053 | 0.1428 |

*Note: Significant effects are indicated in bold.*

**Table S1.6. Group differences in psychopathology scores between the Preterm and Control group (Twin pairs-matched) (Bonferroni corrected, *P* < 0.0025).**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CBCL Category** | **Pre ( N = 1706 ) vs. Con ( N = 1865 )** | | **Pre ( N = 1171 ) vs. Con ( N = 1231 )** | |
| **Cohen’s d** | ***p* value** | **Cohen’s d** | ***p* value** |
| cbcl\_scr\_syn\_anxdep | 0.137 | **0.0001** | 0.181 | **< 0.0001** |
| cbcl\_scr\_syn\_withdep | 0.109 | **0.0013** | 0.080 | 0.0617 |
| cbcl\_scr\_syn\_somatic | 0.165 | **< 0.0001** | 0.189 | **< 0.0001** |
| cbcl\_scr\_syn\_social | 0.122 | **0.0003** | 0.139 | **0.0005** |
| cbcl\_scr\_syn\_thought | 0.087 | 0.0109 | 0.136 | **0.0011** |
| cbcl\_scr\_syn\_attention | 0.120 | **0.0003** | 0.170 | **< 0.0001** |
| cbcl\_scr\_syn\_rulebreak | 0.029 | 0.3735 | 0.042 | 0.2927 |
| cbcl\_scr\_syn\_aggressive | 0.098 | 0.0033 | 0.116 | 0.0068 |
| cbcl\_scr\_syn\_internal | 0.169 | **< 0.0001** | 0.189 | **< 0.0001** |
| cbcl\_scr\_syn\_external | 0.082 | 0.0129 | 0.099 | 0.0194 |
| cbcl\_scr\_syn\_totprob | 0.142 | **< 0.0001** | 0.174 | **0.0001** |
| cbcl\_scr\_dsm5\_depress | 0.105 | **0.0019** | 0.136 | **0.0018** |
| cbcl\_scr\_dsm5\_anxdisord | 0.163 | **< 0.0001** | 0.199 | **< 0.0001** |
| cbcl\_scr\_dsm5\_somaticpr | 0.119 | **0.0004** | 0.144 | **0.0018** |
| cbcl\_scr\_dsm5\_adhd | 0.120 | **0.0003** | 0.194 | **< 0.0001** |
| cbcl\_scr\_dsm5\_opposit | 0.071 | 0.0347 | 0.087 | 0.0456 |
| cbcl\_scr\_dsm5\_conduct | 0.060 | 0.0614 | 0.065 | 0.1136 |
| cbcl\_scr\_07\_sct | 0.070 | 0.0462 | 0.093 | 0.0258 |
| cbcl\_scr\_07\_ocd | 0.096 | 0.0044 | 0.145 | **0.0009** |
| cbcl\_scr\_07\_stress | 0.142 | **< 0.0001** | 0.174 | **< 0.0001** |

*Note: Significant effects are indicated in bold.*

**Table S1.7. Interaction effects (group×sex) on cognitive function. (Bonferroni corrected, *P* < 0.005).**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Nihtb Cognitive measurement** | **Group effect** | | **Sex effect** | | **Interaction effect** | |
| **F value** | ***p* value** | **F value** | ***p* value** | **F value** | ***p* value** |
| Picture Vocabulary Test | 8.617 | **0.0034** | 1.221 | 0.2693 | 0.426 | 0.5138 |
| Flanker Inhibitory Control and Attention Test | 9.971 | **0.0016** | 0.190 | 0.6633 | 0.237 | 0.6268 |
| List Sorting Working Memory Test | 6.170 | 0.0130 | 6.610 | 0.0102 | 0.006 | 0.9363 |
| Dimensional Change Card Sort Test | 0.583 | 0.4451 | 12.756 | **0.0004** | 0.510 | 0.4750 |
| Pattern Comparison Processing Speed Test | 2.983 | 0.0842 | 25.912 | **< 0.0001** | 1.901 | 0.1680 |
| Picture Sequence Memory Test | 0.511 | 0.4746 | 14.429 | **0.0001** | 2.329 | 0.1271 |
| Oral Reading Recognition Test | 9.957 | **0.0016** | 0.434 | 0.5102 | 0.004 | 0.9488 |
| Cognition Fluid Composite Score | 8.292 | **0.0040** | 12.725 | **0.0004** | 0.035 | 0.8508 |
| Crystallized Composite Language Score | 13.492 | **0.0002** | 0.047 | 0.8293 | 0.094 | 0.7593 |
| Cognition Total Composite | 14.620 | **0.0001** | 7.050 | 0.0080 | 0.000 | 0.9938 |

*Note: Significant effects are indicated in bold.*

**Table S1.8. Interaction effects (group×sex) on psychopathological risk. (Bonferroni corrected, *P* < 0.0025).**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CBCL Category** | **Group effect** | | **Sex effect** | | **Interaction effect** | |
| **F value** | ***p* value** | **F value** | ***p* value** | **F value** | ***p* value** |
| Anxious/Depressed | 15.897 | **0.0001** | 1.301 | 0.2542 | 0.277 | 0.5989 |
| Withdrawn Problems | 10.616 | **0.0011** | 18.152 | **< 0.0001** | 0.394 | 0.5302 |
| Somatic Problems | 23.711 | **< 0.0001** | 2.115 | 0.1460 | 0.458 | 0.4987 |
| Social Problems | 12.711 | **0.0004** | 16.216 | **0.0001** | 2.264 | 0.1325 |
| Thought Problems | 6.091 | 0.0136 | 54.616 | **< 0.0001** | 1.930 | 0.1648 |
| Attention Problems | 12.528 | **0.0004** | 133.691 | **< 0.0001** | 3.210 | 0.0733 |
| Rule-Breaking Behavior | 0.855 | 0.3553 | 70.334 | **< 0.0001** | 0.443 | 0.5057 |
| Aggressive behavior | 8.510 | 0.0036 | 55.429 | **< 0.0001** | 0.078 | 0.7803 |
| Internalizing Problems | 24.777 | **< 0.0001** | 2.128 | 0.1447 | 0.114 | 0.7352 |
| Externalizing Problems | 6.175 | 0.0130 | 67.664 | **< 0.0001** | 0.000 | 0.9984 |
| Total Problems | 17.622 | **< 0.0001** | 65.159 | **< 0.0001** | 1.035 | 0.3091 |
| DSM-5\_Depressive Problems | 9.314 | **0.0023** | 22.725 | **< 0.0001** | 1.094 | 0.2956 |
| DSM-5\_Anxiety Problems | 22.381 | **< 0.0001** | 0.646 | 0.4216 | 1.198 | 0.2737 |
| DSM-5\_Somatic Problems | 12.224 | **0.0005** | 5.906 | 0.0151 | 0.224 | 0.6358 |
| DSM-5\_ADHD | 12.712 | **0.0004** | 129.127 | **< 0.0001** | 2.763 | 0.0966 |
| DSM-5\_Oppositional Defiant Problems | 4.496 | 0.0340 | 66.919 | **< 0.0001** | 0.045 | 0.8311 |
| DSM-5\_Conduct Problems | 3.602 | 0.0578 | 74.906 | **< 0.0001** | 0.303 | 0.5822 |
| 07\_Sluggish Cognitive Tempo | 3.728 | 0.0536 | 16.011 | **0.0001** | 1.277 | 0.2585 |
| 07\_Obsessive-Compulsive Problems | 7.914 | 0.0049 | 14.226 | **0.0002** | 0.287 | 0.5919 |
| 07\_Stress Problems | 17.499 | **< 0.0001** | 29.822 | **< 0.0001** | 1.062 | 0.3029 |

*Note: Significant effects are indicated in bold.*

**Table S1.9. Group differences in cognitive scores between the Preterm and Control group (Multiple imputation) (Bonferroni corrected, *P* < 0.005).**

|  |  |  |
| --- | --- | --- |
| **Nihtb Cognitive measurement** | **Complete cases**  **Pre ( N = 1706 ) vs. Con ( N = 1865 )** | **Multiple imputation**  **Pre ( N = 2107 ) vs. Con ( N = 1865 )** |
|
| ***p* value** | ***p* value** |
| nihtbx\_picvocab | **0.0037** | 0.0482 |
| nihtbx\_flanker | **0.0017** | **0.0002** |
| nihtbx\_list | 0.0128 | 0.0531 |
| nihtbx\_cardsort | 0.4232 | 0.0984 |
| nihtbx\_pattern | 0.0721 | 0.0252 |
| nihtbx\_picture | 0.5231 | 0.2423 |
| nihtbx\_reading | **0.0016** | 0.0444 |
| nihtbx\_fluidcomp | **0.0038** | **0.0004** |
| nihtbx\_cryst | **0.0003** | 0.0164 |
| nihtbx\_totalcomp | **0.0001** | **0.0002** |

*Note: Significant effects are indicated in bold.*

**Table S1.10. Group differences in psychopathology scores between the Preterm and Control group (Multiple imputation) (Bonferroni corrected, *P* < 0.0025).**

|  |  |  |
| --- | --- | --- |
| **CBCL Category** | **Complete cases**  **Pre ( N = 1706 ) vs. Con ( N = 1865 )** | **Multiple imputation**  **Pre ( N = 2107 ) vs. Con ( N = 1865 )** |
|
| ***p* value** | ***p* value** |
| cbcl\_scr\_syn\_anxdep | **0.0001** | **< 0.0001** |
| cbcl\_scr\_syn\_withdep | **0.0013** | **< 0.0001** |
| cbcl\_scr\_syn\_somatic | **< 0.0001** | **< 0.0001** |
| cbcl\_scr\_syn\_social | **0.0003** | **< 0.0001** |
| cbcl\_scr\_syn\_thought | 0.0109 | **< 0.0001** |
| cbcl\_scr\_syn\_attention | **0.0003** | **< 0.0001** |
| cbcl\_scr\_syn\_rulebreak | 0.3735 | 0.0128 |
| cbcl\_scr\_syn\_aggressive | 0.0033 | **< 0.0001** |
| cbcl\_scr\_syn\_internal | **< 0.0001** | **< 0.0001** |
| cbcl\_scr\_syn\_external | 0.0129 | **0.0001** |
| cbcl\_scr\_syn\_totprob | **< 0.0001** | **< 0.0001** |
| cbcl\_scr\_dsm5\_depress | **0.0019** | **< 0.0001** |
| cbcl\_scr\_dsm5\_anxdisord | **< 0.0001** | **< 0.0001** |
| cbcl\_scr\_dsm5\_somaticpr | **0.0004** | **< 0.0001** |
| cbcl\_scr\_dsm5\_adhd | **0.0003** | **< 0.0001** |
| cbcl\_scr\_dsm5\_opposit | 0.0347 | **0.0001** |
| cbcl\_scr\_dsm5\_conduct | 0.0614 | 0.0042 |
| cbcl\_scr\_07\_sct | 0.0462 | **0.0001** |
| cbcl\_scr\_07\_ocd | 0.0044 | **< 0.0001** |
| cbcl\_scr\_07\_stress | **< 0.0001** | **< 0.0001** |

*Note: Significant effects are indicated in bold.*

**Table S2.1. Group differences of cortical thickness between the Preterm and Control group (Bonferroni corrected, *P* < 0.0007).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cortical thickness ( mm )** |  | **Preterm**  **( N = 1706 )** | **Control**  **( N = 1865 )** | **Cohen’s d** | ***p* value** |
| **( Mean ± SE )** | **( Mean ± SE )** |
| Banks of Superior Temporal Sulcus | left hemisphere | 2.801 ± 0.17 | 2.809 ± 0.167 | -0.048 | 0.1036 |
| right hemisphere | 2.893 ± 0.178 | 2.904 ± 0.177 | -0.061 | 0.0248 |
| Caudal anterior cingulate | left hemisphere | 2.904 ± 0.242 | 2.885 ± 0.233 | 0.082 | 0.1342 |
| right hemisphere | 2.751 ± 0.205 | 2.744 ± 0.207 | 0.032 | 0.5685 |
| Caudal middle frontal | left hemisphere | 2.882 ± 0.143 | 2.877 ± 0.152 | 0.035 | 0.4745 |
| right hemisphere | 2.846 ± 0.144 | 2.842 ± 0.159 | 0.021 | 0.8587 |
| Cuneus | left hemisphere | 2.067 ± 0.157 | 2.059 ± 0.149 | 0.052 | 0.1147 |
| right hemisphere | 2.085 ± 0.163 | 2.081 ± 0.159 | 0.024 | 0.5394 |
| Entorhinal | left hemisphere | 3.463 ± 0.333 | 3.436 ± 0.32 | 0.080 | 0.0058 |
| right hemisphere | 3.582 ± 0.379 | 3.556 ± 0.375 | 0.069 | 0.0276 |
| Fusiform | left hemisphere | 2.966 ± 0.123 | 2.955 ± 0.13 | 0.081 | 0.0172 |
| right hemisphere | 2.975 ± 0.13 | 2.964 ± 0.137 | 0.081 | 0.0363 |
| Inferior parietal | left hemisphere | 2.782 ± 0.144 | 2.781 ± 0.154 | 0.012 | 0.6093 |
| right hemisphere | 2.814 ± 0.144 | 2.81 ± 0.153 | 0.027 | 0.9113 |
| Inferior temporal | left hemisphere | 3.094 ± 0.161 | 3.081 ± 0.165 | 0.082 | 0.0324 |
| right hemisphere | 3.12 ± 0.161 | 3.11 ± 0.16 | 0.063 | 0.1614 |
| Isthmus cingulate | left hemisphere | 2.713 ± 0.196 | 2.697 ± 0.181 | 0.084 | 0.0519 |
| right hemisphere | 2.647 ± 0.19 | 2.654 ± 0.18 | -0.038 | 0.1832 |
| Lateral occipital | left hemisphere | 2.358 ± 0.147 | 2.339 ± 0.151 | 0.129 | 0.0009 |
| right hemisphere | 2.421 ± 0.157 | 2.401 ± 0.155 | 0.131 | **0.0003** |
| Lateral orbitofrontal | left hemisphere | 3.007 ± 0.16 | 2.99 ± 0.153 | 0.113 | 0.0026 |
| right hemisphere | 2.972 ± 0.166 | 2.963 ± 0.161 | 0.057 | 0.1235 |
| Lingual | left hemisphere | 2.192 ± 0.137 | 2.192 ± 0.132 | -0.002 | 0.5569 |
| right hemisphere | 2.231 ± 0.138 | 2.229 ± 0.136 | 0.015 | 0.2921 |
| Medial orbitofrontal | left hemisphere | 2.745 ± 0.171 | 2.718 ± 0.166 | 0.158 | **< 0.0001** |
| right hemisphere | 2.772 ± 0.182 | 2.746 ± 0.177 | 0.143 | **0.0001** |
| Middle temporal | left hemisphere | 3.196 ± 0.178 | 3.193 ± 0.189 | 0.015 | 0.8643 |
| right hemisphere | 3.218 ± 0.177 | 3.219 ± 0.179 | -0.007 | 0.2298 |
| Parahippocampal | left hemisphere | 3.025 ± 0.287 | 2.989 ± 0.281 | 0.127 | **0.0004** |
| right hemisphere | 2.97 ± 0.242 | 2.949 ± 0.248 | 0.088 | 0.0279 |
| Paracentral | left hemisphere | 2.758 ± 0.159 | 2.755 ± 0.161 | 0.023 | 0.8459 |
| right hemisphere | 2.755 ± 0.144 | 2.753 ± 0.142 | 0.019 | 0.8132 |
| Pars opercularis | left hemisphere | 2.925 ± 0.138 | 2.915 ± 0.145 | 0.071 | 0.0575 |
| right hemisphere | 2.915 ± 0.151 | 2.903 ± 0.148 | 0.078 | 0.0480 |
| Pars orbitalis | left hemisphere | 3.125 ± 0.212 | 3.132 ± 0.204 | -0.033 | 0.1913 |
| right hemisphere | 3.086 ± 0.217 | 3.102 ± 0.201 | -0.075 | 0.0122 |
| Pars triangularis | left hemisphere | 2.822 ± 0.155 | 2.82 ± 0.152 | 0.013 | 0.8091 |
| right hemisphere | 2.808 ± 0.168 | 2.802 ± 0.159 | 0.041 | 0.4399 |
| Pericalcarine | left hemisphere | 1.779 ± 0.149 | 1.764 ± 0.151 | 0.105 | **0.0005** |
| right hemisphere | 1.767 ± 0.151 | 1.754 ± 0.15 | 0.085 | 0.0057 |
| Postcentral | left hemisphere | 2.338 ± 0.156 | 2.334 ± 0.155 | 0.023 | 0.8268 |
| right hemisphere | 2.305 ± 0.16 | 2.3 ± 0.158 | 0.029 | 0.5903 |
| Posterior cingulate | left hemisphere | 2.782 ± 0.155 | 2.78 ± 0.155 | 0.016 | 0.8250 |
| right hemisphere | 2.732 ± 0.137 | 2.728 ± 0.138 | 0.028 | 0.6307 |
| Precentral | left hemisphere | 2.808 ± 0.142 | 2.803 ± 0.149 | 0.035 | 0.6124 |
| right hemisphere | 2.768 ± 0.14 | 2.764 ± 0.147 | 0.025 | 0.7498 |
| Precuneus | left hemisphere | 2.721 ± 0.129 | 2.712 ± 0.129 | 0.066 | 0.2328 |
| right hemisphere | 2.726 ± 0.13 | 2.717 ± 0.13 | 0.072 | 0.0782 |
| Rostral anterior cingulate | left hemisphere | 3.194 ± 0.213 | 3.168 ± 0.213 | 0.122 | 0.0035 |
| right hemisphere | 3.059 ± 0.222 | 3.053 ± 0.217 | 0.031 | 0.3759 |
| Rostral middle frontal | left hemisphere | 2.744 ± 0.153 | 2.737 ± 0.152 | 0.051 | 0.3549 |
| right hemisphere | 2.695 ± 0.151 | 2.689 ± 0.15 | 0.039 | 0.7368 |
| Superior frontal | left hemisphere | 3.156 ± 0.153 | 3.143 ± 0.153 | 0.089 | 0.0794 |
| right hemisphere | 3.107 ± 0.144 | 3.1 ± 0.146 | 0.050 | 0.5137 |
| Superior parietal | left hemisphere | 2.504 ± 0.133 | 2.493 ± 0.141 | 0.079 | 0.0788 |
| right hemisphere | 2.505 ± 0.133 | 2.496 ± 0.139 | 0.063 | 0.1921 |
| Superior temporal | left hemisphere | 3.129 ± 0.171 | 3.109 ± 0.174 | 0.117 | 0.0008 |
| right hemisphere | 3.145 ± 0.164 | 3.132 ± 0.162 | 0.076 | 0.0676 |
| Supramarginal | left hemisphere | 2.879 ± 0.162 | 2.87 ± 0.171 | 0.056 | 0.4629 |
| right hemisphere | 2.881 ± 0.166 | 2.864 ± 0.173 | 0.100 | 0.0220 |
| Frontalpole | left hemisphere | 3.233 ± 0.311 | 3.214 ± 0.317 | 0.063 | 0.2222 |
| right hemisphere | 3.198 ± 0.311 | 3.18 ± 0.298 | 0.061 | 0.2107 |
| Temporalpole | left hemisphere | 3.82 ± 0.289 | 3.807 ± 0.302 | 0.045 | 0.2449 |
| right hemisphere | 3.952 ± 0.305 | 3.938 ± 0.309 | 0.044 | 0.2977 |
| Transverse temporal | left hemisphere | 2.756 ± 0.213 | 2.752 ± 0.209 | 0.020 | 0.5721 |
| right hemisphere | 2.76 ± 0.209 | 2.772 ± 0.203 | -0.057 | 0.0880 |
| Insula | left hemisphere | 3.299 ± 0.145 | 3.301 ± 0.146 | -0.012 | 0.8807 |
| right hemisphere | 3.295 ± 0.158 | 3.294 ± 0.157 | 0.005 | 0.9428 |

*Note: Significant effects are indicated in bold.*

**Table S2.2. Group differences of cortical volume between the Preterm and Control group (Bonferroni corrected, *P* < 0.0007).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cortical volume ( mm^3 )** |  | **Preterm**  **( N = 1706 )** | **Control**  **( N = 1865 )** | **Cohen’s d** | ***p* value** |
| **( Mean ± SE )** | **( Mean ± SE )** |
| Banks of Superior Temporal Sulcus | left hemisphere | 3310.354 ± 601.046 | 3354.364 ± 592.408 | -0.074 | 0.2079 |
| right hemisphere | 3091.73 ± 516.569 | 3160.242 ± 516.642 | -0.133 | 0.0010 |
| Caudal anterior cingulate | left hemisphere | 2416.907 ± 626.177 | 2436.677 ± 615.821 | -0.032 | 0.6225 |
| right hemisphere | 2727.792 ± 631.011 | 2731.616 ± 625.331 | -0.006 | 0.5512 |
| Caudal middle frontal | left hemisphere | 8685.154 ± 1587.963 | 8762.884 ± 1554.248 | -0.049 | 0.5527 |
| right hemisphere | 7955.675 ± 1581.665 | 8070.058 ± 1575.108 | -0.072 | 0.1503 |
| Cuneus | left hemisphere | 3563.609 ± 626.157 | 3567.987 ± 590.631 | -0.007 | 0.6936 |
| right hemisphere | 3761.029 ± 702.939 | 3788.278 ± 695.43 | -0.039 | 0.4685 |
| Entorhinal | left hemisphere | 1918.8 ± 402.622 | 1930.961 ± 396.234 | -0.030 | 0.8381 |
| right hemisphere | 1782.87 ± 416.923 | 1788.312 ± 406.578 | -0.013 | 0.8141 |
| Fusiform | left hemisphere | 12174.071 ± 1695.827 | 12338.739 ± 1712.58 | -0.097 | 0.0291 |
| right hemisphere | 11837.994 ± 1670.321 | 11993.972 ± 1639.472 | -0.094 | 0.0141 |
| Inferior parietal | left hemisphere | 16405.858 ± 2399.196 | 16740.383 ± 2332.592 | -0.141 | **0.0001** |
| right hemisphere | 19975.555 ± 2761.977 | 20348.732 ± 2665.019 | -0.138 | **0.0001** |
| Inferior temporal | left hemisphere | 13494.953 ± 2102.487 | 13596.863 ± 2054.988 | -0.049 | 0.6818 |
| right hemisphere | 13061.644 ± 2023.61 | 13050.683 ± 1987.262 | 0.005 | 0.1594 |
| Isthmus cingulate | left hemisphere | 3359.125 ± 616.033 | 3392.9 ± 629.373 | -0.054 | 0.4954 |
| right hemisphere | 3085.991 ± 590.251 | 3154.682 ± 589.112 | -0.116 | 0.0076 |
| Lateral occipital | left hemisphere | 13506.009 ± 1964.024 | 13450.056 ± 1966.647 | 0.028 | 0.0631 |
| right hemisphere | 13555.435 ± 2114.8 | 13523.447 ± 2079.809 | 0.015 | 0.1910 |
| Lateral orbitofrontal | left hemisphere | 9459.084 ± 1058.381 | 9523.886 ± 1068.612 | -0.061 | 0.3267 |
| right hemisphere | 9101.979 ± 1071.848 | 9206.589 ± 1089.204 | -0.097 | 0.0669 |
| Lingual | left hemisphere | 7929.597 ± 1241.715 | 8010.572 ± 1241.753 | -0.065 | 0.2681 |
| right hemisphere | 8076.787 ± 1157.109 | 8133.606 ± 1208.368 | -0.048 | 0.4968 |
| Medial orbitofrontal | left hemisphere | 5825.702 ± 804.325 | 5819.018 ± 826.789 | 0.008 | 0.0937 |
| right hemisphere | 6181.624 ± 765.995 | 6171.45 ± 780.022 | 0.013 | 0.1857 |
| Middle temporal | left hemisphere | 13500.189 ± 1893.199 | 13716.544 ± 1880.237 | -0.115 | 0.0016 |
| right hemisphere | 14834.581 ± 1941.743 | 15143.749 ± 1958.361 | -0.159 | **< 0.0001** |
| Parahippocampal | left hemisphere | 2694.481 ± 452.549 | 2697.489 ± 414.296 | -0.007 | 0.4879 |
| right hemisphere | 2514.672 ± 451.647 | 2530.968 ± 451.46 | -0.036 | 0.7120 |
| Paracentral | left hemisphere | 4393.005 ± 717.348 | 4413.795 ± 705.95 | -0.029 | 0.7240 |
| right hemisphere | 4945.753 ± 823.888 | 4978.517 ± 818.18 | -0.040 | 0.5511 |
| Pars opercularis | left hemisphere | 6265.403 ± 1038.187 | 6315.15 ± 1070.79 | -0.047 | 0.5130 |
| right hemisphere | 5154.369 ± 872.338 | 5182.559 ± 873.665 | -0.032 | 0.7549 |
| Pars orbitalis | left hemisphere | 2806.499 ± 379.386 | 2834.348 ± 379.27 | -0.073 | 0.0977 |
| right hemisphere | 3374.564 ± 461.281 | 3429.606 ± 459.573 | -0.120 | 0.0008 |
| Pars triangularis | left hemisphere | 4729.048 ± 770.545 | 4772.112 ± 793 | -0.055 | 0.3287 |
| right hemisphere | 5533.872 ± 925.09 | 5596.947 ± 932.846 | -0.068 | 0.1541 |
| Pericalcarine | left hemisphere | 2424.917 ± 452.878 | 2398.21 ± 436.092 | 0.060 | 0.0127 |
| right hemisphere | 2664.672 ± 467.462 | 2643.704 ± 467.209 | 0.045 | 0.0314 |
| Postcentral | left hemisphere | 12141.492 ± 1797.963 | 12367.971 ± 1819.938 | -0.125 | **0.0002** |
| right hemisphere | 11314.57 ± 1680.089 | 11495.509 ± 1732.997 | -0.106 | 0.0038 |
| Posterior cingulate | left hemisphere | 4146.756 ± 683.731 | 4202.045 ± 680.964 | -0.081 | 0.0319 |
| right hemisphere | 4206.023 ± 745.414 | 4241.621 ± 708.05 | -0.049 | 0.5916 |
| Precentral | left hemisphere | 16080.106 ± 1909.390 | 16231.285 ± 1946.916 | -0.078 | 0.0576 |
| right hemisphere | 15943.538 ± 1926.617 | 16100.716 ± 1893.413 | -0.082 | 0.0607 |
| Precuneus | left hemisphere | 12633.216 ± 1616.919 | 12731.618 ± 1628.867 | -0.061 | 0.2636 |
| right hemisphere | 13164.708 ± 1720.99 | 13246.172 ± 1740.541 | -0.047 | 0.7387 |
| Rostral anterior cingulate | left hemisphere | 3286.749 ± 592.273 | 3351.873 ± 589.675 | -0.110 | 0.0014 |
| right hemisphere | 2612.513 ± 541.744 | 2641.165 ± 518.862 | -0.054 | 0.4465 |
| Rostral middle frontal | left hemisphere | 21106.909 ± 2709.471 | 21205.182 ± 2692.209 | -0.036 | 0.9873 |
| right hemisphere | 21563.026 ± 2684.996 | 21686.204 ± 2690.553 | -0.046 | 0.7474 |
| Superior frontal | left hemisphere | 29344.625 ± 3220.595 | 29570.574 ± 3339.843 | -0.069 | 0.2438 |
| right hemisphere | 28159.057 ± 3233.469 | 28459.823 ± 3275.159 | -0.092 | 0.0311 |
| Superior parietal | left hemisphere | 16929.221 ± 2170.305 | 17134.92 ± 2310.626 | -0.092 | 0.0280 |
| right hemisphere | 17151.162 ± 2175.806 | 17279.214 ± 2228.727 | -0.058 | 0.2717 |
| Superior temporal | left hemisphere | 15001.637 ± 1844.113 | 15039.822 ± 1854.957 | -0.021 | 0.4627 |
| right hemisphere | 14283.105 ± 1691.737 | 14323.108 ± 1660.788 | -0.024 | 0.5031 |
| Supramarginal | left hemisphere | 14401.839 ± 2185.581 | 14609.948 ± 2179.902 | -0.095 | 0.0078 |
| right hemisphere | 13209.617 ± 1860.965 | 13447.203 ± 1991.059 | -0.123 | **0.0004** |
| Frontalpole | left hemisphere | 981.731 ± 182.958 | 983.757 ± 187.201 | -0.011 | 0.5511 |
| right hemisphere | 1365.878 ± 250.761 | 1361.068 ± 246.702 | 0.019 | 0.6443 |
| Temporalpole | left hemisphere | 2602.131 ± 373.037 | 2619.143 ± 364.977 | -0.046 | 0.3234 |
| right hemisphere | 2402.478 ± 358.721 | 2387.811 ± 358.166 | 0.041 | 0.1267 |
| Transverse temporal | left hemisphere | 1528.127 ± 271.715 | 1537.73 ± 273.907 | -0.035 | 0.7310 |
| right hemisphere | 1140.828 ± 214.327 | 1160.195 ± 211.681 | -0.091 | 0.0477 |
| Insula | left hemisphere | 7532.356 ± 899.014 | 7639.858 ± 862.241 | -0.122 | 0.0008 |
| right hemisphere | 7539.038 ± 911.619 | 7656.929 ± 908.457 | -0.130 | **0.0002** |

*Note: Significant effects are indicated in bold.*

**Table S2.3. Group differences of subcortical volume between the Preterm and Control group (Bonferroni corrected, *P* < 0.0023).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Subcortical volume ( mm^3 )** |  | **Preterm**  **( N = 1706 )** | **Control**  **( N = 1865 )** | **Cohen’s d** | ***p* value** |
| **( Mean ± SE )** | **( Mean ± SE )** |
| Cerebral white matter | left hemisphere | 208335.527 ± 24861.318 | 209454.983 ± 24392.454 | -0.045 | 0.7166 |
| right hemisphere | 211190.251 ± 25034.611 | 212239.742 ± 24572.848 | -0.042 | 0.5797 |
| Cerebellum white matter | left hemisphere | 17000.197 ± 2198.501 | 17264.318 ± 2139.496 | -0.122 | **0.0007** |
| right hemisphere | 17158.428 ± 2203.776 | 17446.913 ± 2139.056 | -0.133 | **0.0001** |
| Cerebellum cortex | left hemisphere | 53993.872 ± 5588.277 | 54337.85 ± 5395.648 | -0.063 | 0.1545 |
| right hemisphere | 54806.055 ± 5704.701 | 55148.457 ± 5519.802 | -0.061 | 0.2169 |
| Thalamus proper | left hemisphere | 7748.044 ± 791.04 | 7779.667 ± 726.277 | -0.042 | 0.6108 |
| right hemisphere | 7239.095 ± 747.289 | 7321.458 ± 687.583 | -0.115 | **0.0010** |
| Caudate | left hemisphere | 4026.159 ± 540.142 | 4043.38 ± 529.842 | -0.032 | 0.9164 |
| right hemisphere | 4176.814 ± 545.134 | 4186.962 ± 536.337 | -0.019 | 0.6734 |
| Putamen | left hemisphere | 5999.5 ± 710.568 | 6006.678 ± 717.831 | -0.010 | 0.9692 |
| right hemisphere | 5819.887 ± 646.654 | 5827.766 ± 633.446 | -0.012 | 0.8123 |
| Pallidum | left hemisphere | 1879.206 ± 254.937 | 1898.159 ± 259.532 | -0.074 | 0.0667 |  |
| right hemisphere | 1642.638 ± 203.135 | 1659.835 ± 201.464 | -0.085 | 0.0873 |
| Hippocampus | left hemisphere | 4052.126 ± 435.727 | 4086.507 ± 428.08 | -0.080 | 0.0349 |
| right hemisphere | 4102.052 ± 451.671 | 4137.234 ± 421.199 | -0.081 | 0.0261 |
| Amygdala | left hemisphere | 1589.084 ± 229.462 | 1600.026 ± 230.084 | -0.048 | 0.0492 |
| right hemisphere | 1628.211 ± 236.099 | 1633.545 ± 227.13 | -0.023 | 0.3310 |
| Accumbens area | left hemisphere | 568.261 ± 118.226 | 573.799 ± 117.919 | -0.047 | 0.2180 |
| right hemisphere | 619.396 ± 97.65 | 624.42 ± 101.523 | -0.050 | 0.0960 |
| Ventraldc | left hemisphere | 3902.715 ± 411.938 | 3919.952 ± 389.358 | -0.043 | 0.6390 |
| right hemisphere | 4044.127 ± 399.76 | 4036.972 ± 394.759 | 0.018 | 0.0248 |

*Note: Significant effects are indicated in bold.*

**Table S2.4. Group differences of fiber tract volume between the Preterm and Control group (Bonferroni corrected, *P* < 0.0014).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cortical volume ( mm^3 )** |  | **Preterm**  **( N = 1706 )** | **Control**  **( N = 1865 )** | **Cohen’s d** | ***p* value** |
| **( Mean ± SE )** | **( Mean ± SE )** |
| Fornix | left hemisphere | 5727.22 ± 752.327 | 5795.642 ± 704.258 | -0.094 | 0.0033 |
| right hemisphere | 5753.446 ± 738.474 | 5823.004 ± 675.248 | -0.099 | **0.0011** |
| Cingulate cingulum | left hemisphere | 3308.452 ± 662.659 | 3343.18 ± 625.882 | -0.054 | 0.3701 |
| right hemisphere | 3346.556 ± 644.554 | 3393.609 ± 600.912 | -0.076 | 0.1224 |
| Parahippocampal cingulum | left hemisphere | 2168.138 ± 355.428 | 2201.447 ± 349.975 | -0.094 | **0.0012** |
| right hemisphere | 2437.448 ± 389.126 | 2443.029 ± 388.816 | -0.014 | 0.6328 |
| Corticospinal/pyramidal | left hemisphere | 9898.907 ± 1093.836 | 9941.012 ± 1007.849 | -0.040 | 0.9337 |
| right hemisphere | 10029.833 ± 1051.457 | 10076.75 ± 988.526 | -0.046 | 0.8650 |
| Anterior thalamic radiations | left hemisphere | 13296.716 ± 1619.179 | 13359.365 ± 1550.712 | -0.040 | 0.8740 |
| right hemisphere | 12919.314 ± 1526.479 | 12981.526 ± 1486.641 | -0.041 | 0.8642 |
| Uncinate | left hemisphere | 5524.116 ± 878.287 | 5571.024 ± 836.294 | -0.055 | 0.2440 |
| right hemisphere | 8067.242 ± 1163.624 | 8130.74 ± 1095.169 | -0.056 | 0.2048 |
| Inferior longitudinal fasiculus | left hemisphere | 13118.727 ± 1906.906 | 13205.755 ± 1842.954 | -0.046 | 0.9662 |
| right hemisphere | 13283.144 ± 1888.135 | 13271.171 ± 1837.412 | 0.006 | 0.0321 |
| Inferior-fronto-occipital fasiculus | left hemisphere | 14332.856 ± 1717.6 | 14460.016 ± 1675.051 | -0.075 | 0.0607 |
| right hemisphere | 16397.226 ± 1876.643 | 16519.621 ± 1811.747 | -0.066 | 0.1468 |
| Foreceps major |  | 18519.2 ± 2654.806 | 18696.852 ± 2564.694 | -0.068 | 0.1206 |
| Foreceps minor |  | 26465.979 ± 3401.798 | 26663.328 ± 3422.489 | -0.058 | 0.3257 |
| Corpus callosum |  | 111636.131 ± 12863.759 | 112036.512 ± 12281.354 | -0.032 | 0.6713 |
| Superior longitudinal fasiculus | left hemisphere | 11519.013 ± 1679.352 | 11563.263 ± 1618.363 | -0.027 | 0.8109 |
| right hemisphere | 13360.192 ± 1753.485 | 13387.358 ± 1675.292 | -0.016 | 0.4909 |
| Temporal superior longitudinal fasiculus | left hemisphere | 9376.168 ± 1417.488 | 9419.15 ± 1369.053 | -0.031 | 0.9970 |
| right hemisphere | 9673.93 ± 1315.267 | 9712.225 ± 1249.195 | -0.030 | 0.9533 |
| Parietal superior longitudinal fasiculus | left hemisphere | 11411.405 ± 1574.893 | 11473.821 ± 1525.495 | -0.040 | 0.8929 |
| right hemisphere | 12864.992 ± 1691.789 | 12885.607 ± 1601.997 | -0.013 | 0.3978 |
| Superior corticostriate | left hemisphere | 26851.948 ± 3115.052 | 26877.499 ± 2902.268 | -0.009 | 0.0779 |
| right hemisphere | 15523.854 ± 1762.08 | 15506.515 ± 1716.08 | 0.010 | 0.0122 |
| Superior corticostriate-frontal cortex only | left hemisphere | 21998.134 ± 2645.159 | 21970.74 ± 2411.062 | 0.087 | 0.0066 |
| right hemisphere | 16484.945 ± 1976.85 | 16428.777 ± 1867.024 | 0.109 | 0.0019 |
| Superior corticostriate-parietal cortex only | left hemisphere | 12975.733 ± 1539.178 | 13050.605 ± 1487.75 | -0.050 | 0.7641 |
| right hemisphere | 11664.321 ± 1314.738 | 11647.95 ± 1295.227 | 0.013 | 0.0175 |
| Striatal inferior frontal cortex | left hemisphere | 11309.468 ± 1461.253 | 11284.665 ± 1410.224 | 0.017 | 0.1397 |
| right hemisphere | 11142.1 ± 1440.496 | 11146.488 ± 1380.789 | -0.003 | 0.2964 |
| Inferior frontal superior frontal cortex | left hemisphere | 16946.581 ± 2197.439 | 16820.088 ± 2087.418 | 0.059 | 0.2018 |
| right hemisphere | 20552.03 ± 2604.544 | 20389.936 ± 2452.156 | 0.064 | 0.1268 |
| Fornix, excluding fimbria | left hemisphere | 2206.707 ± 342.028 | 2224.892 ± 328.497 | -0.054 | 0.2033 |
| right hemisphere | 2713.925 ± 419.578 | 2762.479 ± 390.651 | -0.120 | **0.0011** |

*Note: Significant effects are indicated in bold.*

**Table S2.5. Group differences of cortical thickness between the Preterm and Control group (LME) (Bonferroni corrected, *P* < 0.0007).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cortical thickness ( mm )** |  | **Two-sample t test** | | **Linear mixed-effect model** | |
| **Cohen’s d** | ***p* value** | **Cohen’s d** | ***p* value** |
| Banks of Superior Temporal Sulcus | left hemisphere | -0.048 | 0.1036 | -0.063 | 0.1130 |
| right hemisphere | -0.061 | 0.0248 | -0.087 | 0.0297 |
| Caudal anterior cingulate | left hemisphere | 0.082 | 0.1342 | 0.061 | 0.1421 |
| right hemisphere | 0.032 | 0.5685 | 0.012 | 0.7747 |
| Caudal middle frontal | left hemisphere | 0.035 | 0.4745 | 0.037 | 0.3971 |
| right hemisphere | 0.021 | 0.8587 | 0.027 | 0.5411 |
| Cuneus | left hemisphere | 0.052 | 0.1147 | 0.057 | 0.2142 |
| right hemisphere | 0.024 | 0.5394 | 0.022 | 0.6159 |
| Entorhinal | left hemisphere | 0.080 | 0.0058 | 0.096 | 0.0179 |
| right hemisphere | 0.069 | 0.0276 | 0.081 | 0.0341 |
| Fusiform | left hemisphere | 0.081 | 0.0172 | 0.106 | 0.0190 |
| right hemisphere | 0.081 | 0.0363 | 0.099 | 0.0319 |
| Inferior parietal | left hemisphere | 0.012 | 0.6093 | -0.002 | 0.9696 |
| right hemisphere | 0.027 | 0.9113 | 0.007 | 0.8771 |
| Inferior temporal | left hemisphere | 0.082 | 0.0324 | 0.101 | 0.0249 |
| right hemisphere | 0.063 | 0.1614 | 0.065 | 0.1425 |
| Isthmus cingulate | left hemisphere | 0.084 | 0.0519 | 0.078 | 0.0674 |
| right hemisphere | -0.038 | 0.1832 | -0.046 | 0.2858 |
| Lateral occipital | left hemisphere | 0.129 | 0.0009 | 0.147 | 0.0026 |
| right hemisphere | 0.131 | **0.0003** | 0.151 | 0.0017 |
| Lateral orbitofrontal | left hemisphere | 0.113 | 0.0026 | 0.117 | 0.0062 |
| right hemisphere | 0.057 | 0.1235 | 0.065 | 0.1202 |
| Lingual | left hemisphere | -0.002 | 0.5569 | 0.015 | 0.7553 |
| right hemisphere | 0.015 | 0.2921 | 0.032 | 0.4770 |
| Medial orbitofrontal | left hemisphere | 0.158 | **< 0.0001** | 0.167 | **< 0.0001** |
| right hemisphere | 0.143 | **0.0001** | 0.151 | **0.0002** |
| Middle temporal | left hemisphere | 0.015 | 0.8643 | 0.010 | 0.8445 |
| right hemisphere | -0.007 | 0.2298 | -0.029 | 0.5425 |
| Parahippocampal | left hemisphere | 0.127 | **0.0004** | 0.142 | 0.0012 |
| right hemisphere | 0.088 | 0.0279 | 0.088 | 0.0383 |
| Paracentral | left hemisphere | 0.023 | 0.8459 | 0.010 | 0.8127 |
| right hemisphere | 0.019 | 0.8132 | 0.010 | 0.8125 |
| Pars opercularis | left hemisphere | 0.071 | 0.0575 | 0.083 | 0.0446 |
| right hemisphere | 0.078 | 0.0480 | 0.086 | 0.0355 |
| Pars orbitalis | left hemisphere | -0.033 | 0.1913 | -0.047 | 0.2359 |
| right hemisphere | -0.075 | 0.0122 | -0.094 | 0.0215 |
| Pars triangularis | left hemisphere | 0.013 | 0.8091 | 0.019 | 0.6567 |
| right hemisphere | 0.041 | 0.4399 | 0.041 | 0.3509 |
| Pericalcarine | left hemisphere | 0.105 | **0.0005** | 0.146 | 0.0015 |
| right hemisphere | 0.085 | 0.0057 | 0.115 | 0.0127 |
| Postcentral | left hemisphere | 0.023 | 0.8268 | 0.009 | 0.8568 |
| right hemisphere | 0.029 | 0.5903 | 0.022 | 0.6310 |
| Posterior cingulate | left hemisphere | 0.016 | 0.8250 | -0.016 | 0.7200 |
| right hemisphere | 0.028 | 0.6307 | 0.019 | 0.6447 |
| Precentral | left hemisphere | 0.035 | 0.6124 | 0.038 | 0.4341 |
| right hemisphere | 0.025 | 0.7498 | 0.038 | 0.4197 |
| Precuneus | left hemisphere | 0.066 | 0.2328 | 0.060 | 0.1923 |
| right hemisphere | 0.072 | 0.0782 | 0.083 | 0.0614 |
| Rostral anterior cingulate | left hemisphere | 0.122 | 0.0035 | 0.115 | 0.0041 |
| right hemisphere | 0.031 | 0.3759 | 0.032 | 0.4263 |
| Rostral middle frontal | left hemisphere | 0.051 | 0.3549 | 0.046 | 0.3098 |
| right hemisphere | 0.039 | 0.7368 | 0.031 | 0.5149 |
| Superior frontal | left hemisphere | 0.089 | 0.0794 | 0.097 | 0.0464 |
| right hemisphere | 0.050 | 0.5137 | 0.045 | 0.3624 |
| Superior parietal | left hemisphere | 0.079 | 0.0788 | 0.098 | 0.0459 |
| right hemisphere | 0.063 | 0.1921 | 0.069 | 0.1411 |
| Superior temporal | left hemisphere | 0.117 | 0.0008 | 0.157 | 0.0009 |
| right hemisphere | 0.076 | 0.0676 | 0.090 | 0.0530 |
| Supramarginal | left hemisphere | 0.056 | 0.4629 | 0.051 | 0.2867 |
| right hemisphere | 0.100 | 0.0220 | 0.115 | 0.0122 |
| Frontalpole | left hemisphere | 0.063 | 0.2222 | 0.047 | 0.2300 |
| right hemisphere | 0.061 | 0.2107 | 0.050 | 0.1932 |
| Temporalpole | left hemisphere | 0.045 | 0.2449 | 0.053 | 0.1713 |
| right hemisphere | 0.044 | 0.2977 | 0.042 | 0.2785 |
| Transverse temporal | left hemisphere | 0.020 | 0.5721 | 0.022 | 0.5944 |
| right hemisphere | -0.057 | 0.0880 | -0.072 | 0.0836 |
| Insula | left hemisphere | -0.012 | 0.8807 | -0.005 | 0.9076 |
| right hemisphere | 0.005 | 0.9428 | 0.001 | 0.9837 |

*Note: Significant effects are indicated in bold.*

**Table S2.6. Group differences of cortical volume between the Preterm and Control group (LME) (Bonferroni corrected, *P* < 0.0007).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cortical volume ( mm^3 )** |  | **Two-sample t test** | | **Linear mixed-effect model** | |
| **Cohen’s d** | ***p* value** | **Cohen’s d** | ***p* value** |
| Banks of Superior Temporal Sulcus | left hemisphere | -0.074 | 0.2079 | -0.047 | 0.2083 |
| right hemisphere | -0.133 | 0.0010 | -0.126 | 0.0010 |
| Caudal anterior cingulate | left hemisphere | -0.032 | 0.6225 | -0.013 | 0.7519 |
| right hemisphere | -0.006 | 0.5512 | 0.013 | 0.7351 |
| Caudal middle frontal | left hemisphere | -0.049 | 0.5527 | -0.029 | 0.4804 |
| right hemisphere | -0.072 | 0.1503 | -0.056 | 0.1540 |
| Cuneus | left hemisphere | -0.007 | 0.6936 | 0.009 | 0.8424 |
| right hemisphere | -0.039 | 0.4685 | -0.037 | 0.3805 |
| Entorhinal | left hemisphere | -0.030 | 0.8381 | -0.003 | 0.9432 |
| right hemisphere | -0.013 | 0.8141 | 0.006 | 0.8677 |
| Fusiform | left hemisphere | -0.097 | 0.0291 | -0.088 | 0.0311 |
| right hemisphere | -0.094 | 0.0141 | -0.104 | 0.0125 |
| Inferior parietal | left hemisphere | -0.141 | **0.0001** | -0.155 | **0.0003** |
| right hemisphere | -0.138 | **0.0001** | -0.157 | **0.0003** |
| Inferior temporal | left hemisphere | -0.049 | 0.6818 | -0.021 | 0.6096 |
| right hemisphere | 0.005 | 0.1594 | 0.059 | 0.1780 |
| Isthmus cingulate | left hemisphere | -0.054 | 0.4954 | -0.032 | 0.4454 |
| right hemisphere | -0.116 | 0.0076 | -0.103 | 0.0119 |
| Lateral occipital | left hemisphere | 0.028 | 0.0631 | 0.064 | 0.1419 |
| right hemisphere | 0.015 | 0.1910 | 0.036 | 0.3888 |
| Lateral orbitofrontal | left hemisphere | -0.061 | 0.3267 | -0.048 | 0.2890 |
| right hemisphere | -0.097 | 0.0669 | -0.074 | 0.0919 |
| Lingual | left hemisphere | -0.065 | 0.2681 | -0.063 | 0.1910 |
| right hemisphere | -0.048 | 0.4968 | -0.030 | 0.5386 |
| Medial orbitofrontal | left hemisphere | 0.008 | 0.0937 | 0.066 | 0.1096 |
| right hemisphere | 0.013 | 0.1857 | 0.051 | 0.2243 |
| Middle temporal | left hemisphere | -0.115 | 0.0016 | -0.136 | 0.0019 |
| right hemisphere | -0.159 | **< 0.0001** | -0.207 | **< 0.0001** |
| Parahippocampal | left hemisphere | -0.007 | 0.4879 | 0.023 | 0.5763 |
| right hemisphere | -0.036 | 0.7120 | -0.020 | 0.6071 |
| Paracentral | left hemisphere | -0.029 | 0.7240 | -0.024 | 0.5616 |
| right hemisphere | -0.040 | 0.5511 | -0.029 | 0.4392 |
| Pars opercularis | left hemisphere | -0.047 | 0.5130 | -0.029 | 0.4621 |
| right hemisphere | -0.032 | 0.7549 | -0.021 | 0.6100 |
| Pars orbitalis | left hemisphere | -0.073 | 0.0977 | -0.066 | 0.0871 |
| right hemisphere | -0.120 | 0.0008 | -0.123 | 0.0015 |
| Pars triangularis | left hemisphere | -0.055 | 0.3287 | -0.033 | 0.4039 |
| right hemisphere | -0.068 | 0.1541 | -0.056 | 0.1586 |
| Pericalcarine | left hemisphere | 0.060 | 0.0127 | 0.129 | 0.0159 |
| right hemisphere | 0.045 | 0.0314 | 0.107 | 0.0282 |
| Postcentral | left hemisphere | -0.125 | **0.0002** | -0.160 | **0.0002** |
| right hemisphere | -0.106 | 0.0038 | -0.126 | 0.0034 |
| Posterior cingulate | left hemisphere | -0.081 | 0.0319 | -0.081 | 0.0358 |
| right hemisphere | -0.049 | 0.5916 | -0.023 | 0.5687 |
| Precentral | left hemisphere | -0.078 | 0.0576 | -0.085 | 0.0407 |
| right hemisphere | -0.082 | 0.0607 | -0.073 | 0.0739 |
| Precuneus | left hemisphere | -0.061 | 0.2636 | -0.049 | 0.2830 |
| right hemisphere | -0.047 | 0.7387 | -0.019 | 0.6695 |
| Rostral anterior cingulate | left hemisphere | -0.110 | 0.0014 | -0.126 | 0.0015 |
| right hemisphere | -0.054 | 0.4465 | -0.040 | 0.3075 |
| Rostral middle frontal | left hemisphere | -0.036 | 0.9873 | 0.001 | 0.9887 |
| right hemisphere | -0.046 | 0.7474 | -0.014 | 0.7301 |
| Superior frontal | left hemisphere | -0.069 | 0.2438 | -0.066 | 0.1564 |
| right hemisphere | -0.092 | 0.0311 | -0.092 | 0.0328 |
| Superior parietal | left hemisphere | -0.092 | 0.0280 | -0.086 | 0.0641 |
| right hemisphere | -0.058 | 0.2717 | -0.038 | 0.3930 |
| Superior temporal | left hemisphere | -0.021 | 0.4627 | 0.031 | 0.4624 |
| right hemisphere | -0.024 | 0.5031 | 0.031 | 0.5068 |
| Supramarginal | left hemisphere | -0.095 | 0.0078 | -0.104 | 0.0088 |
| right hemisphere | -0.123 | **0.0004** | -0.136 | **0.0007** |
| Frontalpole | left hemisphere | -0.011 | 0.5511 | -0.023 | 0.5379 |
| right hemisphere | 0.019 | 0.6443 | 0.014 | 0.7149 |
| Temporalpole | left hemisphere | -0.046 | 0.3234 | -0.033 | 0.3974 |
| right hemisphere | 0.041 | 0.1267 | 0.057 | 0.1655 |
| Transverse temporal | left hemisphere | -0.035 | 0.7310 | -0.019 | 0.6542 |
| right hemisphere | -0.091 | 0.0477 | -0.086 | 0.0413 |
| Insula | left hemisphere | -0.122 | 0.0008 | -0.160 | 0.0009 |
| right hemisphere | -0.130 | **0.0002** | -0.167 | **0.0003** |

*Note: Significant effects are indicated in bold.*

**Table S2.7. Group differences of subcortical volume between the Preterm and Control group (LME) (Bonferroni corrected, *P* < 0.0023).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Subcortical volume ( mm^3 )** |  | **Two-sample t test** | | **Linear mixed-effect model** | |
| **Cohen’s d** | ***p* value** | **Cohen’s d** | ***p* value** |
| Cerebral white matter | left hemisphere | -0.045 | 0.7166 | 0.018 | 0.7767 |
| right hemisphere | -0.042 | 0.5797 | 0.030 | 0.6272 |
| Cerebellum white matter | left hemisphere | -0.122 | **0.0007** | -0.163 | 0.0033 |
| right hemisphere | -0.133 | **0.0001** | -0.187 | **0.0005** |
| Cerebellum cortex | left hemisphere | -0.063 | 0.1545 | -0.086 | 0.1532 |
| right hemisphere | -0.061 | 0.2169 | -0.080 | 0.1714 |
| Thalamus proper | left hemisphere | -0.042 | 0.6108 | -0.004 | 0.9386 |
| right hemisphere | -0.115 | **0.0010** | -0.147 | 0.0028 |
| Caudate | left hemisphere | -0.032 | 0.9164 | 0.006 | 0.9101 |
| right hemisphere | -0.019 | 0.6734 | 0.031 | 0.5746 |
| Putamen | left hemisphere | -0.010 | 0.9692 | 0.017 | 0.7438 |
| right hemisphere | -0.012 | 0.8123 | 0.014 | 0.7975 |
| Pallidum | left hemisphere | -0.074 | 0.0667 | -0.071 | 0.0782 |  |
| right hemisphere | -0.085 | 0.0873 | -0.059 | 0.1976 |
| Hippocampus | left hemisphere | -0.080 | 0.0349 | -0.098 | 0.0487 |
| right hemisphere | -0.081 | 0.0261 | -0.112 | 0.0256 |
| Amygdala | left hemisphere | -0.048 | 0.0492 | -0.068 | 0.1106 |
| right hemisphere | -0.023 | 0.3310 | -0.025 | 0.5603 |
| Accumbens area | left hemisphere | -0.047 | 0.2180 | -0.048 | 0.2561 |
| right hemisphere | -0.050 | 0.0960 | -0.064 | 0.1505 |
| Ventraldc | left hemisphere | -0.043 | 0.6390 | -0.005 | 0.9245 |
| right hemisphere | 0.018 | 0.0248 | 0.116 | 0.0159 |

*Note: Significant effects are indicated in bold.*

**Table S2.8. Group differences of fiber tract volume between the Preterm and Control group (LME) (Bonferroni corrected, *P* < 0.0014).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cortical volume ( mm^3 )** |  | **Two-sample t test** | | **Linear mixed-effect model** | |
| **Cohen’s d** | ***p* value** | **Cohen’s d** | ***p* value** |
| Fornix | left hemisphere | -0.094 | 0.0033 | -0.097 | 0.0049 |
| right hemisphere | -0.099 | **0.0011** | -0.104 | 0.0026 |
| Cingulate cingulum | left hemisphere | -0.054 | 0.3701 | -0.032 | 0.3492 |
| right hemisphere | -0.076 | 0.1224 | -0.056 | 0.1077 |
| Parahippocampal cingulum | left hemisphere | -0.094 | **0.0012** | -0.109 | 0.0015 |
| right hemisphere | -0.014 | 0.6328 | -0.014 | 0.6843 |
| Corticospinal/pyramidal | left hemisphere | -0.040 | 0.9337 | 0.001 | 0.9792 |
| right hemisphere | -0.046 | 0.8650 | -0.008 | 0.8133 |
| Anterior thalamic radiations | left hemisphere | -0.040 | 0.8740 | 0.004 | 0.9065 |
| right hemisphere | -0.041 | 0.8642 | 0.005 | 0.8851 |
| Uncinate | left hemisphere | -0.055 | 0.2440 | -0.041 | 0.2369 |
| right hemisphere | -0.056 | 0.2048 | -0.043 | 0.2090 |
| Inferior longitudinal fasiculus | left hemisphere | -0.046 | 0.9662 | 0.000 | 0.9956 |
| right hemisphere | 0.006 | 0.0321 | 0.072 | 0.0368 |
| Inferior-fronto-occipital fasiculus | left hemisphere | -0.075 | 0.0607 | -0.065 | 0.0587 |
| right hemisphere | -0.066 | 0.1468 | -0.051 | 0.1432 |
| Foreceps major |  | -0.068 | 0.1206 | -0.054 | 0.1190 |
| Foreceps minor |  | -0.058 | 0.3257 | -0.035 | 0.3144 |
| Corpus callosum |  | -0.032 | 0.6713 | 0.013 | 0.6973 |
| Superior longitudinal fasiculus | left hemisphere | -0.027 | 0.8109 | 0.007 | 0.8430 |
| right hemisphere | -0.016 | 0.4909 | 0.022 | 0.5203 |
| Temporal superior longitudinal fasiculus | left hemisphere | -0.031 | 0.9970 | -0.001 | 0.9730 |
| right hemisphere | -0.030 | 0.9533 | 0.001 | 0.9720 |
| Parietal superior longitudinal fasiculus | left hemisphere | -0.040 | 0.8929 | -0.007 | 0.8362 |
| right hemisphere | -0.013 | 0.3978 | 0.027 | 0.4325 |
| Superior corticostriate | left hemisphere | -0.009 | 0.0779 | 0.059 | 0.0860 |
| right hemisphere | 0.010 | 0.0122 | 0.085 | 0.0143 |
| Superior corticostriate-frontal cortex only | left hemisphere | 0.087 | 0.0066 | 0.093 | 0.0073 |
| right hemisphere | 0.109 | 0.0019 | 0.140 | 0.0018 |
| Superior corticostriate-parietal cortex only | left hemisphere | -0.050 | 0.7641 | -0.013 | 0.7123 |
| right hemisphere | 0.013 | 0.0175 | 0.080 | 0.0207 |
| Striatal inferior frontal cortex | left hemisphere | 0.017 | 0.1397 | 0.052 | 0.1333 |
| right hemisphere | -0.003 | 0.2964 | 0.037 | 0.2875 |
| Inferior frontal superior frontal cortex | left hemisphere | 0.059 | 0.2018 | 0.083 | 0.3142 |
| right hemisphere | 0.064 | 0.1268 | 0.079 | 0.1654 |
| Fornix, excluding fimbria | left hemisphere | -0.054 | 0.2033 | -0.039 | 0.2592 |
| right hemisphere | -0.120 | **0.0011** | **-0.147** | **0.0011** |

*Note: Significant effects are indicated in bold.*

**Table S2.9.** **Group differences of cortical thickness between the Preterm and Control group (Twin pairs-matched) (Bonferroni corrected, P < 0.0007).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cortical thickness ( mm )** |  | **Pre ( N = 1706 ) vs. Con ( N = 1865 )** | | **Pre ( N = 1171 ) vs. Con ( N = 1231 )** | |
| **Cohen’s d** | ***p* value** | **Cohen’s d** | ***p* value** |
| Banks of Superior Temporal Sulcus | left hemisphere | -0.048 | 0.1036 | -0.036 | 0.3607 |
| right hemisphere | -0.061 | 0.0248 | -0.056 | 0.1602 |
| Caudal anterior cingulate | left hemisphere | 0.082 | 0.1342 | 0.034 | 0.3875 |
| right hemisphere | 0.032 | 0.5685 | 0.042 | 0.2995 |
| Caudal middle frontal | left hemisphere | 0.035 | 0.4745 | 0.065 | 0.0922 |
| right hemisphere | 0.021 | 0.8587 | 0.025 | 0.5289 |
| Cuneus | left hemisphere | 0.052 | 0.1147 | 0.059 | 0.1395 |
| right hemisphere | 0.024 | 0.5394 | 0.044 | 0.2546 |
| Entorhinal | left hemisphere | 0.080 | 0.0058 | 0.095 | 0.0185 |
| right hemisphere | 0.069 | 0.0276 | 0.070 | 0.0815 |
| Fusiform | left hemisphere | 0.081 | 0.0172 | 0.085 | 0.0352 |
| right hemisphere | 0.081 | 0.0363 | 0.033 | 0.4032 |
| Inferior parietal | left hemisphere | 0.012 | 0.6093 | 0.033 | 0.3685 |
| right hemisphere | 0.027 | 0.9113 | 0.033 | 0.3557 |
| Inferior temporal | left hemisphere | 0.082 | 0.0324 | 0.088 | 0.0258 |
| right hemisphere | 0.063 | 0.1614 | 0.070 | 0.0685 |
| Isthmus cingulate | left hemisphere | 0.084 | 0.0519 | 0.018 | 0.6510 |
| right hemisphere | -0.038 | 0.1832 | -0.037 | 0.3627 |
| Lateral occipital | left hemisphere | 0.129 | 0.0009 | 0.088 | 0.0130 |
| right hemisphere | 0.131 | **0.0003** | 0.091 | 0.0105 |
| Lateral orbitofrontal | left hemisphere | 0.113 | 0.0026 | 0.061 | 0.1205 |
| right hemisphere | 0.057 | 0.1235 | 0.020 | 0.6087 |
| Lingual | left hemisphere | -0.002 | 0.5569 | 0.002 | 0.9644 |
| right hemisphere | 0.015 | 0.2921 | 0.007 | 0.8611 |
| Medial orbitofrontal | left hemisphere | 0.158 | **< 0.0001** | 0.127 | 0.0013 |
| right hemisphere | 0.143 | **0.0001** | 0.098 | 0.0139 |
| Middle temporal | left hemisphere | 0.015 | 0.8643 | 0.013 | 0.7302 |
| right hemisphere | -0.007 | 0.2298 | 0.009 | 0.7897 |
| Parahippocampal | left hemisphere | 0.127 | **0.0004** | 0.118 | 0.0033 |
| right hemisphere | 0.088 | 0.0279 | 0.060 | 0.1354 |
| Paracentral | left hemisphere | 0.023 | 0.8459 | 0.040 | 0.2940 |
| right hemisphere | 0.019 | 0.8132 | 0.044 | 0.2705 |
| Pars opercularis | left hemisphere | 0.071 | 0.0575 | 0.095 | 0.0152 |
| right hemisphere | 0.078 | 0.0480 | 0.058 | 0.1414 |
| Pars orbitalis | left hemisphere | -0.033 | 0.1913 | -0.022 | 0.5825 |
| right hemisphere | -0.075 | 0.0122 | -0.060 | 0.1377 |
| Pars triangularis | left hemisphere | 0.013 | 0.8091 | 0.045 | 0.2557 |
| right hemisphere | 0.041 | 0.4399 | 0.020 | 0.5949 |
| Pericalcarine | left hemisphere | 0.105 | **0.0005** | 0.085 | 0.0267 |
| right hemisphere | 0.085 | 0.0057 | 0.022 | 0.5646 |
| Postcentral | left hemisphere | 0.023 | 0.8268 | -0.002 | 0.9629 |
| right hemisphere | 0.029 | 0.5903 | 0.013 | 0.7337 |
| Posterior cingulate | left hemisphere | 0.016 | 0.8250 | 0.032 | 0.4204 |
| right hemisphere | 0.028 | 0.6307 | 0.054 | 0.1879 |
| Precentral | left hemisphere | 0.035 | 0.6124 | 0.068 | 0.0605 |
| right hemisphere | 0.025 | 0.7498 | 0.059 | 0.1172 |
| Precuneus | left hemisphere | 0.066 | 0.2328 | 0.088 | 0.0225 |
| right hemisphere | 0.072 | 0.0782 | 0.099 | 0.0130 |
| Rostral anterior cingulate | left hemisphere | 0.122 | 0.0035 | 0.091 | 0.0194 |
| right hemisphere | 0.031 | 0.3759 | 0.034 | 0.3870 |
| Rostral middle frontal | left hemisphere | 0.051 | 0.3549 | 0.040 | 0.2679 |
| right hemisphere | 0.039 | 0.7368 | 0.014 | 0.7127 |
| Superior frontal | left hemisphere | 0.089 | 0.0794 | 0.089 | 0.0168 |
| right hemisphere | 0.050 | 0.5137 | 0.039 | 0.3127 |
| Superior parietal | left hemisphere | 0.079 | 0.0788 | 0.081 | 0.0284 |
| right hemisphere | 0.063 | 0.1921 | 0.058 | 0.1244 |
| Superior temporal | left hemisphere | 0.117 | 0.0008 | 0.107 | 0.0046 |
| right hemisphere | 0.076 | 0.0676 | 0.081 | 0.0347 |
| Supramarginal | left hemisphere | 0.056 | 0.4629 | 0.044 | 0.2114 |
| right hemisphere | 0.100 | 0.0220 | 0.081 | 0.0139 |
| Frontalpole | left hemisphere | 0.063 | 0.2222 | 0.020 | 0.6091 |
| right hemisphere | 0.061 | 0.2107 | 0.014 | 0.7210 |
| Temporalpole | left hemisphere | 0.045 | 0.2449 | 0.046 | 0.2636 |
| right hemisphere | 0.044 | 0.2977 | 0.064 | 0.1088 |
| Transverse temporal | left hemisphere | 0.020 | 0.5721 | 0.028 | 0.4938 |
| right hemisphere | -0.057 | 0.0880 | -0.041 | 0.3054 |
| Insula | left hemisphere | -0.012 | 0.8807 | 0.011 | 0.7799 |
| right hemisphere | 0.005 | 0.9428 | -0.015 | 0.7059 |

*Note: Significant effects are indicated in bold.*

**Table S2.10.** **Group differences of cortical volume between the Preterm and Control group (Twin pairs-matched) (Bonferroni corrected, P < 0.0007).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cortical volume ( mm^3 )** |  | **Pre ( N = 1706 ) vs. Con ( N = 1865 )** | | **Pre ( N = 1171 ) vs. Con ( N = 1231 )** | |
| **Cohen’s d** | ***p* value** | **Cohen’s d** | ***p* value** |
| Banks of Superior Temporal Sulcus | left hemisphere | -0.074 | 0.2079 | -0.025 | 0.4913 |
| right hemisphere | -0.133 | 0.0010 | -0.060 | 0.0964 |
| Caudal anterior cingulate | left hemisphere | -0.032 | 0.6225 | -0.038 | 0.3079 |
| right hemisphere | -0.006 | 0.5512 | 0.032 | 0.4076 |
| Caudal middle frontal | left hemisphere | -0.049 | 0.5527 | 0.008 | 0.8151 |
| right hemisphere | -0.072 | 0.1503 | -0.042 | 0.2296 |
| Cuneus | left hemisphere | -0.007 | 0.6936 | -0.005 | 0.8834 |
| right hemisphere | -0.039 | 0.4685 | -0.006 | 0.8558 |
| Entorhinal | left hemisphere | -0.030 | 0.8381 | 0.010 | 0.7799 |
| right hemisphere | -0.013 | 0.8141 | 0.036 | 0.3419 |
| Fusiform | left hemisphere | -0.097 | 0.0291 | -0.047 | 0.1574 |
| right hemisphere | -0.094 | 0.0141 | -0.044 | 0.1602 |
| Inferior parietal | left hemisphere | -0.141 | **0.0001** | -0.036 | 0.2787 |
| right hemisphere | -0.138 | **0.0001** | -0.047 | 0.1353 |
| Inferior temporal | left hemisphere | -0.049 | 0.6818 | 0.006 | 0.8514 |
| right hemisphere | 0.005 | 0.1594 | 0.024 | 0.4573 |
| Isthmus cingulate | left hemisphere | -0.054 | 0.4954 | -0.001 | 0.9850 |
| right hemisphere | -0.116 | 0.0076 | -0.044 | 0.2046 |
| Lateral occipital | left hemisphere | 0.028 | 0.0631 | 0.029 | 0.3638 |
| right hemisphere | 0.015 | 0.1910 | 0.055 | 0.0865 |
| Lateral orbitofrontal | left hemisphere | -0.061 | 0.3267 | -0.016 | 0.5823 |
| right hemisphere | -0.097 | 0.0669 | -0.016 | 0.6043 |
| Lingual | left hemisphere | -0.065 | 0.2681 | -0.039 | 0.2673 |
| right hemisphere | -0.048 | 0.4968 | -0.041 | 0.2564 |
| Medial orbitofrontal | left hemisphere | 0.008 | 0.0937 | 0.025 | 0.4390 |
| right hemisphere | 0.013 | 0.1857 | 0.020 | 0.5669 |
| Middle temporal | left hemisphere | -0.115 | 0.0016 | -0.066 | 0.0366 |
| right hemisphere | -0.159 | **< 0.0001** | -0.111 | **0.0002** |
| Parahippocampal | left hemisphere | -0.007 | 0.4879 | 0.021 | 0.5778 |
| right hemisphere | -0.036 | 0.7120 | 0.002 | 0.9639 |
| Paracentral | left hemisphere | -0.029 | 0.7240 | 0.021 | 0.5739 |
| right hemisphere | -0.040 | 0.5511 | -0.014 | 0.7153 |
| Pars opercularis | left hemisphere | -0.047 | 0.5130 | 0.001 | 0.9826 |
| right hemisphere | -0.032 | 0.7549 | -0.027 | 0.4723 |
| Pars orbitalis | left hemisphere | -0.073 | 0.0977 | -0.027 | 0.4427 |
| right hemisphere | -0.120 | 0.0008 | -0.058 | 0.1058 |
| Pars triangularis | left hemisphere | -0.055 | 0.3287 | 0.009 | 0.8171 |
| right hemisphere | -0.068 | 0.1541 | -0.017 | 0.6561 |
| Pericalcarine | left hemisphere | 0.060 | 0.0127 | 0.040 | 0.2701 |
| right hemisphere | 0.045 | 0.0314 | 0.034 | 0.3547 |
| Postcentral | left hemisphere | -0.125 | **0.0002** | -0.139 | **< 0.0001** |
| right hemisphere | -0.106 | 0.0038 | -0.056 | 0.0919 |
| Posterior cingulate | left hemisphere | -0.081 | 0.0319 | -0.084 | 0.0126 |
| right hemisphere | -0.049 | 0.5916 | -0.023 | 0.5140 |
| Precentral | left hemisphere | -0.078 | 0.0576 | -0.046 | 0.1313 |
| right hemisphere | -0.082 | 0.0607 | -0.043 | 0.1615 |
| Precuneus | left hemisphere | -0.061 | 0.2636 | 0.024 | 0.4358 |
| right hemisphere | -0.047 | 0.7387 | 0.040 | 0.1839 |
| Rostral anterior cingulate | left hemisphere | -0.110 | 0.0014 | -0.091 | 0.0067 |
| right hemisphere | -0.054 | 0.4465 | -0.059 | 0.1086 |
| Rostral middle frontal | left hemisphere | -0.036 | 0.9873 | 0.018 | 0.5542 |
| right hemisphere | -0.046 | 0.7474 | -0.018 | 0.5669 |
| Superior frontal | left hemisphere | -0.069 | 0.2438 | -0.024 | 0.4052 |
| right hemisphere | -0.092 | 0.0311 | -0.064 | 0.0288 |
| Superior parietal | left hemisphere | -0.092 | 0.0280 | -0.026 | 0.4342 |
| right hemisphere | -0.058 | 0.2717 | -0.031 | 0.3489 |
| Superior temporal | left hemisphere | -0.021 | 0.4627 | 0.042 | 0.1590 |
| right hemisphere | -0.024 | 0.5031 | 0.049 | 0.1082 |
| Supramarginal | left hemisphere | -0.095 | 0.0078 | -0.051 | 0.1043 |
| right hemisphere | -0.123 | **0.0004** | -0.089 | 0.0075 |
| Frontalpole | left hemisphere | -0.011 | 0.5511 | -0.050 | 0.1890 |
| right hemisphere | 0.019 | 0.6443 | -0.028 | 0.4504 |
| Temporalpole | left hemisphere | -0.046 | 0.3234 | -0.016 | 0.6885 |
| right hemisphere | 0.041 | 0.1267 | 0.066 | 0.0925 |
| Transverse temporal | left hemisphere | -0.035 | 0.7310 | -0.001 | 0.9854 |
| right hemisphere | -0.091 | 0.0477 | -0.047 | 0.1922 |
| Insula | left hemisphere | -0.122 | 0.0008 | -0.069 | 0.0171 |
| right hemisphere | -0.130 | **0.0002** | -0.067 | 0.0176 |

*Note: Significant effects are indicated in bold.*

**Table S2.11.** **Group differences of subcortical volume between the Preterm and Control group (Twin pairs-matched) (Bonferroni corrected, P < 0.0023).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Subcortical volume ( mm^3 )** |  | **Pre ( N = 1706 ) vs. Con ( N = 1865 )** | | **Pre ( N = 1171 ) vs. Con ( N = 1231 )** | |
| **Cohen’s d** | ***p* value** | **Cohen’s d** | ***p* value** |
| Cerebral white matter | left hemisphere | -0.045 | 0.7166 | -0.001 | 0.9557 |
| right hemisphere | -0.042 | 0.5797 | -0.002 | 0.9404 |
| Cerebellum white matter | left hemisphere | -0.122 | **0.0007** | -0.079 | 0.0185 |
| right hemisphere | -0.133 | **0.0001** | -0.111 | **0.0007** |
| Cerebellum cortex | left hemisphere | -0.063 | 0.1545 | -0.050 | 0.1020 |
| right hemisphere | -0.061 | 0.2169 | -0.042 | 0.1701 |
| Thalamus proper | left hemisphere | -0.042 | 0.6108 | -0.016 | 0.5163 |
| right hemisphere | -0.115 | **0.0010** | -0.067 | 0.0146 |
| Caudate | left hemisphere | -0.032 | 0.9164 | 0.040 | 0.2468 |
| right hemisphere | -0.019 | 0.6734 | 0.046 | 0.1853 |
| Putamen | left hemisphere | -0.010 | 0.9692 | 0.007 | 0.8430 |
| right hemisphere | -0.012 | 0.8123 | 0.013 | 0.7018 |
| Pallidum | left hemisphere | -0.074 | 0.0667 | -0.067 | 0.0609 |  |
| right hemisphere | -0.085 | 0.0873 | -0.047 | 0.1640 |
| Hippocampus | left hemisphere | -0.080 | 0.0349 | -0.038 | 0.2350 |
| right hemisphere | -0.081 | 0.0261 | -0.050 | 0.1088 |
| Amygdala | left hemisphere | -0.048 | 0.0492 | -0.051 | 0.1061 |
| right hemisphere | -0.023 | 0.3310 | -0.009 | 0.7818 |
| Accumbens area | left hemisphere | -0.047 | 0.2180 | -0.046 | 0.1680 |
| right hemisphere | -0.050 | 0.0960 | -0.050 | 0.1501 |
| Ventraldc | left hemisphere | -0.043 | 0.6390 | -0.039 | 0.1678 |
| right hemisphere | 0.018 | 0.0248 | 0.031 | 0.2879 |

*Note: Significant effects are indicated in bold.*

**Table S2.12.** **Group differences of fiber tract volume between the Preterm and Control group (Twin pairs-matched) (Bonferroni corrected, P < 0.0014).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Cortical volume ( mm^3 )** |  | **Pre ( N = 1706 ) vs. Con ( N = 1865 )** | | **Pre ( N = 1171 ) vs. Con ( N = 1231 )** | |
| **Cohen’s d** | ***p* value** | **Cohen’s d** | ***p* value** |
| Fornix | left hemisphere | -0.094 | 0.0033 | 0.076 | 0.0205 |
| right hemisphere | -0.099 | **0.0011** | 0.087 | 0.0071 |
| Cingulate cingulum | left hemisphere | -0.054 | 0.3701 | 0.023 | 0.5069 |
| right hemisphere | -0.076 | 0.1224 | 0.053 | 0.1217 |
| Parahippocampal cingulum | left hemisphere | -0.094 | **0.0012** | 0.090 | 0.0092 |
| right hemisphere | -0.014 | 0.6328 | 0.015 | 0.6574 |
| Corticospinal/pyramidal | left hemisphere | -0.040 | 0.9337 | 0.017 | 0.5357 |
| right hemisphere | -0.046 | 0.8650 | 0.025 | 0.3467 |
| Anterior thalamic radiations | left hemisphere | -0.040 | 0.8740 | 0.007 | 0.7937 |
| right hemisphere | -0.041 | 0.8642 | 0.029 | 0.2979 |
| Uncinate | left hemisphere | -0.055 | 0.2440 | 0.023 | 0.4757 |
| right hemisphere | -0.056 | 0.2048 | 0.047 | 0.1365 |
| Inferior longitudinal fasiculus | left hemisphere | -0.046 | 0.9662 | 0.008 | 0.7918 |
| right hemisphere | 0.006 | 0.0321 | -0.019 | 0.5225 |
| Inferior-fronto-occipital fasiculus | left hemisphere | -0.075 | 0.0607 | 0.046 | 0.1137 |
| right hemisphere | -0.066 | 0.1468 | 0.061 | 0.0294 |
| Foreceps major |  | -0.068 | 0.1206 | 0.033 | 0.3241 |
| Foreceps minor |  | -0.058 | 0.3257 | 0.035 | 0.2093 |
| Corpus callosum |  | -0.032 | 0.6713 | 0.008 | 0.7694 |
| Superior longitudinal fasiculus | left hemisphere | -0.027 | 0.8109 | 0.009 | 0.7793 |
| right hemisphere | -0.016 | 0.4909 | 0.011 | 0.7174 |
| Temporal superior longitudinal fasiculus | left hemisphere | -0.031 | 0.9970 | 0.011 | 0.7320 |
| right hemisphere | -0.030 | 0.9533 | 0.007 | 0.8219 |
| Parietal superior longitudinal fasiculus | left hemisphere | -0.040 | 0.8929 | 0.022 | 0.4890 |
| right hemisphere | -0.013 | 0.3978 | 0.003 | 0.9188 |
| Superior corticostriate | left hemisphere | -0.009 | 0.0779 | -0.006 | 0.8297 |
| right hemisphere | 0.010 | 0.0122 | -0.033 | 0.2324 |
| Superior corticostriate-frontal cortex only | left hemisphere | 0.087 | 0.0066 | -0.017 | 0.5062 |
| right hemisphere | 0.109 | 0.0019 | -0.043 | 0.1045 |
| Superior corticostriate-parietal cortex only | left hemisphere | -0.050 | 0.7641 | 0.021 | 0.4740 |
| right hemisphere | 0.013 | 0.0175 | -0.030 | 0.3031 |
| Striatal inferior frontal cortex | left hemisphere | 0.017 | 0.1397 | -0.030 | 0.3470 |
| right hemisphere | -0.003 | 0.2964 | -0.003 | 0.9105 |
| Inferior frontal superior frontal cortex | left hemisphere | 0.059 | 0.2018 | -0.062 | 0.0338 |
| right hemisphere | 0.064 | 0.1268 | -0.074 | 0.0086 |
| Fornix, excluding fimbria | left hemisphere | -0.054 | 0.2033 | 0.041 | 0.2451 |
| right hemisphere | -0.120 | **0.0011** | 0.088 | 0.0192 |

*Note: Significant effects are indicated in bold.*

**Table S2.13. Interaction effects (group×sex) on cortical thickness. (Bonferroni corrected, *P* < 0.0007).**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Cortical thickness ( mm )** |  | **Group effect** | | **Sex effect** | | **Interaction effect** | |
| **F value** | ***p* value** | **F value** | ***p* value** | **F value** | ***p* value** |
| Banks of Superior Temporal Sulcus | left hemisphere | 2.832 | 0.0925 | 7.814 | 0.0052 | 1.078 | 0.2992 |
| right hemisphere | 5.144 | 0.0234 | 3.602 | 0.0578 | 0.230 | 0.6319 |
| Caudal anterior cingulate | left hemisphere | 2.201 | 0.1380 | 12.526 | **0.0004** | 0.046 | 0.8300 |
| right hemisphere | 0.231 | 0.6305 | 2.834 | 0.0924 | 2.564 | 0.1094 |
| Caudal middle frontal | left hemisphere | 0.452 | 0.5015 | 31.593 | **< 0.0001** | 0.576 | 0.4479 |
| right hemisphere | 0.020 | 0.8873 | 46.139 | **< 0.0001** | 0.426 | 0.5139 |
| Cuneus | left hemisphere | 2.501 | 0.1138 | 0.739 | 0.3902 | 0.013 | 0.9102 |
| right hemisphere | 0.435 | 0.5095 | 0.184 | 0.6682 | 0.716 | 0.3974 |
| Entorhinal | left hemisphere | 7.925 | 0.0049 | 10.345 | 0.0013 | 1.173 | 0.2789 |
| right hemisphere | 4.985 | 0.0256 | 42.303 | **< 0.0001** | 0.348 | 0.5551 |
| Fusiform | left hemisphere | 5.295 | 0.0214 | 20.124 | **< 0.0001** | 2.011 | 0.1563 |
| right hemisphere | 4.077 | 0.0436 | 31.897 | **< 0.0001** | 1.724 | 0.1893 |
| Inferior parietal | left hemisphere | 0.317 | 0.5737 | 16.898 | **< 0.0001** | 0.898 | 0.3433 |
| right hemisphere | 0.020 | 0.8881 | 28.195 | **< 0.0001** | 0.286 | 0.5929 |
| Inferior temporal | left hemisphere | 4.120 | 0.0425 | 9.941 | 0.0016 | 3.797 | 0.0514 |
| right hemisphere | 1.818 | 0.1776 | 4.601 | 0.0320 | 0.815 | 0.3666 |
| Isthmus cingulate | left hemisphere | 3.697 | 0.0546 | 2.172 | 0.1406 | 0.118 | 0.7312 |
| right hemisphere | 2.041 | 0.1532 | 5.411 | 0.0201 | 3.209 | 0.0733 |
| Lateral occipital | left hemisphere | 10.701 | 0.0011 | 4.222 | 0.0400 | 1.230 | 0.2675 |
| right hemisphere | 13.212 | **0.0003** | 19.133 | **< 0.0001** | 0.442 | 0.5062 |
| Lateral orbitofrontal | left hemisphere | 8.847 | 0.0030 | 0.447 | 0.5037 | 0.393 | 0.5307 |
| right hemisphere | 2.281 | 0.1310 | 0.019 | 0.8913 | 0.254 | 0.6144 |
| Lingual | left hemisphere | 0.304 | 0.5813 | 0.009 | 0.9246 | 0.402 | 0.5264 |
| right hemisphere | 1.065 | 0.3023 | 1.191 | 0.2752 | 0.133 | 0.7153 |
| Medial orbitofrontal | left hemisphere | 20.324 | **< 0.0001** | 4.453 | 0.0349 | 0.001 | 0.9699 |
| right hemisphere | 15.499 | **0.0001** | 2.570 | 0.1090 | 1.755 | 0.1853 |
| Middle temporal | left hemisphere | 0.080 | 0.7777 | 12.717 | **0.0004** | 4.078 | 0.0435 |
| right hemisphere | 1.634 | 0.2012 | 18.178 | **< 0.0001** | 2.050 | 0.1523 |
| Parahippocampal | left hemisphere | 12.606 | **0.0004** | 19.422 | **< 0.0001** | 0.017 | 0.8958 |
| right hemisphere | 4.575 | 0.0325 | 43.432 | **< 0.0001** | 1.058 | 0.3038 |
| Paracentral | left hemisphere | 0.036 | 0.8491 | 63.125 | **< 0.0001** | 0.005 | 0.9455 |
| right hemisphere | 0.036 | 0.8487 | 42.479 | **< 0.0001** | 0.667 | 0.4143 |
| Pars opercularis | left hemisphere | 3.644 | 0.0564 | 29.215 | **< 0.0001** | 0.044 | 0.8338 |
| right hemisphere | 4.012 | 0.0452 | 14.590 | **0.0001** | 0.266 | 0.6057 |
| Pars orbitalis | left hemisphere | 1.713 | 0.1906 | 15.957 | **0.0001** | 0.006 | 0.9395 |
| right hemisphere | 6.783 | 0.0092 | 33.682 | **< 0.0001** | 3.335 | 0.0679 |
| Pars triangularis | left hemisphere | 0.039 | 0.8444 | 12.711 | **0.0004** | 0.661 | 0.4164 |
| right hemisphere | 0.550 | 0.4585 | 20.786 | **< 0.0001** | 0.290 | 0.5900 |
| Pericalcarine | left hemisphere | 12.735 | **0.0004** | 16.094 | **0.0001** | 2.151 | 0.1426 |
| right hemisphere | 7.912 | 0.0049 | 5.822 | 0.0159 | 0.784 | 0.3760 |
| Postcentral | left hemisphere | 0.026 | 0.8726 | 62.883 | **< 0.0001** | 1.103 | 0.2937 |
| right hemisphere | 0.280 | 0.5968 | 72.433 | **< 0.0001** | 0.023 | 0.8783 |
| Posterior cingulate | left hemisphere | 0.071 | 0.7898 | 7.149 | 0.0075 | 0.688 | 0.4069 |
| right hemisphere | 0.191 | 0.6620 | 0.456 | 0.4993 | 0.599 | 0.4391 |
| Precentral | left hemisphere | 0.244 | 0.6211 | 61.551 | **< 0.0001** | 0.043 | 0.8349 |
| right hemisphere | 0.097 | 0.7554 | 47.524 | **< 0.0001** | 0.015 | 0.9010 |
| Precuneus | left hemisphere | 1.347 | 0.2458 | 4.407 | 0.0359 | 0.305 | 0.5805 |
| right hemisphere | 3.272 | 0.0706 | 6.832 | 0.0090 | 0.814 | 0.3669 |
| Rostral anterior cingulate | left hemisphere | 8.190 | 0.0042 | 15.004 | **0.0001** | 1.098 | 0.2949 |
| right hemisphere | 0.716 | 0.3974 | 0.939 | 0.3327 | 0.468 | 0.4940 |
| Rostral middle frontal | left hemisphere | 0.750 | 0.3867 | 0.006 | 0.9366 | 1.102 | 0.2939 |
| right hemisphere | 0.069 | 0.7929 | 0.111 | 0.7393 | 1.748 | 0.1862 |
| Superior frontal | left hemisphere | 2.881 | 0.0897 | 9.996 | 0.0016 | 0.982 | 0.3219 |
| right hemisphere | 0.346 | 0.5565 | 8.938 | 0.0028 | 1.343 | 0.2465 |
| Superior parietal | left hemisphere | 3.186 | 0.0743 | 9.293 | 0.0023 | 0.291 | 0.5897 |
| right hemisphere | 1.745 | 0.1866 | 17.141 | **< 0.0001** | 0.112 | 0.7380 |
| Superior temporal | left hemisphere | 10.733 | 0.0011 | 43.366 | **< 0.0001** | 1.351 | 0.2452 |
| right hemisphere | 3.141 | 0.0765 | 27.333 | **< 0.0001** | 0.937 | 0.3332 |
| Supramarginal | left hemisphere | 0.475 | 0.4909 | 48.517 | **< 0.0001** | 0.637 | 0.4249 |
| right hemisphere | 5.060 | 0.0246 | 40.048 | **< 0.0001** | 0.500 | 0.4796 |
| Frontalpole | left hemisphere | 1.444 | 0.2296 | 4.786 | 0.0287 | 0.098 | 0.7541 |
| right hemisphere | 1.294 | 0.2554 | 0.361 | 0.5478 | 4.171 | 0.0412 |
| Temporalpole | left hemisphere | 1.178 | 0.2779 | 0.243 | 0.6221 | 1.905 | 0.1676 |
| right hemisphere | 1.184 | 0.2765 | 0.429 | 0.5126 | 0.766 | 0.3815 |
| Transverse temporal | left hemisphere | 0.259 | 0.6110 | 81.009 | **< 0.0001** | 1.007 | 0.3157 |
| right hemisphere | 2.926 | 0.0872 | 37.926 | **< 0.0001** | 0.015 | 0.9012 |
| Insula | left hemisphere | 0.031 | 0.8599 | 0.140 | 0.7079 | 0.233 | 0.6294 |
| right hemisphere | 0.006 | 0.9379 | 2.198 | 0.1383 | 0.013 | 0.9093 |

*Note: Significant effects are indicated in bold.*

**Table S2.14. Interaction effects (group×sex) on cortical volume. (Bonferroni corrected, *P* < 0.0007).**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Cortical volume ( mm^3 )** |  | **Group effect** | | **Sex effect** | | **Interaction effect** | |
| **F value** | ***p* value** | **F value** | ***p* value** | **F value** | ***p* value** |
| Banks of Superior Temporal Sulcus | left hemisphere | 1.694 | 0.1931 | 2.127 | 0.1448 | 0.631 | 0.4270 |
| right hemisphere | 11.075 | 0.0009 | 9.182 | 0.0025 | 0.534 | 0.4649 |
| Caudal anterior cingulate | left hemisphere | 0.206 | 0.6496 | 31.413 | **< 0.0001** | 0.453 | 0.5008 |
| right hemisphere | 0.264 | 0.6073 | 3.428 | 0.0642 | 2.157 | 0.1420 |
| Caudal middle frontal | left hemisphere | 0.325 | 0.5688 | 0.789 | 0.3744 | 0.172 | 0.6787 |
| right hemisphere | 1.852 | 0.1737 | 3.113 | 0.0778 | 1.890 | 0.1693 |
| Cuneus | left hemisphere | 0.180 | 0.6711 | 29.695 | **< 0.0001** | 0.320 | 0.5714 |
| right hemisphere | 0.504 | 0.4776 | 14.188 | **0.0002** | 0.061 | 0.8054 |
| Entorhinal | left hemisphere | 0.040 | 0.8410 | 32.939 | **< 0.0001** | 0.004 | 0.9505 |
| right hemisphere | 0.070 | 0.7915 | 6.439 | 0.0112 | 0.287 | 0.5924 |
| Fusiform | left hemisphere | 4.857 | 0.0276 | 5.890 | 0.0153 | 0.191 | 0.6620 |
| right hemisphere | 6.347 | 0.0118 | 40.733 | **< 0.0001** | 1.500 | 0.2208 |
| Inferior parietal | left hemisphere | 16.052 | **0.0001** | 1.378 | 0.2405 | 0.027 | 0.8704 |
| right hemisphere | 15.710 | **0.0001** | 30.331 | **< 0.0001** | 0.640 | 0.4239 |
| Inferior temporal | left hemisphere | 0.174 | 0.6763 | 2.062 | 0.1511 | 0.022 | 0.8831 |
| right hemisphere | 2.117 | 0.1457 | 13.466 | **0.0002** | 0.819 | 0.3655 |
| Isthmus cingulate | left hemisphere | 0.397 | 0.5288 | 40.050 | **< 0.0001** | 0.848 | 0.3571 |
| right hemisphere | 7.316 | 0.0069 | 6.823 | 0.0090 | 0.438 | 0.5080 |
| Lateral occipital | left hemisphere | 3.260 | 0.0711 | 61.933 | **< 0.0001** | 0.852 | 0.3560 |
| right hemisphere | 1.502 | 0.2204 | 32.987 | **< 0.0001** | 2.108 | 0.1466 |
| Lateral orbitofrontal | left hemisphere | 0.840 | 0.3594 | 6.057 | 0.0139 | 1.288 | 0.2565 |
| right hemisphere | 3.401 | 0.0652 | 0.000 | 0.9848 | 0.071 | 0.7906 |
| Lingual | left hemisphere | 1.431 | 0.2316 | 16.515 | **< 0.0001** | 2.670 | 0.1023 |
| right hemisphere | 0.556 | 0.4560 | 2.392 | 0.1220 | 1.466 | 0.2260 |
| Medial orbitofrontal | left hemisphere | 2.956 | 0.0857 | 21.416 | **< 0.0001** | 0.674 | 0.4117 |
| right hemisphere | 1.938 | 0.1639 | 2.767 | 0.0963 | 1.626 | 0.2023 |
| Middle temporal | left hemisphere | 10.091 | 0.0015 | 2.650 | 0.1037 | 0.190 | 0.6627 |
| right hemisphere | 26.660 | **< 0.0001** | 1.348 | 0.2457 | 0.016 | 0.8984 |
| Parahippocampal | left hemisphere | 0.493 | 0.4825 | 1.834 | 0.1758 | 0.031 | 0.8606 |
| right hemisphere | 0.168 | 0.6819 | 0.841 | 0.3591 | 0.556 | 0.4559 |
| Paracentral | left hemisphere | 0.123 | 0.7264 | 2.411 | 0.1206 | 0.002 | 0.9631 |
| right hemisphere | 0.432 | 0.5110 | 0.684 | 0.4082 | 1.264 | 0.2610 |
| Pars opercularis | left hemisphere | 0.376 | 0.5396 | 15.780 | **0.0001** | 0.515 | 0.4731 |
| right hemisphere | 0.036 | 0.8498 | 0.093 | 0.7606 | 4.914 | 0.0267 |
| Pars orbitalis | left hemisphere | 2.823 | 0.0930 | 0.493 | 0.4827 | 0.227 | 0.6335 |
| right hemisphere | 11.441 | 0.0007 | 2.558 | 0.1098 | 0.671 | 0.4129 |
| Pars triangularis | left hemisphere | 0.876 | 0.3493 | 3.875 | 0.0491 | 0.503 | 0.4784 |
| right hemisphere | 1.943 | 0.1634 | 6.261 | 0.0124 | 0.282 | 0.5953 |
| Pericalcarine | left hemisphere | 6.225 | 0.0126 | 0.353 | 0.5527 | 0.014 | 0.9060 |
| right hemisphere | 4.762 | 0.0292 | 0.228 | 0.6332 | 0.347 | 0.5558 |
| Postcentral | left hemisphere | 13.258 | **0.0003** | 0.024 | 0.8772 | 0.755 | 0.3849 |
| right hemisphere | 8.087 | 0.0045 | 3.908 | 0.0481 | 0.642 | 0.4231 |
| Posterior cingulate | left hemisphere | 4.522 | 0.0335 | 7.382 | 0.0066 | 0.092 | 0.7612 |
| right hemisphere | 0.437 | 0.5085 | 1.529 | 0.2164 | 5.122 | 0.0237 |
| Precentral | left hemisphere | 3.445 | 0.0635 | 17.465 | **< 0.0001** | 0.536 | 0.4639 |
| right hemisphere | 3.590 | 0.0582 | 6.614 | 0.0102 | 0.155 | 0.6936 |
| Precuneus | left hemisphere | 1.119 | 0.2901 | 0.057 | 0.8119 | 1.115 | 0.2911 |
| right hemisphere | 0.041 | 0.8401 | 7.233 | 0.0072 | 5.663 | 0.0174 |
| Rostral anterior cingulate | left hemisphere | 10.120 | 0.0015 | 12.425 | **0.0004** | 0.029 | 0.8637 |
| right hemisphere | 0.521 | 0.4706 | 2.021 | 0.1552 | 0.488 | 0.4847 |
| Rostral middle frontal | left hemisphere | 0.002 | 0.9672 | 28.950 | **< 0.0001** | 0.209 | 0.6476 |
| right hemisphere | 0.106 | 0.7451 | 22.642 | **< 0.0001** | 0.004 | 0.9493 |
| Superior frontal | left hemisphere | 1.335 | 0.2480 | 8.706 | 0.0032 | 0.023 | 0.8796 |
| right hemisphere | 4.417 | 0.0357 | 4.565 | 0.0327 | 0.885 | 0.3470 |
| Superior parietal | left hemisphere | 4.442 | 0.0351 | 0.157 | 0.6917 | 2.536 | 0.1113 |
| right hemisphere | 1.029 | 0.3105 | 1.422 | 0.2331 | 2.278 | 0.1314 |
| Superior temporal | left hemisphere | 0.450 | 0.5022 | 6.328 | 0.0119 | 1.273 | 0.2594 |
| right hemisphere | 0.366 | 0.5451 | 14.728 | **0.0001** | 1.320 | 0.2507 |
| Supramarginal | left hemisphere | 7.006 | 0.0082 | 3.640 | 0.0565 | 0.049 | 0.8241 |
| right hemisphere | 11.829 | **0.0006** | 1.844 | 0.1746 | 2.067 | 0.1506 |
| Frontalpole | left hemisphere | 0.399 | 0.5274 | 7.158 | 0.0075 | 0.443 | 0.5056 |
| right hemisphere | 0.222 | 0.6377 | 7.630 | 0.0058 | 0.033 | 0.8568 |
| Temporalpole | left hemisphere | 1.004 | 0.3163 | 15.624 | **0.0001** | 0.086 | 0.7696 |
| right hemisphere | 2.670 | 0.1023 | 0.209 | 0.6477 | 3.821 | 0.0507 |
| Transverse temporal | left hemisphere | 0.097 | 0.7556 | 1.008 | 0.3154 | 0.335 | 0.5628 |
| right hemisphere | 4.056 | 0.0441 | 0.039 | 0.8426 | 0.442 | 0.5061 |
| Insula | left hemisphere | 11.261 | 0.0008 | 32.387 | **< 0.0001** | 0.021 | 0.8853 |
| right hemisphere | 14.005 | **0.0002** | 58.748 | **< 0.0001** | 0.047 | 0.8281 |

*Note: Significant effects are indicated in bold.*

**Table S2.15. Interaction effects (group×sex) on subcortical volume. (Bonferroni corrected, *P* < 0.0023).**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Subcortical volume ( mm^3 )** |  | **Group effect** | | **Sex effect** | | **Interaction effect** | |
| **F value** | ***p* value** | **F value** | ***p* value** | **F value** | ***p* value** |
| Cerebral white matter | left hemisphere | 0.166 | 0.6834 | 51.456 | **< 0.0001** | 0.673 | 0.4120 |
| right hemisphere | 0.358 | 0.5497 | 52.631 | **< 0.0001** | 0.670 | 0.4130 |
| Cerebellum white matter | left hemisphere | 11.365 | **0.0008** | 8.071 | 0.0045 | 0.025 | 0.8746 |
| right hemisphere | 15.461 | **0.0001** | 1.337 | 0.2477 | 0.806 | 0.3693 |
| Cerebellum cortex | left hemisphere | 2.090 | 0.1484 | 91.721 | **< 0.0001** | 0.186 | 0.6661 |
| right hemisphere | 1.581 | 0.2088 | 111.829 | **< 0.0001** | 0.193 | 0.6606 |
| Thalamus proper | left hemisphere | 0.262 | 0.6087 | 2.016 | 0.1558 | 0.005 | 0.9454 |
| right hemisphere | 11.050 | **0.0009** | 22.962 | **< 0.0001** | 0.167 | 0.6831 |
| Caudate | left hemisphere | 0.014 | 0.9053 | 14.826 | **0.0001** | 0.066 | 0.7973 |
| right hemisphere | 0.150 | 0.6986 | 19.892 | **< 0.0001** | 0.371 | 0.5425 |
| Putamen | left hemisphere | 0.000 | 0.9836 | 49.917 | **< 0.0001** | 0.106 | 0.7450 |
| right hemisphere | 0.039 | 0.8425 | 73.404 | **< 0.0001** | 0.483 | 0.4871 |
| Pallidum | left hemisphere | 3.317 | 0.0687 | 30.973 | **< 0.0001** | 0.033 | 0.8554 |
| right hemisphere | 2.930 | 0.0870 | 65.230 | **< 0.0001** | 0.007 | 0.9346 |
| Hippocampus | left hemisphere | 4.493 | 0.0341 | 9.845 | **0.0017** | 0.055 | 0.8144 |
| right hemisphere | 5.094 | 0.0241 | 5.671 | 0.0173 | 0.402 | 0.5262 |
| Amygdala | left hemisphere | 3.661 | 0.0558 | 64.248 | **< 0.0001** | 0.867 | 0.3519 |
| right hemisphere | 0.897 | 0.3436 | 63.373 | **< 0.0001** | 0.177 | 0.6741 |
| Accumbens area | left hemisphere | 1.616 | 0.2037 | 2.059 | 0.1514 | 0.552 | 0.4576 |
| right hemisphere | 2.667 | 0.1025 | 3.602 | 0.0578 | 0.280 | 0.5965 |
| Ventraldc | left hemisphere | 0.193 | 0.6606 | 7.889 | 0.0050 | 0.280 | 0.5967 |
| right hemisphere | 5.084 | 0.0242 | 14.045 | **0.0002** | 0.059 | 0.8085 |

*Note: Significant effects are indicated in bold.*

**Table S2.16. Interaction effects (group×sex) on fiber tract volume (Bonferroni corrected, *P* < 0.0014).**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Group effect** | | **Sex effect** | | **Interaction effect** | |
| **F value** | **p value** | **F value** | **p value** | **F value** | **p value** |
| fornix | left hemisphere | 8.267 | 0.0041 | 24.754 | **< 0.0001** | 2.519 | 0.1126 |
| right hemisphere | 9.241 | 0.0024 | 8.006 | 0.0047 | 2.681 | 0.1017 |
| cingulate cingulum | left hemisphere | 0.733 | 0.3920 | 12.436 | **0.0004** | 1.037 | 0.3086 |
| right hemisphere | 2.265 | 0.1325 | 1.661 | 0.1975 | 1.008 | 0.3154 |
| parahippocampal cingulum | left hemisphere | 9.824 | 0.0017 | 1.232 | 0.2671 | 6.484 | 0.0109 |
| right hemisphere | 0.145 | 0.7030 | 9.232 | 0.0024 | 6.095 | 0.0136 |
| corticospinal/pyramidal | left hemisphere | 0.022 | 0.8816 | 7.845 | 0.0051 | 2.844 | 0.0918 |
| right hemisphere | 0.018 | 0.8927 | 17.141 | **< 0.0001** | 0.802 | 0.3705 |
| anterior thalamic radiations | left hemisphere | 0.031 | 0.8595 | 1.094 | 0.2957 | 0.228 | 0.6332 |
| right hemisphere | 0.047 | 0.8291 | 6.101 | 0.0136 | 1.323 | 0.2502 |
| uncinate | left hemisphere | 1.333 | 0.2484 | 117.000 | **< 0.0001** | 0.060 | 0.8069 |
| right hemisphere | 1.587 | 0.2078 | 56.790 | **< 0.0001** | 0.036 | 0.8503 |
| inferior longitudinal fasiculus | left hemisphere | 0.005 | 0.9426 | 1.354 | 0.2447 | 0.576 | 0.4481 |
| right hemisphere | 4.839 | 0.0279 | 0.029 | 0.8656 | 2.146 | 0.1430 |
| inferior-fronto-occipital fasiculus | left hemisphere | 3.328 | 0.0682 | 0.083 | 0.7731 | 1.705 | 0.1917 |
| right hemisphere | 1.988 | 0.1586 | 0.000 | 0.9883 | 1.051 | 0.3054 |
| foreceps major |  | 2.301 | 0.1294 | 17.052 | **< 0.0001** | 0.778 | 0.3778 |
| foreceps minor |  | 0.799 | 0.3714 | 11.950 | **0.0006** | 5.171 | 0.0230 |
| corpus callosum |  | 0.237 | 0.6262 | 0.810 | 0.3681 | 2.595 | 0.1073 |
| superior longitudinal fasiculus | left hemisphere | 0.117 | 0.7320 | 49.281 | **< 0.0001** | 6.984 | 0.0083 |
| right hemisphere | 0.537 | 0.4637 | 30.343 | **< 0.0001** | 1.291 | 0.2560 |
| temporal superior longitudinal fasiculus | left hemisphere | 0.008 | 0.9306 | 43.467 | **< 0.0001** | 5.410 | 0.0201 |
| right hemisphere | 0.011 | 0.9152 | 26.579 | **< 0.0001** | 1.508 | 0.2195 |
| parietal superior longitudinal fasiculus | left hemisphere | 0.000 | 0.9893 | 23.730 | **< 0.0001** | 9.639 | 0.0019 |
| right hemisphere | 0.797 | 0.3721 | 27.419 | **< 0.0001** | 1.485 | 0.2230 |
| superior corticostriate | left hemisphere | 3.288 | 0.0699 | 0.005 | 0.9410 | 1.711 | 0.1909 |
| right hemisphere | 6.464 | 0.0111 | 0.790 | 0.3741 | 0.839 | 0.3597 |
| superior corticostriate-frontal cortex only | left hemisphere | 7.571 | 0.0060 | 0.122 | 0.7269 | 0.727 | 0.3940 |
| right hemisphere | 12.594 | **0.0004** | 5.912 | 0.0151 | 0.033 | 0.8568 |
| superior corticostriate-parietal cortex only | left hemisphere | 0.047 | 0.8291 | 0.066 | 0.7980 | 4.643 | 0.0312 |
| right hemisphere | 5.780 | 0.0163 | 1.050 | 0.3057 | 0.543 | 0.4611 |
| striatal inferior frontal cortex | left hemisphere | 2.126 | 0.1449 | 14.118 | **0.0002** | 0.208 | 0.6480 |
| right hemisphere | 1.108 | 0.2926 | 1.740 | 0.1873 | 0.054 | 0.8163 |
| inferior frontal superior frontal cortex | left hemisphere | 18.257 | **< 0.0001** | 4.520 | 0.0336 | 0.361 | 0.5483 |
| right hemisphere | 22.021 | **< 0.0001** | 11.163 | **0.0008** | 0.141 | 0.7073 |
| fornix, excluding fimbria | left hemisphere | 1.466 | 0.2260 | 3.050 | 0.0809 | 2.422 | 0.1198 |
| right hemisphere | 10.246 | **0.0014** | 1.486 | 0.2229 | 2.318 | 0.1280 |

*Note: Significant effects are indicated in bold.*

**Table S2.17. Group differences of cortical thickness between the Preterm and Control group (Multiple imputation) (Bonferroni corrected, *P* < 0.0007).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Cortical thickness ( mm )** |  | **Complete cases**  **Pre ( N = 1706 ) vs. Con ( N = 1865 )** | **Multiple imputation**  **Pre ( N = 2107 ) vs. Con ( N = 1865 )** |
| ***p* value** | ***p* value** |
| Banks of Superior Temporal Sulcus | left hemisphere | 0.1036 | 0.0208 |
| right hemisphere | 0.0248 | 0.0294 |
| Caudal anterior cingulate | left hemisphere | 0.1342 | 0.2430 |
| right hemisphere | 0.5685 | 0.4389 |
| Caudal middle frontal | left hemisphere | 0.4745 | 0.9330 |
| right hemisphere | 0.8587 | 0.6052 |
| Cuneus | left hemisphere | 0.1147 | 0.1126 |
| right hemisphere | 0.5394 | 0.3613 |
| Entorhinal | left hemisphere | 0.0058 | 0.0083 |
| right hemisphere | 0.0276 | 0.2238 |
| Fusiform | left hemisphere | 0.0172 | 0.2241 |
| right hemisphere | 0.0363 | 0.2247 |
| Inferior parietal | left hemisphere | 0.6093 | 0.1147 |
| right hemisphere | 0.9113 | 0.4208 |
| Inferior temporal | left hemisphere | 0.0324 | 0.2627 |
| right hemisphere | 0.1614 | 0.7393 |
| Isthmus cingulate | left hemisphere | 0.0519 | 0.1401 |
| right hemisphere | 0.1832 | 0.0395 |
| Lateral occipital | left hemisphere | 0.0009 | 0.0014 |
| right hemisphere | **0.0003** | 0.0008 |
| Lateral orbitofrontal | left hemisphere | 0.0026 | 0.0102 |
| right hemisphere | 0.1235 | 0.2405 |
| Lingual | left hemisphere | 0.5569 | 0.6383 |
| right hemisphere | 0.2921 | 0.6174 |
| Medial orbitofrontal | left hemisphere | **< 0.0001** | **< 0.0001** |
| right hemisphere | **0.0001** | **0.0002** |
| Middle temporal | left hemisphere | 0.8643 | 0.2267 |
| right hemisphere | 0.2298 | 0.0225 |
| Parahippocampal | left hemisphere | **0.0004** | 0.0026 |
| right hemisphere | 0.0279 | 0.0824 |
| Paracentral | left hemisphere | 0.8459 | 0.7332 |
| right hemisphere | 0.8132 | 0.6100 |
| Pars opercularis | left hemisphere | 0.0575 | 0.3674 |
| right hemisphere | 0.0480 | 0.1043 |
| Pars orbitalis | left hemisphere | 0.1913 | 0.1801 |
| right hemisphere | 0.0122 | 0.0044 |
| Pars triangularis | left hemisphere | 0.8091 | 0.4464 |
| right hemisphere | 0.4399 | 0.4360 |
| Pericalcarine | left hemisphere | **0.0005** | **0.0002** |
| right hemisphere | 0.0057 | 0.0097 |
| Postcentral | left hemisphere | 0.8268 | 0.6403 |
| right hemisphere | 0.5903 | 0.9692 |
| Posterior cingulate | left hemisphere | 0.8250 | 0.7900 |
| right hemisphere | 0.6307 | 0.6882 |
| Precentral | left hemisphere | 0.6124 | 0.5870 |
| right hemisphere | 0.7498 | 0.4526 |
| Precuneus | left hemisphere | 0.2328 | 0.4214 |
| right hemisphere | 0.0782 | 0.2488 |
| Rostral anterior cingulate | left hemisphere | 0.0035 | 0.0087 |
| right hemisphere | 0.3759 | 0.6412 |
| Rostral middle frontal | left hemisphere | 0.3549 | 0.9134 |
| right hemisphere | 0.7368 | 0.2699 |
| Superior frontal | left hemisphere | 0.0794 | 0.5261 |
| right hemisphere | 0.5137 | 0.6119 |
| Superior parietal | left hemisphere | 0.0788 | 0.5008 |
| right hemisphere | 0.1921 | 0.6910 |
| Superior temporal | left hemisphere | 0.0008 | 0.0048 |
| right hemisphere | 0.0676 | 0.1345 |
| Supramarginal | left hemisphere | 0.4629 | 0.7708 |
| right hemisphere | 0.0220 | 0.0952 |
| Frontalpole | left hemisphere | 0.2222 | 0.2159 |
| right hemisphere | 0.2107 | 0.3940 |
| Temporalpole | left hemisphere | 0.2449 | 0.4766 |
| right hemisphere | 0.2977 | 0.9228 |
| Transverse temporal | left hemisphere | 0.5721 | 0.4690 |
| right hemisphere | 0.0880 | 0.0246 |
| Insula | left hemisphere | 0.8807 | 0.2867 |
| right hemisphere | 0.9428 | 0.2919 |

*Note: Significant effects are indicated in bold.*

**Table S2.18. Group differences of cortical volume between the Preterm and Control group (Multiple imputation) (Bonferroni corrected, *P* < 0.0007).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Cortical volume ( mm^3 )** |  | **Complete cases**  **Pre ( N = 1706 ) vs. Con ( N = 1865 )** | **Multiple imputation**  **Pre ( N = 2107 ) vs. Con ( N = 1865 )** |
| ***p* value** | ***p* value** |
| Banks of Superior Temporal Sulcus | left hemisphere | 0.2079 | 0.0606 |
| right hemisphere | 0.0010 | 0.0019 |
| Caudal anterior cingulate | left hemisphere | 0.6225 | 0.4374 |
| right hemisphere | 0.5512 | 0.9702 |
| Caudal middle frontal | left hemisphere | 0.5527 | 0.3723 |
| right hemisphere | 0.1503 | 0.0651 |
| Cuneus | left hemisphere | 0.6936 | 0.8156 |
| right hemisphere | 0.4685 | 0.5355 |
| Entorhinal | left hemisphere | 0.8381 | 0.7104 |
| right hemisphere | 0.8141 | 0.4507 |
| Fusiform | left hemisphere | 0.0291 | 0.0103 |
| right hemisphere | 0.0141 | **0.0004** |
| Inferior parietal | left hemisphere | **0.0001** | **< 0.0001** |
| right hemisphere | **0.0001** | **< 0.0001** |
| Inferior temporal | left hemisphere | 0.6818 | 0.0997 |
| right hemisphere | 0.1594 | 0.3347 |
| Isthmus cingulate | left hemisphere | 0.4954 | 0.2782 |
| right hemisphere | 0.0076 | **0.0002** |
| Lateral occipital | left hemisphere | 0.0631 | 0.0689 |
| right hemisphere | 0.1910 | 0.2784 |
| Lateral orbitofrontal | left hemisphere | 0.3267 | 0.0332 |
| right hemisphere | 0.0669 | 0.0068 |
| Lingual | left hemisphere | 0.2681 | 0.0923 |
| right hemisphere | 0.4968 | 0.2372 |
| Medial orbitofrontal | left hemisphere | 0.0937 | 0.1384 |
| right hemisphere | 0.1857 | 0.3422 |
| Middle temporal | left hemisphere | 0.0016 | **< 0.0001** |
| right hemisphere | **< 0.0001** | **< 0.0001** |
| Parahippocampal | left hemisphere | 0.4879 | 0.9784 |
| right hemisphere | 0.7120 | 0.5336 |
| Paracentral | left hemisphere | 0.7240 | 0.7823 |
| right hemisphere | 0.5511 | 0.6512 |
| Pars opercularis | left hemisphere | 0.5130 | 0.2774 |
| right hemisphere | 0.7549 | 0.3928 |
| Pars orbitalis | left hemisphere | 0.0977 | 0.0294 |
| right hemisphere | 0.0008 | 0.0011 |
| Pars triangularis | left hemisphere | 0.3287 | 0.0622 |
| right hemisphere | 0.1541 | 0.0554 |
| Pericalcarine | left hemisphere | 0.0127 | 0.0187 |
| right hemisphere | 0.0314 | 0.0373 |
| Postcentral | left hemisphere | **0.0002** | **< 0.0001** |
| right hemisphere | 0.0038 | 0.0010 |
| Posterior cingulate | left hemisphere | 0.0319 | 0.0324 |
| right hemisphere | 0.5916 | 0.3467 |
| Precentral | left hemisphere | 0.0576 | 0.0311 |
| right hemisphere | 0.0607 | 0.0062 |
| Precuneus | left hemisphere | 0.2636 | 0.0183 |
| right hemisphere | 0.7387 | 0.0764 |
| Rostral anterior cingulate | left hemisphere | 0.0014 | **0.0003** |
| right hemisphere | 0.4465 | 0.2091 |
| Rostral middle frontal | left hemisphere | 0.9873 | 0.3566 |
| right hemisphere | 0.7474 | 0.1457 |
| Superior frontal | left hemisphere | 0.2438 | 0.0374 |
| right hemisphere | 0.0311 | 0.0037 |
| Superior parietal | left hemisphere | 0.0280 | 0.0012 |
| right hemisphere | 0.2717 | 0.0191 |
| Superior temporal | left hemisphere | 0.4627 | 0.5354 |
| right hemisphere | 0.5031 | 0.6667 |
| Supramarginal | left hemisphere | 0.0078 | **0.0001** |
| right hemisphere | **0.0004** | **< 0.0001** |
| Frontalpole | left hemisphere | 0.5511 | 0.2448 |
| right hemisphere | 0.6443 | 0.8670 |
| Temporalpole | left hemisphere | 0.3234 | 0.5984 |
| right hemisphere | 0.1267 | 0.4241 |
| Transverse temporal | left hemisphere | 0.7310 | 0.7137 |
| right hemisphere | 0.0477 | 0.0316 |
| Insula | left hemisphere | 0.0008 | **0.0005** |
| right hemisphere | **0.0002** | **0.0001** |

*Note: Significant effects are indicated in bold.*

**Table S2.19. Group differences of subcortical volume between the Preterm and Control group (Multiple imputation) (Bonferroni corrected, *P* < 0.0023).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Subcortical volume ( mm^3 )** |  | **Complete cases**  **Pre ( N = 1706 ) vs. Con ( N = 1865 )** | **Multiple imputation**  **Pre ( N = 2107 ) vs. Con ( N = 1865 )** |
| ***p* value** | ***p* value** |
| Cerebral white matter | left hemisphere | 0.7166 | 0.9699 |
| right hemisphere | 0.5797 | 0.7082 |
| Cerebellum white matter | left hemisphere | **0.0007** | **0.0004** |
| right hemisphere | **0.0001** | **0.0001** |
| Cerebellum cortex | left hemisphere | 0.1545 | 0.0800 |
| right hemisphere | 0.2169 | 0.0644 |
| Thalamus proper | left hemisphere | 0.6108 | 0.1548 |
| right hemisphere | **0.0010** | **< 0.0001** |
| Caudate | left hemisphere | 0.9164 | 0.2876 |
| right hemisphere | 0.6734 | 0.7781 |
| Putamen | left hemisphere | 0.9692 | 0.8371 |
| right hemisphere | 0.8123 | 0.7831 |
| Pallidum | left hemisphere | 0.0667 | 0.0041 |  |
| right hemisphere | 0.0873 | 0.0241 |
| Hippocampus | left hemisphere | 0.0349 | 0.0296 |
| right hemisphere | 0.0261 | 0.0142 |
| Amygdala | left hemisphere | 0.0492 | 0.1490 |
| right hemisphere | 0.3310 | 0.5966 |
| Accumbens area | left hemisphere | 0.2180 | 0.0931 |
| right hemisphere | 0.0960 | 0.0173 |
| Ventraldc | left hemisphere | 0.6390 | 0.4555 |
| right hemisphere | 0.0248 | 0.0148 |

*Note: Significant effects are indicated in bold.*

**Table S2.20. Group differences of fiber tract volume between the Preterm and Control group (Multiple imputation) (Bonferroni corrected, *P* < 0.0014).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Cortical volume ( mm^3 )** |  | **Complete cases**  **Pre ( N = 1706 ) vs. Con ( N = 1865 )** | **Multiple imputation**  **Pre ( N = 2107 ) vs. Con ( N = 1865 )** |
| ***p* value** | ***p* value** |
| Fornix | left hemisphere | 0.0033 | **0.0004** |
| right hemisphere | **0.0011** | **0.0001** |
| Cingulate cingulum | left hemisphere | 0.3701 | 0.1991 |
| right hemisphere | 0.1224 | 0.1172 |
| Parahippocampal cingulum | left hemisphere | **0.0012** | 0.0054 |
| right hemisphere | 0.6328 | 0.7418 |
| Corticospinal/pyramidal | left hemisphere | 0.9337 | 0.9700 |
| right hemisphere | 0.8650 | 0.8775 |
| Anterior thalamic radiations | left hemisphere | 0.8740 | 0.9320 |
| right hemisphere | 0.8642 | 0.7627 |
| Uncinate | left hemisphere | 0.2440 | 0.1038 |
| right hemisphere | 0.2048 | 0.0805 |
| Inferior longitudinal fasiculus | left hemisphere | 0.9662 | 0.9993 |
| right hemisphere | 0.0321 | 0.0490 |
| Inferior-fronto-occipital fasiculus | left hemisphere | 0.0607 | 0.0128 |
| right hemisphere | 0.1468 | 0.0364 |
| Foreceps major |  | 0.1206 | 0.0586 |
| Foreceps minor |  | 0.3257 | 0.1249 |
| Corpus callosum |  | 0.6713 | 0.9115 |
| Superior longitudinal fasiculus | left hemisphere | 0.8109 | 0.8146 |
| right hemisphere | 0.4909 | 0.5892 |
| Temporal superior longitudinal fasiculus | left hemisphere | 0.9970 | 0.7051 |
| right hemisphere | 0.9533 | 0.7465 |
| Parietal superior longitudinal fasiculus | left hemisphere | 0.8929 | 0.6485 |
| right hemisphere | 0.3978 | 0.4400 |
| Superior corticostriate | left hemisphere | 0.0779 | 0.0482 |
| right hemisphere | 0.0122 | 0.0043 |
| Superior corticostriate-frontal cortex only | left hemisphere | 0.0066 | 0.0056 |
| right hemisphere | 0.0019 | **0.0002** |
| Superior corticostriate-parietal cortex only | left hemisphere | 0.7641 | 0.9837 |
| right hemisphere | 0.0175 | 0.0047 |
| Striatal inferior frontal cortex | left hemisphere | 0.1397 | 0.3732 |
| right hemisphere | 0.2964 | 0.9624 |
| Inferior frontal superior frontal cortex | left hemisphere | 0.2018 | 0.4218 |
| right hemisphere | 0.1268 | 0.3118 |
| Fornix, excluding fimbria | left hemisphere | 0.2033 | 0.0472 |
| right hemisphere | **0.0011** | **< 0.0001** |

*Note: Significant effects are indicated in bold.*

**Table S3.1. Partial correlation between gestational age and psychopathological differences in the Preterm group (Bonferroni corrected, *P* < 0.0042).**

|  |  |  |
| --- | --- | --- |
| **Gestational age** | ***r* value** | ***p* value** |
|
| **CBCL Category** |  |  |
| cbcl\_scr\_syn\_anxdep | -0.019 | 0.4299 |
| cbcl\_scr\_syn\_withdep | -0.010 | 0.6981 |
| cbcl\_scr\_syn\_somatic | -0.022 | 0.3642 |
| cbcl\_scr\_syn\_social | -0.043 | 0.0789 |
| cbcl\_scr\_syn\_attention | -0.045 | 0.0644 |
| cbcl\_scr\_syn\_internal | -0.022 | 0.3773 |
| cbcl\_scr\_syn\_totprob | -0.046 | 0.0601 |
| cbcl\_scr\_dsm5\_depress | -0.012 | 0.6266 |
| cbcl\_scr\_dsm5\_anxdisord | -0.025 | 0.3153 |
| cbcl\_scr\_dsm5\_somaticpr | -0.017 | 0.4892 |
| cbcl\_scr\_dsm5\_adhd | -0.083 | **0.0007** |
| cbcl\_scr\_07\_stress | -0.037 | 0.1302 |

*Note: Significant effects are indicated in bold.*

**Table S3.2. Partial correlation between gestational age and cognitive differences in the Preterm group (Bonferroni corrected, *P* < 0.0083).**

|  |  |  |
| --- | --- | --- |
| **Gestational age** | ***r* value** | ***p* value** |
|
| **Nihtb Cognitive measurement** |  |  |
| nihtbx\_picvocab | 0.057 | 0.0208 |
| nihtbx\_flanker | 0.034 | 0.1661 |
| nihtbx\_reading | 0.054 | 0.0292 |
| nihtbx\_fluidcomp | 0.042 | 0.0856 |
| nihtbx\_cryst | 0.065 | **0.0082** |
| nihtbx\_totalcomp | 0.061 | 0.0133 |

*Note: Significant effects are indicated in bold.*

**Table S3.3. Partial correlation between birth weight and psychopathological differences in the Preterm group (Bonferroni corrected, *P* < 0.0042).**

|  |  |  |
| --- | --- | --- |
| **Birth weight** | ***r* value** | ***p* value** |
|
| cbcl\_scr\_syn\_anxdep | 0.028 | 0.2536 |
| cbcl\_scr\_syn\_withdep | 0.001 | 0.9759 |
| cbcl\_scr\_syn\_somatic | 0.011 | 0.6699 |
| cbcl\_scr\_syn\_social | -0.003 | 0.8910 |
| cbcl\_scr\_syn\_attention | 0.013 | 0.6074 |
| cbcl\_scr\_syn\_internal | 0.020 | 0.4258 |
| cbcl\_scr\_syn\_totprob | 0.026 | 0.2905 |
| cbcl\_scr\_dsm5\_depress | 0.040 | 0.1054 |
| cbcl\_scr\_dsm5\_anxdisord | 0.009 | 0.7126 |
| cbcl\_scr\_dsm5\_somaticpr | 0.016 | 0.5298 |
| cbcl\_scr\_dsm5\_adhd | 0.030 | 0.2297 |
| cbcl\_scr\_07\_stress | 0.009 | 0.7198 |

*Note: Significant effects are indicated in bold.*

**Table S3.4. Partial correlation between birth weight and cognitive differences in the Preterm group (Bonferroni corrected, *P* < 0.0083).**

|  |  |  |
| --- | --- | --- |
| **Birth weight** | ***r* value** | ***p* value** |
|
| nihtbx\_picvocab | 0.100 | **0.0003** |
| nihtbx\_flanker | 0.044 | 0.4504 |
| nihtbx\_reading | 0.092 | **0.0011** |
| nihtbx\_fluidcomp | 0.103 | **0.0002** |
| nihtbx\_cryst | 0.117 | **0.0000** |
| nihtbx\_totalcomp | 0.129 | **0.0000** |

*Note: Significant effects are indicated in bold.*

**Table S4.1. Partial correlation between gestational age and differences in cortical thickness in the Preterm group (Bonferroni corrected, *P* < 0.010).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Gestational age** |  | ***r* value** | ***p* value** |
|  |
| Medial orbitofrontal | left hemisphere | 0.004 | 0.8545 |
| Parahippocampal | left hemisphere | -0.025 | 0.3036 |
| Pericalcarine | left hemisphere | -0.009 | 0.7003 |
| Lateral occipital | right hemisphere | -0.029 | 0.2354 |
| Medial orbitofrontal | right hemisphere | -0.001 | 0.9814 |

*Note: Significant effects are indicated in bold.*

**Table S4.2. Partial correlation between gestational age and differences in cortical volume in the Preterm group (Bonferroni corrected, *P* < 0.0083).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Gestational age** |  | ***r* value** | ***p* value** |
|  |
| Inferior parietal | left hemisphere | 0.010 | 0.6796 |
| Postcentral | left hemisphere | 0.026 | 0.2969 |
| Inferior parietal | right hemisphere | 0.000 | 0.9952 |
| Middle temporal | right hemisphere | 0.019 | 0.4484 |
| Supramarginal | right hemisphere | -0.023 | 0.3460 |
| Insula | right hemisphere | 0.036 | 0.1468 |

*Note: Significant effects are indicated in bold.*

**Table S4.3. Partial correlation between gestational age and differences in subcortical volume in the Preterm group (Bonferroni corrected, *P* < 0.017).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Gestational age** |  | ***r* value** | ***p* value** |
|  |
| Cerebellum white matter | left hemisphere | -0.029 | 0.2410 |
| Cerebellum white matter | right hemisphere | -0.021 | 0.3814 |
| Thalamus proper | right hemisphere | 0.035 | 0.1513 |

*Note: Significant effects are indicated in bold.*

**Table S4.4. Partial correlation between gestational age and differences in fiber tract volume in the Preterm group (Bonferroni corrected, *P* < 0.017).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Gestational age** |  | ***r* value** | ***p* value** |
|  |
| Parahippocampal cingulum | left hemisphere | 0.015 | 0.5609 |
| Fornix | right hemisphere | -0.026 | 0.3086 |
| Fornix, excluding fimbria | right hemisphere | 0.000 | 0.9989 |

*Note: Significant effects are indicated in bold.*

**Table S4.5. Partial correlation between birth weight and differences in cortical thickness in the Preterm group (Bonferroni corrected, *P* < 0.010).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Birth weight** |  | ***r* value** | ***p* value** |
|  |
| Medial orbitofrontal | left hemisphere | -0.098 | **0.0001** |
| Parahippocampal | left hemisphere | 0.014 | 0.5708 |
| Pericalcarine | left hemisphere | -0.054 | 0.0274 |
| Lateral occipital | right hemisphere | -0.075 | **0.0025** |
| Medial orbitofrontal | right hemisphere | -0.117 | **< 0.0001** |

*Note: Significant effects are indicated in bold.*

**Table S4.6. Partial correlation between birth weight and differences in cortical volume in the Preterm group (Bonferroni corrected, *P* < 0.0083).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Birth weight** |  | ***r* value** | ***p* value** |
|  |
| Inferior parietal | left hemisphere | 0.111 | **< 0.0001** |
| Postcentral | left hemisphere | 0.066 | **0.0458** |
| Inferior parietal | right hemisphere | 0.103 | **0.0002** |
| Middle temporal | right hemisphere | 0.156 | **< 0.0001** |
| Supramarginal | right hemisphere | 0.064 | 0.0538 |
| Insula | right hemisphere | 0.063 | 0.0658 |

*Note: Significant effects are indicated in bold.*

**Table S4.7. Partial correlation between birth weight and differences in subcortical volume in the Preterm group (Bonferroni corrected, *P* < 0.017).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Birth weight** |  | ***r* value** | ***p* value** |
|  |
| Cerebellum white matter | left hemisphere | 0.077 | **0.0053** |
| Cerebellum white matter | right hemisphere | 0.063 | **0.0303** |
| Thalamus | right hemisphere | 0.124 | **< 0.0001** |

*Note: Significant effects are indicated in bold.*

**Table S4.8. Partial correlation between birth weight and differences in fiber tract volume in the Preterm group (Bonferroni corrected, *P* < 0.017).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Birth weight** |  | ***r* value** | ***p* value** |
|  |
| Parahippocampal-cingulum | left hemisphere | 0.071 | **0.0053** |
| Fornix | right hemisphere | -0.018 | 0.4698 |
| Fornix, excluding fimbria | right hemisphere | 0.076 | **0.0027** |

*Note: Significant effects are indicated in bold.*

**Table S5.1. Partial correlation between psychopathological differences and differences in cortical thickness in the Preterm group (Bonferroni corrected, *P* < 0.0008).**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Cortical thickness ( mm )** | **Medial orbitofrontal\_L** | | **Parahippocampal\_L** | | **Pericalcarine\_L** | | **Lateraloccipital\_R** | | **Medial orbitofrontal\_R** | |
| **r value** | **p value** | **r value** | **p value** | **r value** | **p value** | **r value** | **p value** | **r value** | **p value** |
| cbcl\_scr\_syn\_anxdep | -0.014 | 0.5585 | 0.037 | 0.1351 | 0.000 | 0.9897 | 0.040 | 0.1019 | -0.003 | 0.9159 |
| cbcl\_scr\_syn\_withdep | -0.002 | 0.9409 | 0.027 | 0.2792 | -0.021 | 0.3853 | -0.014 | 0.5659 | 0.010 | 0.6777 |
| cbcl\_scr\_syn\_somatic | -0.012 | 0.6255 | -0.024 | 0.3377 | -0.025 | 0.3212 | 0.057 | 0.0202 | -0.006 | 0.7990 |
| cbcl\_scr\_syn\_social | -0.024 | 0.3381 | -0.003 | 0.8991 | 0.020 | 0.4280 | 0.034 | 0.1671 | -0.019 | 0.4424 |
| cbcl\_scr\_syn\_attention | -0.036 | 0.1494 | -0.022 | 0.3707 | 0.031 | 0.2031 | 0.033 | 0.1830 | -0.032 | 0.2013 |
| cbcl\_scr\_syn\_internal | -0.013 | 0.6009 | 0.020 | 0.4126 | -0.016 | 0.5278 | 0.039 | 0.1176 | -0.001 | 0.9826 |
| cbcl\_scr\_syn\_totprob | -0.037 | 0.1376 | 0.002 | 0.9516 | 0.016 | 0.5234 | 0.041 | 0.0963 | -0.031 | 0.2174 |
| cbcl\_scr\_dsm5\_depress | -0.011 | 0.6504 | 0.027 | 0.2769 | -0.004 | 0.8792 | 0.035 | 0.1573 | -0.009 | 0.7276 |
| cbcl\_scr\_dsm5\_anxdisord | -0.010 | 0.6938 | 0.014 | 0.5671 | 0.007 | 0.7692 | 0.033 | 0.1882 | -0.011 | 0.6690 |
| cbcl\_scr\_dsm5\_somaticpr | -0.021 | 0.3910 | -0.020 | 0.4238 | -0.040 | 0.1080 | 0.060 | 0.0152 | -0.009 | 0.7207 |
| cbcl\_scr\_dsm5\_adhd | -0.043 | 0.0831 | -0.019 | 0.4447 | 0.019 | 0.4514 | 0.041 | 0.0958 | -0.035 | 0.1562 |
| cbcl\_scr\_07\_stress | -0.022 | 0.3765 | -0.004 | 0.8743 | 0.017 | 0.4989 | 0.029 | 0.2355 | -0.023 | 0.3519 |

*Note: Significant effects are indicated in bold.*

**Table S5.2. Partial correlation between psychopathological differences and differences in cortical volume in the Preterm group (Bonferroni corrected, *P* < 0.0007).**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Cortical volume ( mm^3 )** | **Inferior parietal\_L** | | **Postcentral\_L** | | **Inferior parietal\_R** | | **Middle temporal\_R** | | **Supramarginal\_R** | | **Insula\_R** | |
| **r value** | **p value** | **r value** | **p value** | **r value** | **p value** | **r value** | **p value** | **r value** | **p value** | **r value** | **p value** |
| cbcl\_scr\_syn\_anxdep | -0.012 | 0.6189 | -0.004 | 0.8783 | -0.003 | 0.9093 | 0.006 | 0.8238 | 0.002 | 0.9466 | -0.012 | 0.6185 |
| cbcl\_scr\_syn\_withdep | -0.049 | 0.0484 | -0.006 | 0.8034 | -0.032 | 0.1997 | -0.005 | 0.8464 | -0.028 | 0.2661 | -0.064 | 0.0101 |
| cbcl\_scr\_syn\_somatic | -0.004 | 0.8827 | 0.038 | 0.1236 | -0.014 | 0.5772 | -0.003 | 0.9144 | 0.020 | 0.4108 | -0.015 | 0.5490 |
| cbcl\_scr\_syn\_social | -0.013 | 0.5889 | -0.007 | 0.7879 | -0.032 | 0.1895 | 0.005 | 0.8494 | 0.009 | 0.7174 | -0.049 | 0.0465 |
| cbcl\_scr\_syn\_attention | -0.016 | 0.5061 | -0.007 | 0.7886 | -0.030 | 0.2241 | -0.037 | 0.1382 | -0.012 | 0.6207 | -0.031 | 0.2107 |
| cbcl\_scr\_syn\_internal | -0.023 | 0.3480 | 0.010 | 0.6958 | -0.016 | 0.5097 | 0.001 | 0.9799 | 0.000 | 0.9915 | -0.032 | 0.1985 |
| cbcl\_scr\_syn\_totprob | -0.024 | 0.3384 | -0.001 | 0.9608 | -0.051 | 0.0406 | -0.019 | 0.4353 | 0.006 | 0.8192 | -0.025 | 0.3079 |
| cbcl\_scr\_dsm5\_depress | -0.022 | 0.3756 | 0.013 | 0.6125 | -0.026 | 0.2916 | -0.013 | 0.5993 | -0.014 | 0.5700 | -0.042 | 0.0933 |
| cbcl\_scr\_dsm5\_anxdisord | -0.006 | 0.8024 | 0.002 | 0.9217 | -0.010 | 0.6722 | 0.021 | 0.3936 | -0.001 | 0.9603 | -0.016 | 0.5297 |
| cbcl\_scr\_dsm5\_somaticpr | -0.008 | 0.7540 | 0.030 | 0.2319 | -0.027 | 0.2780 | 0.001 | 0.9620 | 0.027 | 0.2705 | -0.002 | 0.9301 |
| cbcl\_scr\_dsm5\_adhd | 0.001 | 0.9818 | -0.012 | 0.6327 | -0.042 | 0.0858 | -0.031 | 0.2156 | -0.007 | 0.7907 | -0.013 | 0.6131 |
| cbcl\_scr\_07\_stress | -0.021 | 0.4010 | -0.012 | 0.6358 | -0.040 | 0.1018 | -0.016 | 0.5067 | 0.009 | 0.7303 | -0.019 | 0.4375 |

*Note: Significant effects are indicated in bold.*

**Table S5.3. Partial correlation between psychopathological differences and differences in subcortical volume in the Preterm group (Bonferroni corrected, *P* < 0.0014).**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Subcortical volume ( mm^3 )** | **Cerebellum white matter\_L** | | **Cerebellum white matter\_R** | | **Thalamus\_R** | |
| **r value** | **p value** | **r value** | **p value** | **r value** | **p value** |
| cbcl\_scr\_syn\_anxdep | 0.039 | 0.1149 | 0.033 | 0.1885 | 0.067 | 0.0070 |
| cbcl\_scr\_syn\_withdep | 0.038 | 0.1230 | 0.035 | 0.1598 | 0.037 | 0.1295 |
| cbcl\_scr\_syn\_somatic | 0.026 | 0.3013 | 0.012 | 0.6362 | 0.055 | 0.0262 |
| cbcl\_scr\_syn\_social | 0.002 | 0.9512 | -0.013 | 0.6090 | 0.039 | 0.1169 |
| cbcl\_scr\_syn\_attention | 0.025 | 0.3212 | 0.002 | 0.9212 | 0.071 | 0.0042 |
| cbcl\_scr\_syn\_internal | 0.043 | 0.0848 | 0.033 | 0.1821 | 0.068 | 0.0057 |
| cbcl\_scr\_syn\_totprob | 0.016 | 0.5163 | -0.003 | 0.8918 | 0.060 | 0.0144 |
| cbcl\_scr\_dsm5\_depress | 0.025 | 0.3140 | 0.017 | 0.4884 | 0.040 | 0.1087 |
| cbcl\_scr\_dsm5\_anxdisord | 0.045 | 0.0691 | 0.038 | 0.1279 | 0.062 | 0.0126 |
| cbcl\_scr\_dsm5\_somaticpr | 0.015 | 0.5384 | 0.004 | 0.8682 | 0.054 | 0.0303 |
| cbcl\_scr\_dsm5\_adhd | 0.024 | 0.3411 | 0.001 | 0.9613 | 0.078 | 0.0016 |
| cbcl\_scr\_07\_stress | 0.021 | 0.4064 | 0.013 | 0.6043 | 0.053 | 0.0328 |

*Note: Significant effects are indicated in bold.*

**Table S5.4. Partial correlation between psychopathological differences and differences in fiber tract volume in the Preterm group (Bonferroni corrected, *P* < 0.0014).**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Fiber tract volume ( mm^3 )** | **Fornix\_R** | | **Parahippocampal-cingulum\_L** | | **fornix, excluding fimbria\_R** | |
| **r value** | **p value** | **r value** | **p value** | **r value** | **p value** |
| cbcl\_scr\_syn\_anxdep | 0.048 | 0.0581 | 0.064 | 0.0118 | 0.056 | 0.0267 |
| cbcl\_scr\_syn\_withdep | 0.050 | 0.0509 | 0.036 | 0.1545 | 0.038 | 0.1362 |
| cbcl\_scr\_syn\_somatic | 0.035 | 0.1676 | 0.035 | 0.1677 | 0.025 | 0.3198 |
| cbcl\_scr\_syn\_social | 0.042 | 0.0974 | 0.037 | 0.1452 | 0.048 | 0.0599 |
| cbcl\_scr\_syn\_attention | 0.028 | 0.2749 | 0.040 | 0.1164 | 0.036 | 0.1584 |
| cbcl\_scr\_syn\_internal | 0.055 | 0.0315 | 0.059 | 0.0197 | 0.052 | 0.0406 |
| cbcl\_scr\_syn\_totprob | 0.050 | 0.0499 | 0.061 | 0.0167 | 0.052 | 0.0410 |
| cbcl\_scr\_dsm5\_depress | 0.045 | 0.0745 | 0.033 | 0.1918 | 0.029 | 0.2551 |
| cbcl\_scr\_dsm5\_anxdisord | 0.050 | 0.0493 | 0.056 | 0.0260 | 0.058 | 0.0218 |
| cbcl\_scr\_dsm5\_somaticpr | 0.029 | 0.2484 | 0.034 | 0.1831 | 0.023 | 0.3614 |
| cbcl\_scr\_dsm5\_adhd | 0.045 | 0.0789 | 0.054 | 0.0317 | 0.052 | 0.0395 |
| cbcl\_scr\_07\_stress | 0.044 | 0.0796 | 0.053 | 0.0359 | 0.058 | 0.0215 |

*Note: Significant effects are indicated in bold.*

**Table S6.1. Partial correlation between cognitive differences and differences in cortical thickness in the Preterm group (Bonferroni corrected, *P* < 0.0017).**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Cortical thickness ( mm )** | **Medial orbitofrontal\_L** | | **Parahippocampal\_L** | | **Pericalcarine\_L** | | **Lateraloccipital\_R** | | **Medial orbitofrontal\_R** | |
| **r value** | **p value** | **r value** | **p value** | **r value** | **p value** | **r value** | **p value** | **r value** | **p value** |
| nihtbx\_picvocab | 0.005 | 0.8335 | 0.084 | **0.0007** | 0.018 | 0.4758 | -0.004 | 0.8749 | 0.008 | 0.7410 |
| nihtbx\_flanker | -0.002 | 0.9276 | 0.078 | **0.0016** | -0.005 | 0.8480 | -0.015 | 0.5567 | -0.016 | 0.5136 |
| nihtbx\_reading | 0.042 | 0.0897 | 0.079 | **0.0013** | -0.014 | 0.5817 | 0.003 | 0.8902 | 0.022 | 0.3725 |
| nihtbx\_fluidcomp | -0.003 | 0.8880 | 0.084 | **0.0007** | -0.042 | 0.0924 | -0.027 | 0.2786 | -0.023 | 0.3427 |
| nihtbx\_cryst | 0.025 | 0.3116 | 0.098 | **0.0001** | 0.004 | 0.8840 | 0.000 | 0.9960 | 0.019 | 0.4326 |
| nihtbx\_totalcomp | 0.009 | 0.7072 | 0.108 | **< 0.0001** | -0.032 | 0.1967 | -0.021 | 0.4054 | -0.010 | 0.6911 |

*Note: Significant effects are indicated in bold.*

**Table S6.2. Partial correlation between cognitive differences and differences in cortical volume in the Preterm group (Bonferroni corrected, *P* < 0.0014).**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Cortical volume ( mm^3 )** | **Inferior parietal\_L** | | **Postcentral\_L** | | **Inferior parietal\_R** | | **Middle temporal\_R** | | **Supramarginal\_R** | | **Insula\_R** | |
| **r value** | **p value** | **r value** | **p value** | **r value** | **p value** | **r value** | **p value** | **r value** | **p value** | **r value** | **p value** |
| nihtbx\_picvocab | -0.004 | 0.8709 | 0.047 | 0.0592 | -0.002 | 0.9388 | 0.029 | 0.2401 | -0.038 | 0.1234 | -0.021 | 0.3870 |
| nihtbx\_flanker | 0.016 | 0.5090 | 0.001 | 0.9707 | 0.033 | 0.1774 | 0.038 | 0.1280 | -0.041 | 0.0991 | 0.034 | 0.1695 |
| nihtbx\_reading | 0.007 | 0.7796 | 0.025 | 0.3086 | 0.016 | 0.5103 | 0.025 | 0.3176 | 0.012 | 0.6236 | -0.012 | 0.6221 |
| nihtbx\_fluidcomp | 0.006 | 0.8118 | 0.004 | 0.8736 | 0.016 | 0.5232 | 0.051 | 0.0380 | -0.017 | 0.4824 | 0.077 | 0.0019 |
| nihtbx\_cryst | 0.001 | 0.9700 | 0.047 | 0.0553 | 0.004 | 0.8564 | 0.031 | 0.2166 | -0.015 | 0.5440 | -0.018 | 0.4655 |
| nihtbx\_totalcomp | 0.004 | 0.8566 | 0.023 | 0.3521 | 0.014 | 0.5729 | 0.053 | 0.0316 | -0.021 | 0.4054 | 0.050 | 0.0433 |

*Note: Significant effects are indicated in bold.*

**Table S6.3. Partial correlation between cognitive differences and differences in subcortical volume in the Preterm group (Bonferroni corrected, *P* < 0.0028).**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Subcortical volume ( mm^3 )** | **Cerebellum white matter\_L** | | **Cerebellum white matter\_R** | | **Thalamus\_R** | |
| **r value** | **p value** | **r value** | **p value** | **r value** | **p value** |
| nihtbx\_picvocab | 0.012 | 0.6174 | 0.009 | 0.7157 | 0.053 | 0.0337 |
| nihtbx\_flanker | 0.007 | 0.7656 | -0.014 | 0.5732 | 0.013 | 0.5986 |
| nihtbx\_reading | 0.011 | 0.6681 | 0.010 | 0.6953 | 0.020 | 0.4179 |
| nihtbx\_fluidcomp | -0.021 | 0.3887 | -0.024 | 0.3418 | 0.039 | 0.1125 |
| nihtbx\_cryst | 0.009 | 0.7127 | 0.007 | 0.7624 | 0.045 | 0.0677 |
| nihtbx\_totalcomp | -0.011 | 0.6634 | -0.014 | 0.5790 | 0.051 | 0.0381 |

*Note: Significant effects are indicated in bold.*

**Table S6.4. Partial correlation between cognitive differences and differences in fiber tract volume in the Preterm group (Bonferroni corrected, *P* < 0.0028).**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Fiber tract volume ( mm^3 )** | **Fornix\_R** | | **Parahippocampal-cingulum\_L** | | **fornix, excluding fimbria\_R** | |
| **r value** | **p value** | **r value** | **p value** | **r value** | **p value** |
| nihtbx\_picvocab | 0.088 | **0.0005** | 0.059 | 0.0195 | 0.069 | 0.0068 |
| nihtbx\_flanker | 0.028 | 0.2665 | -0.008 | 0.7554 | 0.025 | 0.3154 |
| nihtbx\_reading | 0.049 | 0.0529 | 0.025 | 0.3152 | 0.033 | 0.1962 |
| nihtbx\_fluidcomp | 0.034 | 0.1829 | -0.007 | 0.7954 | 0.039 | 0.1201 |
| nihtbx\_cryst | 0.083 | **0.0011** | 0.051 | 0.0441 | 0.060 | 0.0175 |
| nihtbx\_totalcomp | 0.064 | 0.0115 | 0.017 | 0.5019 | 0.058 | 0.0224 |

*Note: Significant effects are indicated in bold.*

**Table S7.1. Partial correlation between differences in fiber tract volume and cortical volumes in the Preterm group (Bonferroni corrected, *P* < 0.0002).**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Cortical volume ( mm^3 )** |  | **Fornix\_R** | | **Parahippocampal-cingulum\_L** | | **fornix, excluding fimbria\_R** | |
|  |  | **r value** | **p value** | **r value** | **p value** | **r value** | **p value** |
| Banks of Superior Temporal Sulcus | left hemisphere | 0.028 | 0.2638 | -0.022 | 0.3916 | -0.011 | 0.6605 |
| right hemisphere | 0.036 | 0.1496 | -0.007 | 0.7692 | 0.019 | 0.4582 |
| Caudal anterior cingulate | left hemisphere | 0.040 | 0.1118 | -0.032 | 0.2010 | 0.039 | 0.1189 |
| right hemisphere | 0.041 | 0.1064 | -0.005 | 0.8333 | 0.045 | 0.0706 |
| Caudal middle frontal | left hemisphere | 0.032 | 0.2084 | 0.008 | 0.7512 | 0.051 | 0.0419 |
| right hemisphere | 0.041 | 0.1039 | -0.025 | 0.3120 | 0.063 | 0.0122 |
| Cuneus | left hemisphere | 0.059 | 0.0199 | -0.011 | 0.6752 | 0.077 | 0.0022 |
| right hemisphere | 0.041 | 0.1052 | -0.048 | 0.0538 | 0.062 | 0.0130 |
| Entorhinal | left hemisphere | 0.061 | 0.0154 | 0.049 | 0.0502 | 0.029 | 0.2547 |
| right hemisphere | 0.045 | 0.0739 | -0.015 | 0.5488 | -0.011 | 0.6637 |
| Fusiform | left hemisphere | 0.090 | 0.0003 | -0.090 | 0.0003 | 0.055 | 0.0289 |
| right hemisphere | 0.064 | 0.0111 | -0.088 | 0.0004 | 0.042 | 0.0943 |
| Inferior parietal | left hemisphere | 0.070 | 0.0056 | -0.068 | 0.0069 | 0.056 | 0.0271 |
| right hemisphere | 0.114 | **< 0.0001** | -0.059 | 0.0196 | 0.098 | **0.0001** |
| Inferior temporal | left hemisphere | 0.083 | 0.0010 | -0.007 | 0.7833 | 0.064 | 0.0107 |
| right hemisphere | 0.073 | 0.0035 | -0.024 | 0.3344 | 0.028 | 0.2653 |
| Isthmus cingulate | left hemisphere | 0.008 | 0.7357 | -0.037 | 0.1455 | -0.001 | 0.9562 |
| right hemisphere | 0.026 | 0.2952 | -0.019 | 0.4503 | 0.056 | 0.0272 |
| Lateral occipital | left hemisphere | 0.064 | 0.0115 | -0.052 | 0.0400 | 0.090 | 0.0004 |
| right hemisphere | 0.025 | 0.3118 | -0.065 | 0.0092 | 0.037 | 0.1366 |
| Lateral orbitofrontal | left hemisphere | 0.004 | 0.8640 | 0.000 | 0.9860 | 0.029 | 0.2541 |
| right hemisphere | 0.015 | 0.5557 | -0.041 | 0.1008 | 0.013 | 0.6142 |
| Lingual | left hemisphere | 0.061 | 0.0147 | -0.009 | 0.7128 | 0.027 | 0.2894 |
| right hemisphere | 0.089 | 0.0004 | 0.002 | 0.9395 | 0.058 | 0.0217 |
| Medial orbitofrontal | left hemisphere | -0.045 | 0.0705 | -0.080 | 0.0015 | -0.031 | 0.2104 |
| right hemisphere | 0.030 | 0.2262 | 0.002 | 0.9316 | 0.018 | 0.4801 |
| Middle temporal | left hemisphere | 0.131 | **< 0.0001** | 0.032 | 0.2084 | 0.091 | 0.0003 |
| right hemisphere | 0.136 | **< 0.0001** | 0.058 | 0.0219 | 0.109 | **< 0.0001** |
| Parahippocampal | left hemisphere | 0.100 | **0.0001** | 0.072 | 0.0044 | 0.074 | 0.0031 |
| right hemisphere | 0.080 | 0.0015 | 0.074 | 0.0031 | 0.033 | 0.1858 |
| Paracentral | left hemisphere | 0.072 | 0.0039 | 0.004 | 0.8659 | 0.081 | 0.0013 |
| right hemisphere | 0.005 | 0.8311 | -0.021 | 0.3928 | -0.009 | 0.7251 |
| Pars opercularis | left hemisphere | 0.055 | 0.0286 | -0.025 | 0.3210 | 0.058 | 0.0212 |
| right hemisphere | 0.015 | 0.5467 | -0.020 | 0.4334 | 0.026 | 0.3088 |
| Pars orbitalis | left hemisphere | -0.010 | 0.6840 | -0.011 | 0.6723 | 0.008 | 0.7382 |
| right hemisphere | 0.024 | 0.3497 | -0.024 | 0.3314 | 0.009 | 0.7157 |
| Pars triangularis | left hemisphere | 0.064 | 0.0115 | 0.022 | 0.3825 | 0.081 | 0.0013 |
| right hemisphere | 0.059 | 0.0188 | 0.024 | 0.3401 | 0.092 | 0.0002 |
| Pericalcarine | left hemisphere | 0.077 | 0.0022 | -0.013 | 0.6182 | 0.085 | 0.0007 |
| right hemisphere | 0.081 | 0.0012 | -0.020 | 0.4346 | 0.090 | 0.0004 |
| Postcentral | left hemisphere | 0.109 | **< 0.0001** | -0.032 | 0.2070 | 0.087 | 0.0005 |
| right hemisphere | 0.077 | 0.0023 | -0.082 | 0.0011 | 0.065 | 0.0095 |
| Posterior cingulate | left hemisphere | 0.044 | 0.0794 | -0.066 | 0.0082 | 0.051 | 0.0433 |
| right hemisphere | 0.055 | 0.0301 | -0.039 | 0.1241 | 0.053 | 0.0346 |
| Precentral | left hemisphere | 0.052 | 0.0372 | -0.015 | 0.5636 | 0.068 | 0.0070 |
| right hemisphere | 0.057 | 0.0223 | -0.055 | 0.0279 | 0.072 | 0.0040 |
| Precuneus | left hemisphere | 0.053 | 0.0366 | -0.033 | 0.1931 | 0.063 | 0.0126 |
| right hemisphere | 0.039 | 0.1171 | -0.050 | 0.0460 | 0.047 | 0.0637 |
| Rostral anterior cingulate | left hemisphere | 0.002 | 0.9336 | -0.046 | 0.0692 | 0.001 | 0.9725 |
| right hemisphere | 0.020 | 0.4320 | -0.008 | 0.7548 | 0.034 | 0.1748 |
| Rostral middle frontal | left hemisphere | 0.088 | 0.0005 | 0.009 | 0.7194 | 0.111 | **< 0.0001** |
| right hemisphere | 0.036 | 0.1555 | 0.021 | 0.4047 | 0.056 | 0.0260 |
| Superior frontal | left hemisphere | 0.095 | 0.0002 | -0.001 | 0.9736 | 0.134 | **< 0.0001** |
| right hemisphere | 0.088 | 0.0005 | -0.018 | 0.4745 | 0.119 | **< 0.0001** |
| Superior parietal | left hemisphere | 0.052 | 0.0387 | -0.048 | 0.0540 | 0.061 | 0.0154 |
| right hemisphere | 0.077 | 0.0023 | -0.036 | 0.1575 | 0.088 | 0.0005 |
| Superior temporal | left hemisphere | 0.036 | 0.1552 | -0.004 | 0.8748 | 0.046 | 0.0659 |
| right hemisphere | 0.074 | 0.0034 | -0.010 | 0.6803 | 0.072 | 0.0039 |
| Supramarginal | left hemisphere | 0.070 | 0.0054 | 0.005 | 0.8435 | 0.058 | 0.0207 |
| right hemisphere | 0.051 | 0.0435 | 0.040 | 0.1153 | 0.058 | 0.0201 |
| Frontalpole | left hemisphere | -0.022 | 0.3723 | -0.045 | 0.0737 | -0.027 | 0.2803 |
| right hemisphere | -0.044 | 0.0802 | -0.051 | 0.0431 | -0.056 | 0.0248 |
| Temporalpole | left hemisphere | 0.041 | 0.1070 | -0.005 | 0.8276 | 0.035 | 0.1677 |
| right hemisphere | 0.026 | 0.3048 | 0.040 | 0.1159 | -0.008 | 0.7558 |
| Transverse temporal | left hemisphere | 0.007 | 0.7789 | 0.011 | 0.6513 | 0.021 | 0.3938 |
| right hemisphere | -0.010 | 0.6807 | -0.013 | 0.5920 | 0.014 | 0.5704 |
| Insula | left hemisphere | 0.044 | 0.0768 | 0.021 | 0.3968 | 0.075 | 0.0027 |
| right hemisphere | 0.038 | 0.1268 | 0.022 | 0.3743 | 0.091 | 0.0003 |

*Note: Significant effects are indicated in bold.*

**Table S7.2. Partial correlation between differences in fiber tract volume and subcortical volumes in the Preterm group (Bonferroni corrected, *P* < 0.0008).**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Subcortical volume ( mm^3 )** |  | **Fornix\_R** | | **Parahippocampal-cingulum\_L** | | **fornix, excluding fimbria\_R** | |
|  |  | **r value** | **p value** | **r value** | **p value** | **r value** | **p value** |
| Cerebral white matter | left hemisphere | 0.440 | **< 0.0001** | 0.186 | **< 0.0001** | 0.469 | **< 0.0001** |
| right hemisphere | 0.449 | **< 0.0001** | 0.196 | **< 0.0001** | 0.473 | **< 0.0001** |
| Cerebellum white matter | left hemisphere | 0.169 | **< 0.0001** | 0.186 | **< 0.0001** | 0.142 | **< 0.0001** |
| right hemisphere | 0.176 | **< 0.0001** | 0.216 | **< 0.0001** | 0.158 | **< 0.0001** |
| Cerebellum cortex | left hemisphere | 0.158 | **< 0.0001** | 0.163 | **< 0.0001** | 0.131 | **< 0.0001** |
| right hemisphere | 0.147 | **< 0.0001** | 0.159 | **< 0.0001** | 0.130 | **< 0.0001** |
| Thalamus proper | left hemisphere | 0.430 | **< 0.0001** | 0.262 | **< 0.0001** | 0.383 | **< 0.0001** |
| right hemisphere | 0.450 | **< 0.0001** | 0.230 | **< 0.0001** | 0.455 | **< 0.0001** |
| Caudate | left hemisphere | 0.011 | 0.6745 | 0.134 | **< 0.0001** | -0.009 | 0.7140 |
| right hemisphere | -0.040 | 0.1139 | 0.124 | **< 0.0001** | -0.076 | 0.0024 |
| Putamen | left hemisphere | 0.222 | **< 0.0001** | 0.087 | 0.0006 | 0.245 | **< 0.0001** |
| right hemisphere | 0.262 | **< 0.0001** | 0.076 | 0.0025 | 0.266 | **< 0.0001** |
| Pallidum | left hemisphere | 0.189 | **< 0.0001** | 0.064 | 0.0105 | 0.147 | **< 0.0001** |
| right hemisphere | 0.309 | **< 0.0001** | 0.144 | **< 0.0001** | 0.311 | **< 0.0001** |
| Hippocampus | left hemisphere | 0.249 | **< 0.0001** | 0.293 | **< 0.0001** | 0.226 | **< 0.0001** |
| right hemisphere | 0.350 | **< 0.0001** | 0.287 | **< 0.0001** | 0.345 | **< 0.0001** |
| Amygdala | left hemisphere | 0.202 | **< 0.0001** | 0.214 | **< 0.0001** | 0.186 | **< 0.0001** |
| right hemisphere | 0.203 | **< 0.0001** | 0.156 | **< 0.0001** | 0.171 | **< 0.0001** |
| Accumbens area | left hemisphere | 0.146 | **< 0.0001** | 0.094 | **0.0002** | 0.124 | **< 0.0001** |
| right hemisphere | 0.155 | **< 0.0001** | 0.015 | 0.5554 | 0.147 | **< 0.0001** |
| Ventraldc | left hemisphere | 0.382 | **< 0.0001** | 0.218 | **< 0.0001** | 0.344 | **< 0.0001** |
| right hemisphere | 0.360 | **< 0.0001** | 0.236 | **< 0.0001** | 0.318 | **< 0.0001** |

*Note: Significant effects are indicated in bold.*

**F****igure S1.** Flow diagram of study participants.

**Abbreviations:** ABCD, Adolescent Brain and Cognitive Development; TBI, traumatic brain injury; BMI, body mass index; ICV, intracranial volume.

a Some participants were missing more than one variable.

b Control group were randomly sampled by the matching procedure.