**Other Supplementary Material**

**Supplement S1.** Whole-brain activations during cognitive and affective ToM processing in the total sample, controlling depressive symptoms, anxiety, and childhood trauma (one-sample *t* tests)

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Location | | |  |  |  |  |  | MNI coordinates  Cluster peak | | |
| Areas | Hemisphere | Brodmann area |  | Cluster size | *p* FWE-corr | *t* value |  | x | y | z |
| ***Cognitive ToM > PC*** | | | | | | | | | | |
| Precuneus, posterior cingulate | L | 5, 23 |  | 15 213 | < .001 | 13.55 |  | -6 | -50 | 46 |
| Parahippocampal gyrus | L | 30, 37 |  | 1 468 | < .001 | 10.79 |  | -26 | -44 | -8 |
| MTG, Temporal poles | R | 21, 22 |  | 1 224 | < .001 | 10.75 |  | 54 | 0 | -22 |
| Cerebellum | L | - |  | 914 | .001 | 6.50 |  | -6 | -52 | -44 |
| ***Cognitive ToM < PC*** | | | | | | | | | | |
| Supramarginal gyrus | R | 2, 40 |  | 2 940 | < .001 | 9.62 |  | 54 | -30 | 46 |
| MFG | R | 45 |  | 1 927 | < .001 | 9.16 |  | 46 | 42 | 6 |
| IFG triangularis | L | 45, 47 |  | 1 894 | < .001 | 8.39 |  | -44 | 38 | 8 |
| IPG | L | 40 |  | 1 453 | < .001 | 8.15 |  | -58 | -34 | 46 |
| IFG opercularis | R | 44, 48 |  | 1 029 | .001 | 7.97 |  | 48 | 8 | 20 |
| IFG opercularis | L | 44, 48 |  | 1 070 | < .001 | 6.88 |  | -46 | 10 | 14 |
| SFG, anterior cingulate | R | 8, 32 |  | 1 177 | < .001 | 5.94 |  | 6 | 26 | 42 |
| Lingual | L | 17 |  | 2 399 | < .001 | 5.78 |  | 0 | -82 | 2 |

**Supplement S1 (continued).** Whole-brain activations during cognitive and affective ToM processing in the total sample, controlling depressive symptoms, anxiety, and childhood trauma (one-sample *t* tests)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Location | | |  |  |  |  |  | MNI coordinates  Cluster peak | | |
| Areas | Hemisphere | Brodmann area |  | Cluster size | *p* FWE-corr | *t* value |  | x | y | z |
| ***Affective ToM > PC*** |  |  |  |  |  |  |  |  |  |  |
| Precuneus, posterior cingulate | R | 23, 30 |  | 10 139 | < .001 | 13.25 |  | 4 | -52 | 36 |
| STG, MTG | R | 21, 22 |  | 5 787 | < .001 | 10.59 |  | 54 | -48 | 16 |
| Medial SFG, anterior cingulate | R | 10, 32 |  | 3 554 | < .001 | 9.43 |  | 10 | 56 | 16 |
| ***Affective ToM < PC*** | | | | | | | | | | |
| Calcarine | R | 17, 18 |  | 16 546 | < .001 | 14.79 |  | 18 | -92 | 0 |
| IFG opercularis | L | 44, 48 |  | 2 741 | < .001 | 9.59 |  | -44 | 6 | 26 |
| SFG | R | 8, 9 |  | 958 | .002 | 8.46 |  | 30 | 16 | 56 |
| IFG opercularis | R | 44, 48 |  | 897 | .003 | 7.90 |  | 48 | 8 | 20 |
| MFG, Premotor | L | 6, 8 |  | 738 | .007 | 7.31 |  | -26 | 12 | 56 |
| MFG | R | 45, 46 |  | 1 392 | < .001 | 7.28 |  | 46 | 40 | 10 |
| Medial SFG, anterior cingulate | R | 32 |  | 536 | .022 | 7.21 |  | 6 | 30 | 40 |
| ToM, Theory of Mind; PC, Physical Causality; MTG, Middle Temporal Gyrus; MFG, Middle Frontal Gyrus; IFG, Inferior Frontal Gyrus; IPG, Inferior Parietal Gyrus; SFG, Superior Frontal Gyrus; L = Left; R = Right.  *p* FWE-corr = cluster-forming threshold for family wise error. *p* < .001 voxel-wise threshold. | | | | | | | | | | |

**Supplement S2**. Spearman correlation coefficients between task-based first eigenvariates at cluster-level, family history density, sociodemographic and clinical variables, and task performance in the FH+ group.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | FHD | Age | Education level | NART  total IQ | AUDIT  total score | TAS-20  total score | Cognitive ToM (%) | Affective ToM (%) |
| First eigenvariate for the C2 cluster with covariates | .235 | .029 | -.075 | .144 | -.137 | .032 | .167 | -.250 |
| FH+, Positive Family History; FHD, Family History Density of alcohol use disorders; NART, National Adult Reading Test; AUDIT, Alcohol Use Disorder Identification Test; TAS-20, 20-item Toronto Alexithymia Scale; ToM, Theory of Mind; C2, Cluster 2 comprising parts of the left insula and the inferior frontal cortex.  *Notes:*First eigenvariates were extracted for the cluster comprising the left insula and inferior frontal cortex remained significant after controlling for depressive symptoms, anxiety, and childhood trauma in the two-sample *t* tests. Given that depressive symptoms, anxiety, and childhood trauma were included as covariates at the second level, they were no longer significantly associated with the first eigenvariates and were hence not included in the correlation matrices. Correlations with FHD scores were not computed for the FH- group given that theses participants all had FHD scores equal to zero. Significant correlations at *p* < 0.05 after Bonferroni correction are highlighted in bold. | | | | | | | | |