# SUPPLEMENTARY INFORMATION

# General and Specific Factors of Environmental Stress and Their Associations With Brain Structure and Dimensions of Psychopathology

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**Accounting for dependencies and weighting**

*Dependencies in families and sites.* The ABCD Study involves complex survey data with known dependencies. For example, this study includes multiple children from the same family including siblings and multiple births (i.e., twins, triplets). Additionally, since the ABCD Study sample was collected at 21 sites across the U.S., families are nested within site. To address relatedness and nesting among the participants, we cluster by family ID using the CLUST command and stratify by site using the STRAT command in Mplus. These approaches are recommended for the analysis of complex survey data in the SEM framework in Mplus (1). All effects of interest in the current study were estimated using this approach.

*Weighting by post-stratification weights.* The ABCD Study participant recruitment process is detailed in Garavan et al., (2018) (2). In brief, 21 sites across the United States collected data for the ABCD Study, each with independent catchment areas. Eligible children within each catchment area were recruited through probability sampling of schools. Sampling recruitment took into account sociodemographic factors including age, gender, race/ethnicity, socioeconomic status, and urbanicity taken from the U.S. Census Bureau American Community Survey (ACS) and the National Center for Education Statistics' school enrollment data. Notably, while this sampling procedure attempted to be unbiased, the ABCD Study sites are not a perfect representation of the U.S. population. Thus, the ABCD Study analytics group calculated and provided post-stratification weights to adjust the sample to be more representative of the U.S. population.

*Non-participation weights.* Our previous work (3) with the ABCD Study data has shown that those who are excluded for poor imaging data and/or missing data significantly differ from the rest of the sample on key demographics. In particular, the included sample has been shown to have a higher proportion of females, a lower proportion of racial/ethnic minority status individuals, higher income, more parental education, and to be older in age (3). To account for the non-random nature of the exclusions, we calculate and apply non-participation weights to account for these differences in the final sample. Specifically, we adjust for differences between the included and excluded groups in terms of age, sex, race/ethnicity, socioeconomic status measured with parental education, and mean level of psychopathology measured with the Child Behavior Checklist (CBCL). These non-participation weights were combined with the post-stratification weights described above and applied to all analyses in the current study.

*Accounting for differences between scanners.* The ABCD Study imaging data was collected using 3 tesla (3T) scanners from three vendors: Siemens, General Electric, and Phillips. Within these three vendors, five different scanner models were used: General Electric Discovery MR750, Siemens Prisma, Siemens Prisma Fit, Phillips Achieva dStream, and Phillips Ingenia. To account for differences between scanners, we include scanner model as a covariate in all analyses.

## Items Selection and Adjustment

Items related to environmental stressors from the ABCD Study were included for an exploratory structural equation modeling (ESEM) analysis to delineate underlying factors. When the same measure was administered to both parents and children, parental responses were selected due to the participants' young age in this sample. Item selection was based on prior theories of child development; in particular, we focused on Urie Bronfenbrenner's ecological systems theory (4). Bronfenbrenner posited that child development occurs within a complex, multi-level system of influences that span from the immediate family/school environments to the broadest influences of cultural values, customs, and laws. As our starting point, we canvassed the ABCD Study data for any variables that may impact the child's environment at any of these levels. From this large pool of potential measures, we eliminated measures where that were not administered to most participants. Next, we went through a process of item selection to remove low endorsed or redundant items. Specifically, items were excluded if they: 1) had responses completed by only by a subset of participants; 2) had responses with low endorsement rates (< .5%); and/or 3) it was not possible to estimate polychoric correlations with other items (i.e., the contingency tables with other items contained a cell with 0). For polytomous items, response categories with low endorsement (< .5%) were combined with the nearest response category to preserve items. Continuous items with high skewness were log-transformed and items with negative skewness were reverse scored before applying a log-transformation. Outliers were removed based on Rosner's test (5). Continuous items which were not skewed but had measurement scales that resulted in very large values for variance were adjusted (e.g., dividing by 100). When items had high correlations with each other ($r > .90$) suggesting the items are redundant, the items were either combined or only one item was retained if it did not make conceptual sense to combine the items. An item cluster analysis (ICLUST) (6) was performed to identify "doublets" (i.e., two items clustering together, suggesting they are redundant). Any pair of items identified as a doublet on the first pass of ICLUST with scores ≥ .85 was combined or one item was selected. For binary items, responses were collapsed. For ordinal and continuous items that could not be collapsed, one item was chosen based on greater variability in the responses obtained. After item selection and adjustment, 107 variables were included in the exploratory ESEM. Descriptions of the measures are presented below and descriptions of selected items that went into the exploratory analysis are presented in Table S1.

**Environmental Stress Self-Report Measure Descriptions**

*Diagnostic Interview for DSM-5 (KSADS) Traumatic Events*. Occurrences of traumatic events during the child's lifetime were measured using the posttraumatic stress disorder criterion A traumatic events checklist from the Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS) (7). Primary caregivers responded to 17 items indicating the occurrence of traumatic events in children (e.g., "Beaten to the point of having bruises by a grown up in the home") based on a binary response (1 = True, 0 = False).

*Family Environment Scale – Family Conflict Subscale.* Family conflict was measured by the Family Conflict Subscale from the Moos Family Environment Scale (8), which was modified from the PhenX toolkit (https://phenx.org) (9). Primary caregivers responded to 9 items assessing the presence of conflict within the family (e.g., "We fight a lot in our family") based on a binary response (1 = True, 0 = False). Four items were reverse coded (e.g., "Family members rarely become openly angry"), so that the higher scores (i.e., 1 = False) indicate the presence of conflict.

*Demographics Survey – Family Experience.* Financial difficulty experienced by the immediate family was assessed. Primary caregivers responded to 7 items inquiring about instances of financial difficulty in the past 12 months (e.g., "Needed food but couldn't afford to buy it or couldn't afford to go out to get it") based on a binary response (1 = Yes, 0 = No). Additionally, primary caregivers reported the number of people living at their address.

*Family History Assessment.* Family history of mental illness was assessed. Primary caregivers responded to the history of mental illness in any blood relative (e.g., biological father, biological mother, paternal/maternal grandfather, paternal/maternal grandmother, paternal/maternal uncle, paternal/maternal aunt, younger/older full sibling, younger/older half sibling, or same age full sibling) of their child based on a binary response (1 = Yes, 0 = No). Items assessed for blood relatives with any of the following: a history of receiving psychiatric services or hospitalization, attempted or committed suicide, depression, mania, psychosis, nervous breakdowns, antisocial behaviors, and problems related to alcohol or drug use.

*Child Report of Parental Behavioral Inventory (short form).* Youth's perceptions of the caregiver's warmth, acceptance, and responsiveness were assessed. Youths responded to 5 items shortened from the original 10 items from the Child Report of Parental Behavioral Inventory (9,10). Youths responded to items describing the primary caregiver's behavior as warm or supportive (e.g., "First caregiver makes me feel better after talking over my worries with him/her") based on a three-point Likert scale (1 = "Not like him/her", 2 = "Somewhat like him/her", 3 = "A lot like him/her").

*Parent Diagnostic Interview for DSM-5 Background Items (KSADS-5).* 17 items assessing the child's relationship with his/her caregiver, peer relationships, school performance, and placement in any special services were selected from the Diagnostic Interview for DSM-5 Background Items (K-SADS-5). The full list of items from the measure and possible responses can be found in Table S1.

*School Risk and Protective Factors Survey.* Youth's connectedness to his or her school was assessed by items derived from the School Social Environment section in the PhenX Toolkit (9). Items assessed the youth's interaction with their school teacher (e.g., "I get along with my teachers"), perception of the classroom environment (e.g., "I feel safe at my school"), involvement in school (e.g., "I like school because I do well in class"), and feelings of alienation from academic goals (e.g., "Usually, school bores me"), based on four-point Likert scale (1 =

"NO!" (it is definitely not true), 2 = "no" (it is mostly not true), 3 = "yes" (it is mostly true), 4 = "YES!" (it is definitely true)).

*Peer Relationship.* Peer relationships were measured by assessing the number of friends and close friends that the child has. Both male and female friends were assessed separately. The responses ranged from 0 to 100. To correct for skewness in distribution, high numbers were excluded as outliers based on Rosner's test. The exclusion criteria for each item are presented in Table S1.

*Neighborhood Safety/Crime Survey.* Youth's and parent's perceptions of neighborhood safety from crime was assessed by the Safety from Crime items from the PhenX Toolkit (9,11,12). Caregivers responded to 3 items assessing their perceptions on safety and presence of crime in their neighborhoods (e.g., "My neighborhood is safe from crime"), based on a five-point Likert scale (1 = "Strongly Disagree", 2 = "Disagree", 3 = "Neutral", 4 = "Agree", 5 = "Strongly Agree"). Youths responded to one item related to their perception of the crime in their neighborhoods ("My neighborhood is safe from crime").

*Community Risk and Protective Factors.* Availability of substances in the community was assessed by 9 items from the PhenX Community Risk and Protective Factors questionnaire (13), based on the Monitoring the Future Study (14). Caregivers responded to items assessing how easily their child may access substances including alcohol, cigarettes, marijuana, and other drugs (e.g., "If your child wanted to get some beer, wine, or hard liquor, how easy would it be for her/him to get some?"), based on a four-point Likert scale (0 = "Very hard", 1 = "Sort of hard", 2 = "Sort of easy", 3 = "Very easy"). Items 7 to 9, which assess accessibility for medical marijuana, were excluded because they were prompted by Item 6 ("Is "medical marijuana" legal in your state?"), which means not everyone had data for these follow up items.

*Parental Monitoring Survey.* Parental monitoring indicating the parent's active effort to keep track of their child's whereabouts was assessed based on youth self-report (9). Five items assessed parental monitoring of the child's location, whom the child spends time with, parental monitoring via family dinner frequency, parent/child contact, and the child's disclosure to the parent based on a five-point Likert scale (1 = "Never", 2 = "Almost never", 3 = "Sometimes", 4 = "Often", 5 = "Always or almost always").

**Residential History Derived Scores Descriptions**

Data related to participants' residential environment were retrieved from the digital archives of the federal government or other publicly available data repositories based on geocodes of participants' addresses. The ABCD Study data repository includes data pertaining to participants' current and previous addresses. For the current study, data from participants' current addresses were used. When data from participants' current primary, secondary, and tertiary addresses were available, data were averaged across multiple current addresses. Description of residential history derived scores from the ABCD Study can be found in http://dx.doi.org/10.15154/1519007 ("12. NDA 3.0 Other Non-Imaging Instruments").

*Years of residence.* The number of years lived at the current address was assessed.

*Elevation.* The level of elevation, which is associated with greater exposure to air pollution due to the greater inhalation of carbon monoxide at reduced oxygen concentrations (EPA, 1978), was retrieved from the Google maps.

*Walkability.* Walkability index scores were obtained from the EPA (https://www.epa.gov/smartgrowth/smart-location-mapping#walkability). These scores reflect the rank of each block relative to all other blocks in the United States. Walkability scores are influenced by the presence or absence and quality of sidewalks, pedestrian right-of-ways, traffic density, road conditions, building accessibility, etc. The resolution was at the census tract level.

*Crime rate.* Uniform crime reports were obtained from the Federal Bureau of Investigation, which was compiled by Inter-University Consortium for Political and Social Research. The grand total variable from the ABCD repository includes the total number of arrests for Part I offenses (i.e., murder, rape, robbery, aggravated assault, burglary, larceny, auto theft, and arson) and Part II offenses (i.e., forgery, fraud, embezzlement, vandalism, weapon violations, sex offenses, drug and alcohol abuse violations, gambling, vagrancy, curfew violations, and runaways), based on three-year average estimates from 2010 to 2012. The resolution was based on the county-level.

*Area Deprivation Index.* The Area Deprivation Index (ADI) was calculated based on the Singh method (15,16) using data from the American Community Survey from 2011 to 2015. The ADI has 17 sub-scores and 1 national percentile score based on sub-scores ranging from 1 to 100, with the $100^{th}$ percentile reflecting the most deprivation. The 17 sub-scores are: percentage of population aged 25 years or older with less than 9 years of education; percentage of population aged 25 years or older with at least a high school diploma; percentage of employed persons aged 16 years or older in white collar occupations; median family income; income disparity defined by the log of 100 × ratio of the number of households with less than $10,000 annual income to the number of houses with $50,000 or more annual income; median home value; median gross rent; median monthly mortgage; percentage of owner-occupied housing units (home ownership rate); percentage of households with more than 1 person per room (crowding); percentage of civilian labor force population aged 16 years or older (unemployment rate); percentage of population below 138% of the poverty threshold; percentage of single-parent households with children younger than 18 years; percentage of households without a motor vehicle; percentage of households without a telephone; percentage of occupied housing units without complete plumbing; and percentage of families below the poverty level. Four sub-scores were excluded from the analysis due to high correlations or forming doublets with other items.

*Population density.* Population density is measured as the number of people per unit of area. Population density was obtained from the National Aeronautics and Space Administration (NASA) Socioeconomic Data and Applications Center (SEDAC) based on the 2010 census tract.

*Pollution measures.* Satellite based pollution measures of fine particles (i.e., PM 2.5) and NO2 levels were obtained from NASA SEDAC based on three-year average estimates from 2010 to 2013, with a resolution at 100 $km^2$. One-year annual average of daily PM 2.5 estimates from 2016 at a higher spatiotemporal resolution (i.e., 1 $km^2$) (Di et al., 2016) were also available for participants' primary, secondary, and tertiary addresses. The average across participants' current addresses was used for the daily PM 2.5 estimates at the higher resolution.

*Estimated risk of lead exposure.* The estimated risk of lead exposure was calculated based on the weighted sum of the age of homes and the rate of poverty (https://www.vox.com/a/lead-exposure-risk-map). The scores ranged from 1 to 10, with a score of 10 indicating the highest risk. The resolution was at the census tract level. The scores were available for participants' primary, secondary, and tertiary addresses. The average across participants' current addresses was used.

*Proximity to road.* The geospatial coordinates of the major roads were retrieved from the North American Atlas as of July 2012. The shortest distance between a major road and the participant's address was obtained (17).

## Psychopathology factors

Psychopathology factors were derived in a prior published study using the Child Behavior Checklist (CBCL) items using the baseline data from the ABCD Study (18). As reported in detail elsewhere, the ABCD Study data was split into two samples for an exploratory SEM analysis to identify which items cluster together and a confirmatory bifactor analysis to define a general factor and specific factors. Items were removed before modeling if they did not reflect symptoms of psychopathology (e.g., constipation), were less age appropriate in 9 to 10-year-olds (e.g., substance use items), showed a lack of sufficient endorsement (ratings above 0), or were redundant with other items, in which case a composite was created. An exploratory SEM analysis in one split half of the sample identified three factors of psychopathology: internalizing problems, attention-deficit/hyperactivity disorder (ADHD) symptoms, and conduct problems. In the second half of the data, a confirmatory bifactor analysis modeled the internalizing, ADHD, and conduct problems factors plus a general psychopathology factor which represents the psychopathology symptoms shared across all participants. Each CBCL item loaded onto the general psychopathology factor, as well as one of the three specific factors; all factors were orthogonal to each other. The calculation of the model as well as the validity and reliability of the psychopathology dimensions in the ABCD Study sample has been published elsewhere (18). In contrast to the adult literature where externalizing symptoms are represented as a single factor (19,20), the dimensions here (internalizing, ADHD, and conduct problems) likely reflect the most relevant symptoms found in 9 to 10-year-olds. As noted previously (18), it was not possible to include a number of CBCL items in the model due to their low endorsements in this young sample (e.g., thought problems, substance use). While these symptoms may be uncommon at this age, they will likely become more prevalent over time, thus the presentation of psychopathology is expected to become more similar to adult models as the sample ages. This also highlights the importance of developing age-appropriate models rather than attempting to apply an adult model to a sample of children.

**Image Acquisition, Processing, and Quality Assurance**

Imaging data was collected across 21 data collection sites following an imaging protocol developed by the ABCD Data Analysis and Informatics Center (DAIC) and the ABCD Imaging Acquisition Workgroup to harmonize collection across multiple 3 tesla (3T) scanner platforms (Siemens Prisma, General Electric (GE) 750, and Phillips) (21). 3D T1-weighted images of whole brain structure were acquired with the following parameters: TR (repetition time) 2400 to 2500 ms; TE (echo time) 2 to 2.9 ms; FOV (field of view) 256 × 240 to 256; FOV phase of 93.75% to 100%; matrix 256 × 256; 176 to 225 slices; TI (inversion delay) 1060 ms; flip angle of 8°; voxel resolution of 1×1×1×mm; total acquisition time was 7 minutes and 12 seconds for Siemens Prisma, 6 minutes and 9 seconds for GE 750, and 5 minutes and 38 seconds for Phillips.

To perform centralized processing and analysis by DAIC, the Multi-Modal Processing Stream was used for imaging data processing and analysis. Preprocessing included correction for gradient nonlinearity distortions, intensity scaling and homogeneity correction, registration to an averaged reference brain in standard space, and manual quality control (QC). Following the preprocessing, cortical surface reconstruction and subcortical segmentation were performed through automated and atlas-based segmentation procedures in FreeSurfer v.5.3. The average cortical thickness and average cortical volume in each cortical parcel of the standard FresSurfer Desikan-Killiany parcellation scheme (Desikan et al., 2006) and the average volume in each subcortical region (Fischl et al., 2002) were calculated. Lastly, post-processing QC was performed by trained technicians for motion, intensity homogeneity, white matter underestimation, pial overestimation, and magnetic susceptibility artifact (see Figure S1).

## Statistical Analyses

*Exploratory Structural Equation Modeling to Identify Underlying Factors*. Exploratory structural equation modeling (ESEM) (22) was performed with 9,000 randomly selected participants to determine whether there exist latent factors underlying the environmental stressors. 1,555 participants were excluded for missing non-participation weights, leaving 7,445 participants for the ESEM analysis. An initial parallel analysis with Glorfeld correction indicated that 4 factors should be extracted (see Table S1 and Figure S2). We then conducted an ESEM with the WLSMV estimator and OBLIMIN rotation with the environmental stress variables. Variables with a loading of $\geq 0.40$ were retained for a confirmatory bifactor analysis.

*Bifactor Modeling of Environmental Stressors*. A confirmatory bifactor analysis with 2,878 hold-out participants was performed to model the four factors identified from the ESEM results, plus a general factor that captures the variance common across all the environmental stressors. 505 participants were missing non-participation weights, leaving 2,373 participants for the bifactor analysis. If a variable loaded onto more than one factor with a loading $\geq 0.40$, then the variable was assigned to the factor with the higher loading. Each item loaded onto one general factor and one specific factor. All factors were specified to be uncorrelated (23).

*Higher-order Modeling of Environmental Stressors.* A confirmatory higher-order analysis with the same hold-out participants ($N = 2,373$) was performed. The four factors identified from the ESEM results and a general factor that captures the variance common across the four factors were defined.

*Environmental Stress Factors Associated with Brain Variables*. Structural equation modeling (SEM) was performed to determine the associations between the general and specific environmental stress factors and measures of brain structure (GMV and cortical thickness). 9,818 participants had non-missing data and passed quality assurance measures. Cortical thickness analyses were performed with 68 cortical structures based on the Desikan-Killiany atlas (24). GMV analyses were performed with 68 cortical structures based on the Desikan-Killiany atlas as well as additional 19 subcortical structures based on the Freesurfer subcortical atlas (25). Regional volumes and cortical thickness were standardized. The demographic factors (i.e., age, sex, and race/ethnicity) were included as covariates. As part of the ABCD study protocol, each child's primary caregiver completed a demographics questionnaire that included information about race/ethnicity. The categories for race were: White, Black, Asian, or Other. The Other category included those who were identified by their parent as American Indian/Native American, Alaska Native, Native Hawaiian, Guamanian, Samoan, Other Pacific Islander, Asian Indian, Chinese, Filipino, Japanese, Korean, Vietnamese, Other Asian, or Other Race. Primary caregivers also answered the question, “Do you consider yourself Hispanic/Latino/Latina?” MRI scanner model was included as a covariate to account for differences between scanners. As a result, the model for testing the association between the environmental stress factors and brain structure was as follows: $\text{brain region}_i = \beta*\text{age} + \beta*\text{sex} + \beta*\text{race/ethnicity} + \beta*\text{MRI scanner model} + \beta*\text{general factor} + \beta*\text{family dynamics} + \beta*\text{interpersonal support} + \beta*\text{neighborhood SES deprivation} + \beta*\text{urbanicity}$, where $i = 1\ldots68$ (i.e., the number of brain regions) for cortical thickness and $i = 1\ldots87$ for GMV analyses. The false discovery rate (FDR; $q < 0.05$) was controlled to account for multiple tests across brain regions.

*Environmental Stress Factors Associated with Psychopathology Factors*. SEM was used to test the association between the environmental stress factors (general environmental stress, family dynamics, interpersonal support, neighborhood SES deprivation, and urbanicity) and the dimensions of psychopathology that have been previously published (general psychopathology,

internalizing symptoms, ADHD symptoms, and conduct problems) (18). A general psychopathology factor, which represents the shared variance across psychopathology symptoms, and specific factors (i.e., internalizing symptoms, ADHD symptoms, and conduct problems) were obtained using a bifactor modeling with the Child Behavior Checklist items based on parental ratings. A more detailed explanation of the bifactor modeling of psychopathology can be found in Moore et al. (18). The model for testing the psychopathology factors predicted by the general and specific factors of stressors was as follows: psychopathology latent factor = β*general factor + β*family dynamics+ β*interpersonal support + β*neighborhood SES deprivation + β*urbanicity. FDR ($q < 0.05$) was controlled to account for multiple tests.

**Results of Sensitivity Analyses**

When controlling for ICV, general environmental stress obtained from bifactor modeling was associated with smaller bilateral parahippocampal gyri, left cuneus, right pericalcarine, right rostral middle frontal gyrus, right superior temporal gyrus, left cerebellum, left accumbens, and right thalamus (Table S10). Neighborhood SES deprivation was associated with smaller GMV in left putamen and right amygdala, consistent with the main finding. Urbanicity was associated with larger GMV in right hippocampus (Table S10). We also conducted a sensitivity analysis controlling for ICV in the higher-order model. The general environmental stress factor from the higher-order model was associated with smaller GMV in bilateral parahippocampal gyri, bilateral rostral middle frontal gyri, left cuneus, left precentral gyrus, right superior temporal gyrus, left cerebellum cortex, left caudate, left putamen, left accumbens, right thalamus, right pallidum, and right amygdala (Table S11). Neighborhood SES deprivation was associated with smaller volumes in the left precentral gyrus, right entorhinal cortex, left cerebellum, left putamen, left accumbens, and right thalamus (Table S11). No significant results were found with other specific factors obtained from higher-order modeling.

In terms of cortical thickness, average cortical thickness was controlled as a global measure. The general environmental stress factor obtained from bifactor modeling was associated with thinner cortices in bilateral lingual gyri, left cuneus, left parahippocampal gyrus, and right pericalcarine (Table S12). Neighborhood SES deprivation was associated with thinner cortices in all regions found in the main analysis, but also thicker cortices in additional regions including bilateral inferior parietal cortices, left fusiform gyrus, left inferior temporal cortex, left isthmus cingulate, left transverse temporal cortex, right middle frontal gyrus, and right rostral anterior cingulate were found (Table S12). Similarly, urbanicity was associated with thicker cortices in the same regions found in the main analysis, while also showing thinner cortices in the bilateral postcentral gyri, bilateral supramarginal gyri, left paracentral gyrus, left precentral gyrus, left pars opercularis, left pars triangularis, right superior temporal cortex, right middle temporal cortex, right inferior temporal cortex, and right precuneus (Table S12).

The general environmental stress factor obtained from higher-order modeling was associated with thinner cortices in the bilateral lingual gyri, bilateral parahippocampal gyri, bilateral paracentral gyri, left cuneus, left precentral gyrus, right pericalcarine, as well as thicker cortices in the bilateral inferior parietal cortices, left entorhinal cortex, and left isthmus cingulate cortex (Table S13). Neighborhood SES deprivation was associated with thinner cortices in the left lingual gyrus, left parahippocampal gyrus, as well as thicker cortices in the bilateral inferior parietal cortices (Table S13). Urbanicity was associated with thicker cortices in the right medial orbitofrontal cortex, right insula, as well as thinner cortices in the left supramarginal gyrus and right precuneus (Table S13).

**References**


1. Muthén, L. K., & Muthén BO (2017): Mplus User's Guide (Eighth ed.). Los Angeles, CA: Muthén & Muthén.
2. Garavan H, Bartsch H, Conway K, Decastro A, Goldstein RZ, Heeringa S, *et al.* (2018): Recruiting the ABCD sample: Design considerations and procedures. *Dev Cogn Neurosci* 32: 16–22.
3. Durham EL, Jeong HJ, Moore TM, Dupont RM, Cardenas-Iniguez C, Cui Z, *et al.* (2021): Association of gray matter volumes with general and specific dimensions of psychopathology in children. *Neuropsychopharmacology* 46: 1333–1339.
4. Bronfenbrenner U (1979): *The Ecology of Human Development: Experiments by Nature and Design*. Cambridge, MA: Harvard University Press.
5. Rosner B (1983): Percentage points for a generalized esd many-outlier procedure. *Technometrics* 25: 165–172.
6. Revelle W (1978): ICLUST: A cluster analytic approach to exploratory and confirmatory scale construction. *Behav Res Methods Instrum* 10: 739–742.
7. Kaufman J, Birmaher B, Brent D, Rao U, Flynn C, Moreci P, *et al.* (1997): Schedule for affective disorders and schizophrenia for school-age children-present and lifetime version (K-SADS-PL): Initial reliability and validity data. *J Am Acad Child Adolesc Psychiatry* 36: 980–988.
8. Moos RH, Moos BS (1994): *Family Environment Scale Manual.* Palo Alto, CA: Consulting Psychologists Press.
9. Zucker RA, Gonzalez R, Feldstein Ewing SW, Paulus MP, Arroyo J, Fuligni A, *et al.* (2018): Assessment of culture and environment in the Adolescent Brain and Cognitive Development Study: Rationale, description of measures, and early data. *Dev Cogn Neurosci* 32: 107–120.
10. Schaefer ES (1965): Children's reports of parental behavior: An inventory. *Child Dev* 36: 413–424.
11. Echeverria SE, Diez-Roux A V., Link BG (2004): Reliability of self-reported neighborhood characteristics. *J Urban Heal* 81: 682–701.
12. Mujahid MS, Diez Roux A V., Morenoff JD, Raghunathan T (2007): Assessing the measurement properties of neighborhood scales: From psychometrics to ecometrics. *Am J Epidemiol* 165: 858–867.
13. Lisdahl KM, Sher KJ, Conway KP, Gonzalez R, Feldstein Ewing SW, Nixon SJ, *et al.* (2018): Adolescent brain cognitive development (ABCD) study: Overview of substance use assessment methods. *Dev Cogn Neurosci* 32: 80–96.
14. Arthur MW, Briney JS, Hawkins JD, Abbott RD, Brooke-Weiss BL, Catalano RF (2007): Measuring risk and protection in communities using the Communities That Care Youth Survey. *Eval Program Plann* 30: 197–211.
15. Kind AJH, Jencks S, Brock J, Yu M, Bartels C, Ehlenbach W, *et al.* (2014): Neighborhood socioeconomic disadvantage and 30-day rehospitalization: A retrospective cohort study. *Ann Intern Med* 161: 765–774.
16. Singh GK (2003): Area Deprivation and Widening Inequalities in US Mortality, 1969-1998. *Am J Public Health* 93: 1137–1143.
17. Fan CC, Marshall A, Smolker H, Gonzalez MR, Tapert SF, Barch DM, *et al.* (2021): Adolescent Brain Cognitive Development (ABCD) study Linked External Data (LED): Protocol and Practices for Geocoding and Assignment of Environment Data. *PsyArXiv*.

18. Moore TM, Kaczkurkin AN, Durham EL, Jeong HJ, McDowell MG, Dupont RM, *et al.* (2020): Criterion Validity and Relationships between Alternative Hierarchical Dimensional Models of General and Specific Psychopathology. *J Abnorm Psychol* 129: 677–688.
19. Caspi A, Moffitt TE (2018): All for one and one for all: Mental disorders in one dimension. *Am J Psychiatry* 175: 831–844.
20. Lahey BB, Applegate B, Hakes JK, Zald DH, Hariri AR, Rathouz PJ (2012): Is There a general factor of prevalent psychopathology during adulthood? *J Abnorm Psychol* 121: 971–977.
21. Casey BJ, Cannonier T, Conley MI, Cohen AO, Barch DM, Heitzeg MM, *et al.* (2018): The Adolescent Brain Cognitive Development (ABCD) study: Imaging acquisition across 21 sites. *Dev Cogn Neurosci* 32: 43–54.
22. Asparouhov T, Muthén B (2009): Exploratory structural equation modeling. *Structural Equation Modeling*, vol. 16.
23. Reise SP (2012): The Rediscovery of Bifactor Measurement Models. *Multivariate Behav Res* 47: 667–696.
24. Desikan RS, Ségonne F, Fischl B, Quinn BT, Dickerson BC, Blacker D, *et al.* (2006): An automated labeling system for subdividing the human cerebral cortex on MRI scans into gyral based regions of interest. *Neuroimage* 31: 968–980.
25. Fischl B, Salat DH, Busa E, Albert M, Dieterich M, Haselgrove C, *et al.* (2002): Whole brain segmentation: Automated labeling of neuroanatomical structures in the human brain. *Neuron* 33: 341–355.

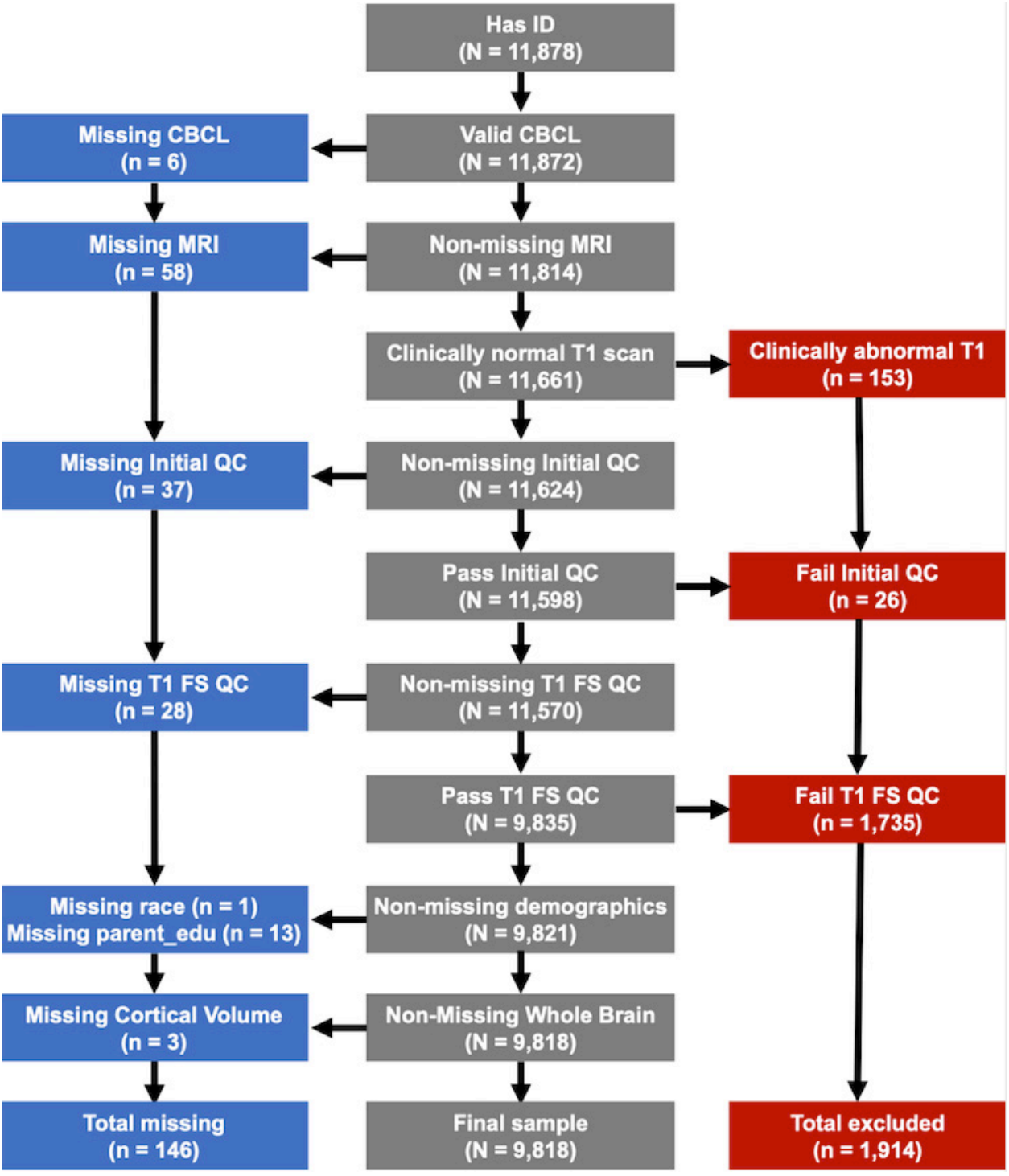


**Figure S1. Flowchart indicating exclusions for analyses with brain structure.** Missing: There were 6 participants excluded for missing CBCL score, 58 for missing a variable indicating the normality/abnormality of the structural MRI images ("mrif_score"), 37 for missing data on an initial quality assurance variable ("iqc_t1_ok_ser"), 28 for missing data on an additional quality

assurance variable (“fsqc_qc”), 1 for missing race-ethnicity data, 13 for missing parent education data, and 3 for missing the cortical volume data. Exclusion: There were 153 participants excluded for abnormal structural images, as indicated by an “mrif_score” value of 0 (“Image artifacts prevent radiology read”) or 4 (“Consider immediate clinical referral”). There were 26 excluded for failing to pass initial quality control (QC) measures, as indicated by an “iqc_t1_ok_ser” value of 0. There were 1,735 excluded for failing to pass quality assurance variables based on FreeSurfer (FS) QC measures. Specifically, for QC score (“fsqc_qc”), responses of 0 (“reject”) were excluded. For motion score (“fsqc_qu_motion”), pial overestimation score (“fsqc_qu_pialover”), white matter underestimation score (“fsqc_qu_wmunder”), and inhomogeneity (fsqc_qu_inhomogeneity), responses of >1 (“mild” to “severe”) were excluded and only responses of 0 (“absent”) were included.

**Figure S2. The scree plot indicates four factors can be extracted from items reflecting environmental stressors.** The number of factors is plotted along the x-axis and the eigenvalues are plotted along the y-axis. A clear "elbow" appears in the plot after four factors.

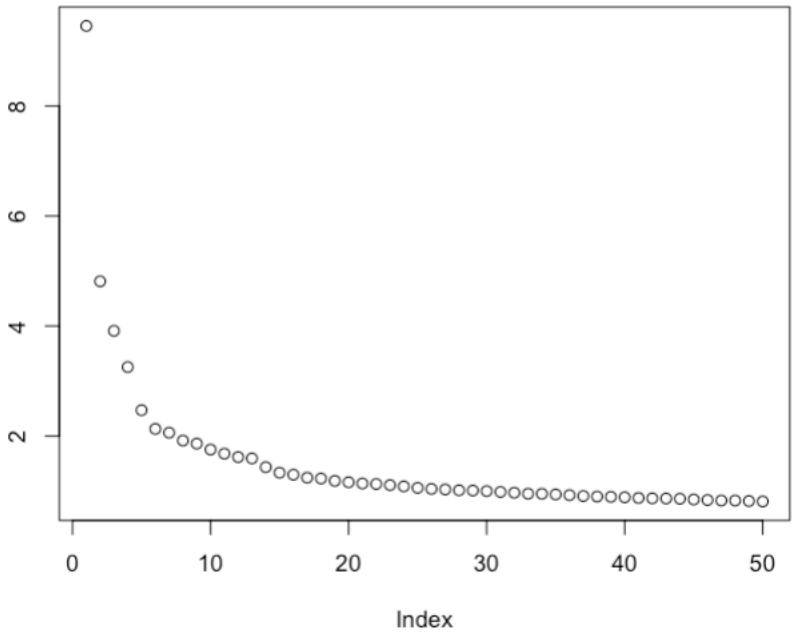

**Figure S3. Regions with significant associations between regional GMV and environmental stress factors obtained from higher-order modeling.** After controlling for age, sex, race/ethnicity, and MRI scanner model, we found that: A) general environmental stress was associated with smaller GMV in almost all regions of the brain (see Table S8 for a complete list); B) family dynamics was associated with smaller GMV in 23 cortical and 12 subcortical regions (see Table S8); C) Neighborhood SES Deprivation was associated with smaller GMV in almost all regions of the brain (see Table S8); and D) Urbanicity was associated with larger GMV in 19 cortical and 8 subcortical regions (see Table S8). All analyses account for multiple testing using the false discovery rate (FDR; $q < 0.05$).

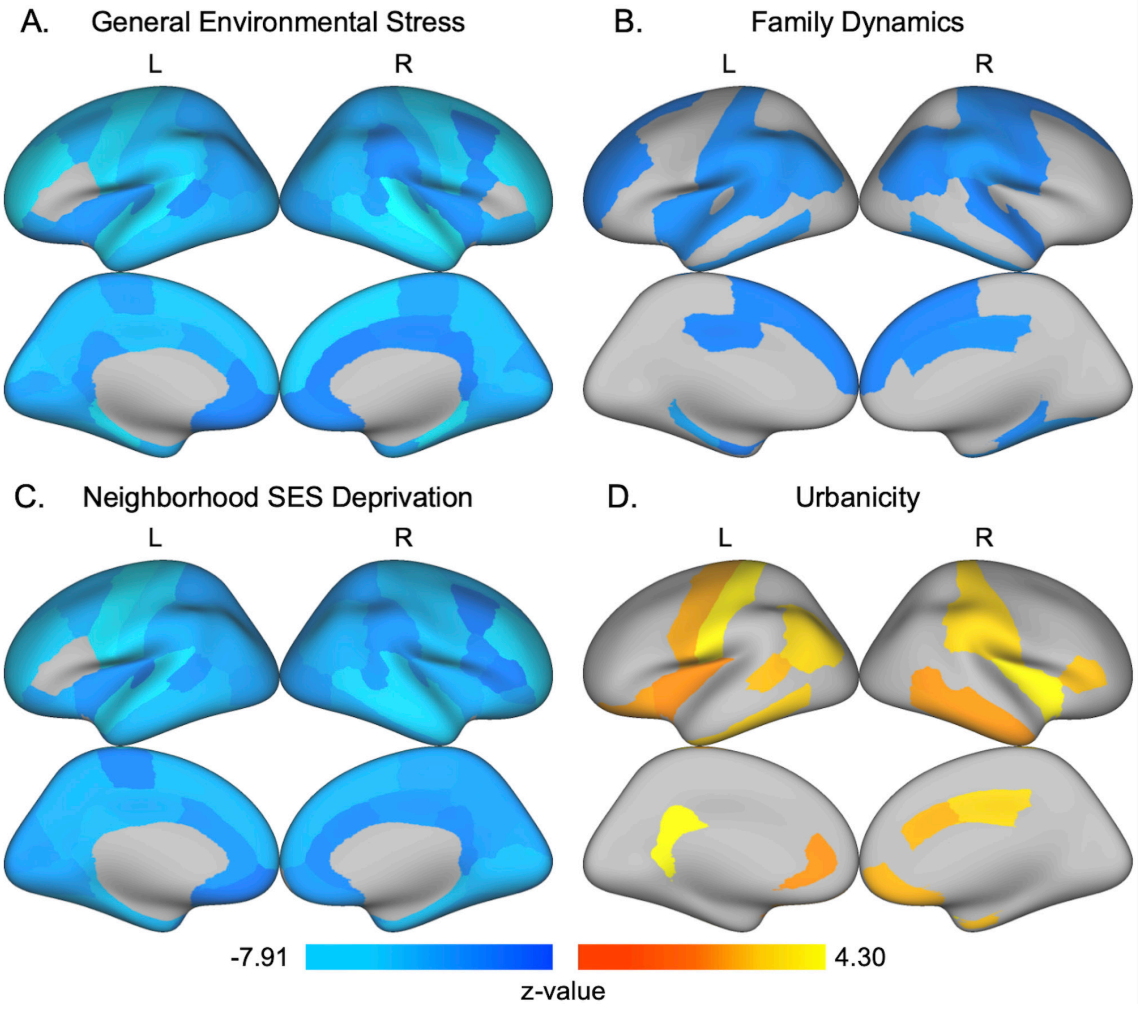

**Figure S4. Regions with significant associations between regional cortical thickness and environmental stress factors obtained from higher-order modeling.** After controlling for age, sex, race/ethnicity, and MRI scanner model, we found that: A) general environmental stress was associated with thinner cortices in 23 cortical regions (see Table S9 for a complete list); B) neighborhood SES deprivation was associated with thinner cortices in 26 regions (see Table S9); and C) Urbanicity was associated with thicker cortices in right medial orbitofrontal cortex and right insula. All analyses account for multiple testing using the false discovery rate (FDR; $q < 0.05$).

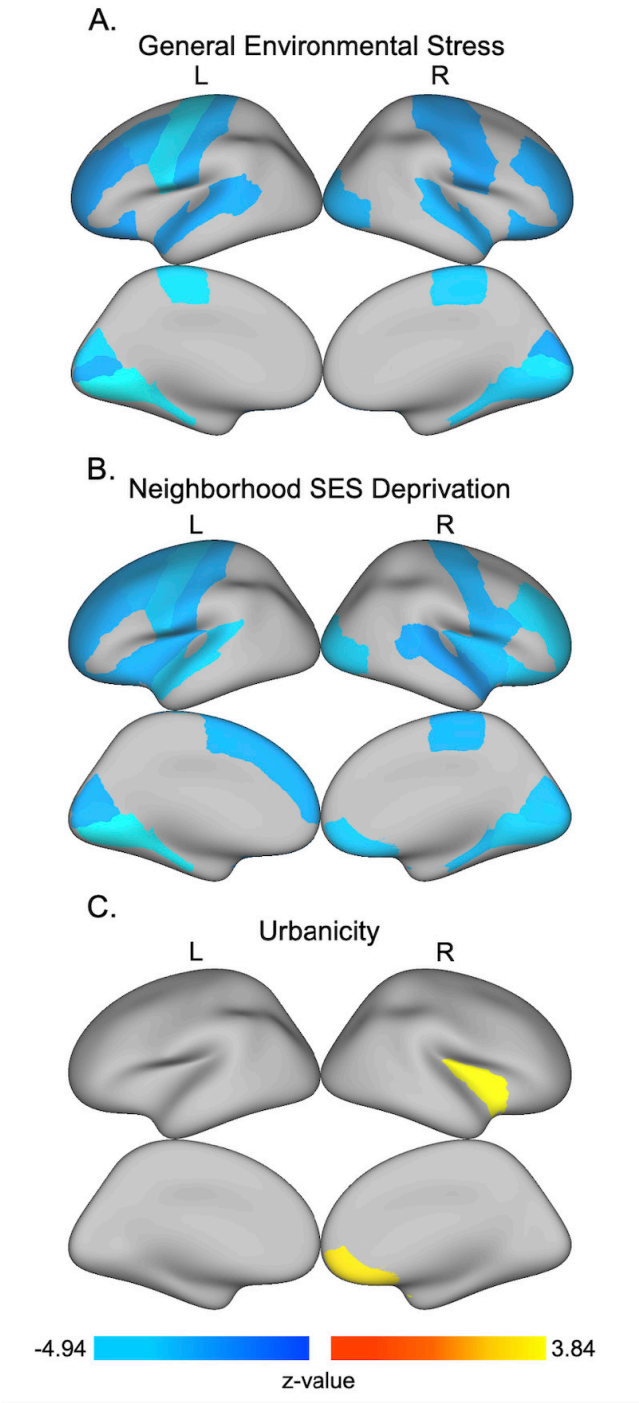

**Table S1.** Description of the environmental stress measures that went into the Exploratory Structural Equation Modeling.

Table S1a. ABCD Parent Diagnostic Interview for DSM-5 (KSADS) Traumatic Events.

| Instrument Name | Variable Names | Question Description | Scoring Guide | Note |
|---|---|---|---|---|
| ABCD Parent Diagnostic Interview for DSM-5 (KSADS) Traumatic Events | ksads754 | A car accident in which your child or another person in the car was hurt bad enough to require medical attention | 0 = No; 1 = Yes | |
| | ksads755 | Another significant accident for which your child needed specialized and intensive medical treatment | 0 = No; 1 = Yes | |
| | ksads756 | Witnessed or caught in a fire that caused significant property damage or personal injury | 0 = No; 1 = Yes | |
| | ksads757 | Witnessed or caught in a natural disaster that caused significant property damage or personal injury | 0 = No; 1 = Yes | |
| | ksads760 | Witnessed someone shot or stabbed in the community | 0 = No; 1 = Yes | |
| | ksads766 | Witness the grownups in the home push, shove or hit one another | 0 = No; 1 = Yes | |
| | ksads769 | A peer forced your child to do something sexually | 0 = No; 1 = Yes | |
| | ksads770 | Learned about the sudden unexpected death of a loved one | 0 = No; 1 = Yes | |
| | ksads763_765 | Beaten to the point of having bruises by a grown up in the home<br>A family member threatened to kill your child | 0 = No; 1 = Yes | Two items (ksads763, ksads765) were forming doublets and collapsed |
| | ksads764_768 | A non-family member threatened to kill your child<br>An adult outside your family touched your child in his or her privates, had your child touch their privates or did other sexual things to your child | 0 = No; 1 = Yes | Two items (ksads764, ksads768) were forming doublets and collapsed |

Table S1b. ABCD Parent Family Environment Scale-Family Conflict Subscale Modified from PhenX (FES).

| Instrument Name | Variable Names | Question Description | Scoring Guide | Note |
|---|---|---|---|---|
| ABCD Parent Family Environment Scale-Family Conflict Subscale Modified from PhenX (FES) | fes1 | We fight a lot in our family. | 1 = True; 0 = False | |
| | fes2 | Family members rarely become openly angry. | 0 = True; 1 = False | |
| | fes3 | Family members sometimes get so angry they throw things. | 1 = True; 0 = False | |
| | fes4 | Family members hardly ever lose their tempers. | 0 = True; 1 = False | |
| | fes5 | Family members often criticize each other. | 1 = True; 0 = False | |
| | fes6 | Family members sometimes hit each other. | 1 = True; 0 = False | |
| | fes7 | If there is a disagreement in our family, we try hard to smooth things over and keep the peace. | 0 = True; 1 = False | |
| | fes8 | Family members often try to one-up or outdo each other. | 1 = True; 0 = False | |
| | fes9 | In our family, we believe you don't ever get anywhere by raising your voice. | 0 = True; 1 = False | |

Table S1c. ABCD Parent Demographics Survey.

| Instrument Name | Variable Names | Question Description | Scoring Guide | Note |
|---|---|---|---|---|
| ABCD Parent Demographics Survey | fexp1_2 | Needed food but couldn't afford to buy it or couldn't afford to go out to get it?<br>Were without telephone service because you could not afford it? | 1=Yes; 0=No; | Two items (fexp1, fexp2) were forming doublets and collapsed |
| | fexp3_4 | Didn't pay the full amount of the rent or mortgage because you could not afford it?<br>Were evicted from your home for not paying the rent or mortgage? | 1=Yes; 0=No; | Two items (fexp3, fexp4) were forming doublets and collapsed |
| | fexp5 | Had services turned off by the gas or electric company, or the oil company wouldn't deliver oil because payments were not made? | 1=Yes; 0=No; | |
| | fexp6_7 | Had someone who needed to see a doctor or go to the hospital but didn't go because you could not afford it?<br>Had someone who needed a dentist but couldn't go because you could not afford it? | 1=Yes; 0=No; | Two items (fexp6, fexp7) were forming doublets and collapsed |
| | roster | How many people are living at your address?<br>INCLUDE everyone who is living or staying at your address for more than 2 months. | Float | Responses greater than 11 are excluded as outliers |

Table S1d. ABCD Family History Assessment Part 1 and Part 2.

| Instrument Name | Variable Names | Question Description | Scoring Guide | Note |
|---|---|---|---|---|
| ABCD Family History Assessment Part 1 | fmhx4 | Has ANY blood relative of your child ever had any problems due to alcohol, such as: Marital separation or divorce; Laid off or fired from work; Arrests or DUIs; Alcohol harmed their health; In an alcohol treatment program; Suspended or expelled from school 2 or more times; Isolated self from family, caused arguments or were drunk a lot. | 1=Yes; 0=No; | |
| | fmhx5 | Has ANY blood relative of your child ever had any problems due to drugs, such as: Marital separation or divorce; Laid off or fired from work; Arrests or DUIs; Drugs harmed their health; In a drug treatment program; Suspended or expelled from school 2 or more times; Isolated self from family, caused arguments or were high a lot. | 1=Yes; 0=No; | |
| ABCD Family History Assessment Part 2 | fmhx7 | Has ANY blood relative of your child ever had a period of time when others were concerned because they suddenly became more active day and night and seemed not to need any sleep and talked much more than usual for them? | 1=Yes; 0=No; | |
| | fmhx8 | Has ANY blood relative of your child ever had a period lasting six months when they saw visions or heard voices or thought people were spying on them or plotting against them? | 1=Yes; 0=No; | |
| | fmhx9 | Has ANY blood relative of your child been the kind of person who never holds a job for long, or gets into fights, or gets into trouble with the police from time to time, or had any trouble with the law as a child or an adult? | 1=Yes; 0=No; | |
| | fmhx10 | Has ANY blood relative of your child ever had any other problems with their nerves, or had a nervous breakdown? | 1=Yes; 0=No; | |
| | fmhx11 | Has ANY blood relative of your child ever been to a doctor or a counselor about any emotional or mental problems, or problems with alcohol or drugs? | 1=Yes; 0=No; | |
| | fmhx12 | Has ANY blood relative of your child ever been hospitalized because of emotional or mental problems, or drug or alcohol problems? | 1=Yes; 0=No; | |
| | fmhx13 | Has ANY blood relative of your child ever attempted or committed suicide? | 1=Yes; 0=No; | |

Table S1e. ABCD Children's Report of Parental Behavioral Inventory.

| Instrument Name | Variable Names | Question Description | Scoring Guide | Note |
|---|---|---|---|---|
| ABCD Children's Report of Parental Behavioral Inventory | cvg_acc1 | First caregiver (caregiver participating in study/completing protocol). Makes me feel better after talking over my worries with him/her | 1 = Not like him/her; 2 = Somewhat like him/her; 3 = A lot like him/her | Responses 1 and 2 are collapsed |
| | cvg_acc2 | First caregiver (caregiver participating in study/completing protocol). Smiles at me very often. | 1 = Not like him/her; 2 = Somewhat like him/her; 3 = A lot like him/her | |
| | cvg_acc3 | First caregiver (caregiver participating in study/completing protocol). Is able to make me feel better when I am upset. | 1 = Not like him/her; 2 = Somewhat like him/her; 3 = A lot like him/her | |
| | cvg_acc4 | First caregiver (caregiver participating in study/completing protocol). Believes in showing his/her love for me. | 1 = Not like him/her; 2 = Somewhat like him/her; 3 = A lot like him/her | |
| | cvg_acc5 | First caregiver (caregiver participating in study/completing protocol). Is easy to talk to. | 1 = Not like him/her; 2 = Somewhat like him/her; 3 = A lot like him/her | |
| | cvg_acc | Is there a second adult who cares for you, that you spend a significant amount of time with, like your other parent, step-parent, grandparent, aunt or uncle? | 1 = Yes; 0 = No | |

Table S1f. ABCD Parent Diagnostic Interview for DSM-5 Background Items Full (KSADS-5).

| Instrument Name | Variable Names | Question Description | Scoring Guide | Note |
|---|---|---|---|---|
| ABCD Parent Diagnostic Interview for DSM-5 Background Items Full (KSADS-5) | conflict | In general, how do you and your child get along? | 1 = Very well; 2 = Some conflict; 3 = A lot of conflict; | |
| | ftime_lv | Does your child live with you full time? | 0 = No; 1 = Yes; | |
| | school_g | What kind of grades does your child get on average? | 1 = A's / Excellent; 2 = B's / Good B; 3 = C's / Average; 4 = D's / Below Average; 5 = F's / Struggling a lot F; | Responses 4 and 5 are collapsed |
| | grad_drp | In the past year or past several months, has there been a drop in your/your child's grades? | 1 = Yes; 2 = No; | |
| | service2 | Does your child receive special services at school?( 2, Full-time Learning Support Classroom) | 0 = No; 1 = Yes | |
| | service4 | Does your child receive special services at school?( 4, Special Education for specific subjects (partially mainstreamed)) | 0 = No; 1 = Yes | |
| | service5 | Does your child receive special services at school? ( 5, Part-time Aide) | 0 = No; 1 = Yes | |
| | service6 | Does your child receive special services at school? ( 6, Resource Room) | 0 = No; 1 = Yes | |
| | service7 | Does your child receive special services at school? ( 7, Tutoring Support) | 0 = No; 1 = Yes | |
| | service8 | Does your child receive special services at school? ( 8, Gifted Program) | 0 = No; 1 = Yes | |
| | service9 | Does your child receive special services at school? ( 9, Other) | 0 = No; 1 = Yes | |
| | det_susp | In the past year, has you/your child had any detentions or suspensions? | 1 = Yes; 2 = No; | |
| | bst_frnd | Does your child have a best friend? | 1 = Yes; 0= No; | |
| | grp_frnd | Does your child have a regular group of kids he or she hangs out with at school or in your neighborhood? | 1 = Yes; 0= No; | |
| | bully | Does your child have any problems with bullying at school or in your neighborhood? | 1 = Yes; 0 = No | |
| | mh_srvc | Has your child ever received mental health or substance abuse services? | 1 = Yes; 0= No; | |

Table S1g. ABCD School Risk and Protective Factors Survey.

| Instrument Name | Variable Names | Question Description | Scoring Guide | Note |
|---|---|---|---|---|
| ABCD School Risk and Protective Factors Survey | school2 | In my school, students have lots of chances to help decide things like class activities and rules. | 1 = NO!; 2 = no; 3 = yes; 4 = YES! | |
| | school3 | I get along with my teachers. | 1 = NO!; 2 = no; 3 = yes; 4 = YES! | |
| | school4 | My teacher(s) notices when I am doing a good job and lets me know about it. | 1 = NO!; 2 = no; 3 = yes; 4 = YES! | |
| | school5 | There are lots of chances for students in my school to get involved in sports, clubs, or other school activities outside of class. | 1 = NO!; 2 = no; 3 = yes; 4 = YES! | |
| | school6 | I feel safe at my school. | 1 = NO!; 2 = no; 3 = yes; 4 = YES! | |
| | school7 | The school lets my parents know when I have done something well. | 1 = NO!; 2 = no; 3 = yes; 4 = YES! | |
| | school8 | I like school because I do well in class. | 1 = NO!; 2 = no; 3 = yes; 4 = YES! | |
| | school9 | I feel I'm just as smart as other kids my age. | 1 = NO!; 2 = no; 3 = yes; 4 = YES! | |
| | school10 | There are lots of chances to be part of class discussions or activities. | 1 = NO!; 2 = no; 3 = yes; 4 = YES! | |
| | school15 | Usually, school bores me. | 1 = NO!; 2 = no; 3 = yes; 4 = YES! | |
| | school17 | Getting good grades is not so important to me. | 1 = NO!; 2 = no; 3 = yes; 4 = YES! | |

Table S1h. ABCD Other Resilience.

| Instrument Name | Variable Names | Question Description | Scoring Guide | Note |
|---|---|---|---|---|
| ABCD Other Resilience | resil5a | How many friends that are boys do you have? | Answer: 0 - 100; | Responses greater than 43 are excluded as outliers |
| | resil6a | How many friends that are girls do you have? | Answer: 0 - 100; | Responses greater than 46 are excluded as outliers |
| | resil5b | How many CLOSE friends that are boys do you have? | Answer: 0 - 100; | Responses greater than 13 are excluded as outliers |
| | resil6b | How many CLOSE friends that are girls do you have? | Answer: 0 - 100; | Responses greater than 14 are excluded as outliers |

Table S1i. ABCD Youth Neighborhood Safety/Crime Survey Modified from PhenX (NSC).

| Instrument Name | Variable Names | Question Description | Scoring Guide | Note |
|---|---|---|---|---|
| ABCD Youth Neighborhood Safety/Crime Survey Modified from PhenX (NSC) | neigh | My neighborhood is safe from crime. | 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree | |
| | neigh1 | I feel safe walking in my neighborhood, day or night. | 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree | |
| | neigh3 | My neighborhood is safe from crime. | 1 = Strongly Disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly Agree | |

Table S1j. ABCD Parent Community Risk and Protective Factors (CRPF).

| Instrument Name | Variable Names | Question Description | Scoring Guide | Note |
|---|---|---|---|---|
| ABCD Parent Community Risk and Protective Factors (CRPF) | crpf1 | If your child wanted to get some beer, wine, or hard liquor (for example vodka, whiskey, or gin), how easy would it be for her/him to get some? | 0 = Very hard; 1 = Sort of hard; 2 = Sort of easy; 3 = Very easy; | |
| | crpf2 | If your child wanted to get some cigarettes, how easy would it be for her/him to get some? | 0 = Very hard; 1 = Sort of hard; 2 = Sort of easy; 3 = Very easy; | |
| | crpf4 | If your child wanted to get some marijuana, how easy would it be for her/him to get some? | 0 = Very hard; 1 = Sort of hard; 2 = Sort of easy; 3 = Very easy; | |
| | crpf6 | Is "medical marijuana" (marijuana prescribed by a doctor) legal in your state? | 0 = Yes; 1 = No; | |

Table S1k. ABCD Parental Monitoring Survey.

| Instrument Name | Variable Names | Question Description | Scoring Guide | Note |
|---|---|---|---|---|
| ABCD Parental Monitoring Survey | monitor1 | How often do your parents/guardians know where you are? | 1 = Never; 2 = Almost Never; 3 = Sometimes; 4 = Often; 5 = Always or Almost Always | Responses 1 and 2 are collapsed due to low endorsement |
| | monitor2 | How often do your parents know who you are with when you are not at school and away from home? | 1 = Never; 2 = Almost Never; 3 = Sometimes; 4 = Often; 5 = Always or Almost Always | |
| | monitor3 | If you are at home when your parents or guardians are not, how often do you know how to get in touch with them? | 1 = Never; 2 = Almost Never; 3 = Sometimes; 4 = Often; 5 = Always or Almost Always | |
| | monitor4 | How often do you talk to your mom/dad or guardian about your plans for the coming day, such as your plans about what will happen at school or what you are going to do with friends? | 1 = Never; 2 = Almost Never; 3 = Sometimes; 4 = Often; 5 = Always or Almost Always | |
| | monitor5 | In an average week, how many times do you and your parents/guardians, eat dinner together? | 1 = Never; 2 = Almost Never; 3 = Sometimes; 4 = Often; 5 = Always or Almost Always | |

Table S11. ABCD Residential History Derived Score.

| Instrument Name | Abbreviation | Variable Description | Variable Description (ABCD) | Note |
|---|---|---|---|---|
| ABCD Residential History Derived Score | rh_yr | Years of residence in address 1 | Residential history years of residence 1 | |
| | rh_ele | This is based on direct query to the Google map, which contains elevations given where participants live. | Residential history derived elevation 1 | Log transformed |
| | rh_walk | Walkability score is based on a simple formula that ranks selected indicators from the Smart Location Database that have been demonstrated to affect the propensity of walk trips. The National Walkability Index dataset ranks each block group relative to all other block groups in the US | Residential history derived - national walkability index 1 | |
| | rh_crime | Total number of arrests (Includes both Part I (murder, rape, robbery, aggravated assault, burglary, larceny, auto theft, and arson) and Part II (forgery, fraud, embezzlement, vandalism, weapon violations, sex offenses, drug and alcohol abuse violations, gambling, vagrancy, curfew violations, and runaways) crimes) | Residential history derived - Uniform Crime Reports: grand total 1 | Log transformed |
| | rh_eduh | Percentage of population aged 25 years or older with at least a high school diploma | Residential history derived - Area Deprivation Index: Percentage of population aged >=25 y with at least a high school diploma 1 | Reverse scored and log transformed |
| | rh_work | Percentage of employed persons aged 16 years or older in white collar occupations | Residential history derived - Area Deprivation Index: Percentage of employed persons aged >=16 y in white collar occupations 1 | Reverse scored and log transformed |
| | rh_incom | Median family income | Residential history derived - Area Deprivation Index: Median family income 1 | Log transformed |
| | rh_disp | Income disparity (defined by Singh as the log of 100 x the ratio of the number of households with less than $10 000 in income to the number of households with $50 000 or more in income) | Residential history derived - Area Deprivation Index: Income disparity defined by Singh as the log of 100 x ratio of the number of | |

| | | | |
|---|---|---|---|
| | | households with <10000 annual income to the number of households with >50000 annual income. 1 | |
| rh_homv | Median home value | Residential history derived - Area Deprivation Index: Median home value 1 | Log transformed |
| rh_rent | Median gross rent | Residential history derived - Area Deprivation Index: Median gross rent 1 | High variance adjusted by dividing by 100 |
| rh_homo | Percentage of owner-occupied housing units (home ownership rate) | Residential history derived - Area Deprivation Index: Percentage of owner 1 | Reverse scored and log transformed |
| rh_crowd | Percentage of households with more than 1 person per room (crowding) | Residential history derived - Area Deprivation Index: Percentage of occupied housing units with >1 person per room (crowding) 1 | Log transformed |
| rh_unemp | Percentage of civilian labor force population aged 16 years or older unemployed (unemployment rate) | Residential history derived - Area Deprivation Index: Percentage of civilian labor force population aged >=16 y unemployed (unemployment rate) 1 | Log transformed |
| rh_b138 | Percentage of families below 138% of the poverty level 1 | Residential history derived - Area Deprivation Index: Percentage of population below 138% of the poverty threshold 1 | Log transformed |
| rh_sp | Percentage of single-parent households with children younger than 18 years | Residential history derived - Area Deprivation Index: Percentage of single 1 | Log transformed |
| rh_ncar | Percentage of households without a motor vehicle | Residential history derived - Area Deprivation Index: Percentage of occupied housing units without a motor vehicle 1 | Log transformed |
| rh_ntel | Percentage of households without a telephone | Residential history derived - Area Deprivation Index: Percentage of occupied | Log transformed |

| | | | |
|---|---|---|---|
| | | housing units without a telephone 1 | |
| rh_nplumb | Percentage of housing units without complete plumbing | Residential history derived - Area Deprivation Index: Percentage of occupied housing units without complete plumbing (log) 1 | Log transformed |
| rh_adi_p | National percentile of ADI scores. | Residential history derived - Area Deprivation Index: national percentiles, higher means higher value of ADI 1 | |
| rh_pden | The estimation is based on the 2010 census tract while adjusted based on potential under-reporting across the world | Residential history derived - UN adjusted population density 1 | Log transformed |
| rh_no2 | Satellite based pollution measure. Obtained from NASA SEDAC. The resolution is at 100 km2. 3 year average spanning from 2010 to 2012. | Residential history derived - 3 years average of ground level NO2 at 10x10km2 1 | Log transformed |
| rh_pm25 | Obtained same as NO2 but an annual average. | Residential history derived - annual average of PM 2.5 at 10x10km2 1 | |
| rh_pxrd | Proximity to major roads, in meters | Residential history derived - proximity to major roads, in meters 1 | Log transformed |
| rh_lead | Estimated probability of lead exposure given the age of homes (i.e., older homes are more likely to contain lead hazards); averaged across current primary, secondary, and tertiary addresses | Estimated probability of lead exposure given the age of homes (i.e., older homes are more likely to contain lead hazards); averaged across current primary, secondary, and tertiary addresses | |
| rh_leadh | Estimated percentage of homes at risk for lead exposure given lead-based paint in census tract of primary residential address; averaged across current primary, secondary, and tertiary addresses | Estimated percentage of homes at risk for lead exposure given lead-based paint in census tract of primary residential address; averaged across current primary, secondary, and tertiary addresses | Log transformed |

| | | | |
|---|---|---|---|
| | rh_pm25a | Satellite based pollution measure with the resolution at 100 km2; averaged across current primary, secondary, and tertiary addresses | Satellite based pollution measure with the resolution at 100 km2; averaged across current primary, secondary, and tertiary addresses |

**Table S2.** Exploratory structural equation modeling with 4 factors.

| Item | Brief wording | Family Dynamics | Interpersonal Support | Neighborhood SES Deprivation | Urbanicity |
|---|---|---|---|---|---|
| ksads754 | Car accident | 0.27 | 0.05 | 0.13 | -0.14 |
| ksads755 | Significant accident | 0.31 | 0.01 | -0.03 | -0.02 |
| ksads756 | Witnessed/caught in a fire | 0.33 | 0.05 | 0.03 | 0.01 |
| ksads757 | Witnessed/caught in a natural disaster | 0.22 | 0.01 | 0.07 | -0.30 |
| ksads760 | Witnessed violence in the community | **0.43** | 0.12 | 0.15 | 0.13 |
| ksads766 | Witnessed violence in the home | **0.53** | 0.01 | 0.16 | 0.00 |
| ksads769 | Sexually assaulted by a peer | **0.42** | -0.02 | -0.01 | -0.03 |
| ksads770 | Learned about sudden death of loved one | 0.31 | 0.01 | 0.06 | -0.01 |
| ksads763_765 | Beaten or threatened to death by a family member | **0.50** | 0.05 | 0.10 | -0.04 |
| ksads764_768 | Threatened to death or sexually assaulted by a non-family member | **0.40** | 0.02 | 0.14 | -0.15 |
| fes1 | Family members fight a lot | **0.52** | -0.06 | -0.09 | 0.02 |
| fes2 | Family member rarely become angry | 0.34 | -0.03 | -0.04 | 0.06 |
| fes3 | Family members throw things | **0.50** | -0.03 | -0.02 | 0.06 |
| fes4 | Family members hardly lose temper | 0.36 | -0.03 | -0.01 | 0.04 |
| fes5 | Family members criticize each other | 0.39 | -0.05 | 0.06 | 0.05 |
| fes6 | Family members hit each other | **0.46** | 0.00 | 0.04 | 0.04 |
| fes7 | Family members try to smooth things when there is a disagreement | 0.23 | -0.06 | -0.04 | 0.07 |
| fes8 | Family members try to outdo each other | 0.32 | 0.01 | 0.12 | 0.02 |
| fes9 | Family members don't raise voice | 0.27 | -0.02 | -0.25 | 0.03 |
| fexp1_2 | Could not afford food/telephone service | **0.48** | -0.03 | 0.28 | 0.17 |
| fexp3_4 | Could not pay and/or evicted for not paying rent/mortgage | **0.49** | -0.03 | 0.23 | 0.17 |

| | | | | | |
|---|---|---|---|---|---|
| fexp5 | Could not pay for gas/electric service | **0.45** | -0.03 | 0.19 | 0.13 |
| fexp6_7 | Could not afford to go to the hospital/see a dentist | 0.37 | -0.06 | 0.22 | -0.05 |
| roster | Number of people living at the home | 0.02 | 0.03 | 0.01 | -0.07 |
| fmhx4 | Family history of alcohol-related problems | **0.58** | 0.02 | -0.11 | -0.02 |
| fmhx5 | Family history of drug-related problems | **0.67** | 0.00 | 0.06 | -0.06 |
| fmhx7 | Family history of mania | **0.55** | -0.03 | -0.06 | -0.01 |
| fmhx8 | Family history of psychosis | **0.54** | 0.01 | 0.01 | 0.02 |
| fmhx9 | Family history of antisocial problems | **0.66** | 0.01 | 0.09 | -0.10 |
| fmhx10 | Family history of nerve problems | **0.57** | 0.01 | -0.09 | 0.02 |
| fmhx11 | Family history of receiving psychiatric service | **0.69** | 0.02 | -0.25 | -0.02 |
| fmhx12 | Family history of hospitalization due to psychiatric problems | **0.70** | 0.04 | -0.09 | -0.02 |
| fmhx13 | Family history of suicide | **0.61** | 0.00 | -0.09 | -0.01 |
| cvg_acc1 | Caregiver makes me feel better after talking over my worries | 0.01 | **0.63** | 0.02 | 0.02 |
| cvg_acc2 | Caregiver smiles at me very often | -0.02 | **0.53** | -0.08 | 0.03 |
| cvg_acc3 | Caregiver makes me feel better when I'm upset | 0.03 | **0.65** | 0.00 | 0.01 |
| cvg_acc4 | Caregiver believes in showing love for me | 0.00 | **0.64** | 0.01 | 0.03 |
| cvg_acc5 | Caregiver is easy to talk to | -0.02 | **0.56** | -0.02 | 0.04 |
| cvg_acc | There is a second adult who cares for me | -0.10 | 0.12 | -0.15 | -0.04 |
| conflict | Caregiver and child get along | 0.37 | -0.14 | -0.11 | 0.01 |
| ftime_lv | Child lives with caregiver full time | -0.07 | -0.02 | 0.12 | 0.03 |

| | | | | | |
|---|---|---|---|---|---|
| school_g | Grades child gets on average | 0.17 | -0.19 | 0.25 | 0.00 |
| grad_drp | Drop in child's grades | -0.20 | 0.20 | -0.22 | 0.04 |
| service2 | Child receives: Full-time learning support | 0.07 | -0.09 | 0.22 | -0.03 |
| service4 | Child receives: Special education for specific subjects | 0.20 | -0.15 | 0.11 | -0.06 |
| service5 | Child receives: Part-time aide | 0.20 | -0.12 | 0.13 | 0.03 |
| service6 | Child receives: Resource room | 0.27 | -0.08 | 0.00 | -0.02 |
| service7 | Child receives: Tutoring support | 0.15 | -0.05 | 0.13 | -0.11 |
| service8 | Child receives: Gifted program service | -0.10 | 0.03 | -0.13 | -0.04 |
| service9 | Child receives: other special service | 0.14 | -0.06 | 0.01 | -0.02 |
| det_susp | Detention or suspension history | -0.36 | 0.18 | -0.22 | -0.06 |
| bst_frnd | Child has a best friend | -0.07 | 0.16 | 0.12 | -0.08 |
| grp_frnd | Child has a group of friends | -0.05 | 0.16 | -0.20 | -0.01 |
| bully | Problems with bullying | 0.35 | -0.13 | 0.10 | -0.01 |
| mh_srvc | Child has received mental health service | **0.47** | -0.13 | -0.11 | 0.03 |
| school2 | Students have lots of chance to decide things in my school | 0.04 | **0.40** | 0.09 | 0.05 |
| school3 | I get along with my teachers | -0.04 | **0.61** | -0.04 | -0.02 |
| school4 | My teachers notice when I'm doing good job | 0.02 | **0.52** | 0.15 | -0.04 |
| school5 | There are many chances for students in get involved | 0.04 | 0.36 | 0.01 | 0.03 |
| school6 | I feel safe at my school | 0.00 | **0.58** | -0.13 | -0.02 |
| school7 | The school lets my parents know when I've done something well | 0.04 | **0.46** | 0.10 | -0.04 |
| school8 | I like school because I do well | -0.01 | **0.62** | 0.12 | -0.03 |
| school9 | I feel just as smart as other kids | 0.03 | **0.47** | 0.04 | -0.01 |
| school10 | There are many chances to be part of class | 0.06 | **0.59** | -0.01 | 0.05 |
| school15 | School bores me | 0.05 | **-0.50** | -0.01 | 0.01 |

| | | | | | |
|---|---|---|---|---|---|
| school17 | Getting good grads is not important to me | 0.06 | -0.29 | -0.12 | 0.05 |
| resil5a | The number of friends that are boys | 0.02 | -0.01 | -0.04 | 0.00 |
| resil6a | The number of friends that are girls | 0.00 | 0.23 | 0.01 | 0.01 |
| resil5b | The number of close friends that are boys | 0.01 | -0.02 | -0.06 | 0.01 |
| resil6b | The number of close friends that are girls | -0.01 | 0.22 | 0.05 | 0.00 |
| neigh | Neighborhood is safe from crime (child) | -0.07 | 0.25 | -0.30 | -0.11 |
| neigh1 | I feel safe walking in my neighborhood | -0.12 | 0.04 | -0.37 | **-0.46** |
| neigh3 | Neighborhood is safe from crime (parent) | -0.15 | 0.03 | -0.38 | **-0.50** |
| crpf1 | Accessibility to alcohol | 0.08 | 0.00 | **-0.45** | 0.08 |
| crpf2 | Accessibility to cigarettes | **0.41** | -0.05 | -0.03 | 0.04 |
| crpf4 | Accessibility to marijuana | **0.40** | -0.02 | -0.07 | 0.12 |
| crpf6 | Medical marijuana legal in the state | 0.09 | 0.06 | 0.12 | -0.19 |
| monitor1 | How often parents know where I am | -0.05 | **0.45** | -0.05 | 0.00 |
| monitor2 | How often parents know who I am with | 0.01 | 0.35 | -0.13 | 0.03 |
| monitor3 | How often parents get in touch when they are not at home | 0.02 | 0.30 | -0.09 | 0.05 |
| monitor4 | How often I let parents about my plan | -0.01 | **0.43** | 0.07 | 0.02 |
| monitor5 | How often child and parents eat dinner together | -0.06 | 0.28 | -0.11 | 0.01 |
| rh_yr | Years of residence | -0.11 | 0.00 | -0.17 | 0.12 |
| rh_ele | Elevation level | 0.24 | 0.08 | -0.27 | 0.27 |
| rh_walk | Walkability scores | -0.08 | 0.00 | 0.17 | **0.50** |
| rh_crime | Crime rates | 0.13 | 0.05 | -0.24 | **0.56** |
| rh_eduh* | Percentage of populations with at least high school diploma | -0.11 | -0.05 | **0.77** | 0.02 |
| rh_work* | Percentage of populations with white collar occupations | -0.04 | -0.03 | 0.16 | -0.28 |
| rh_incom | Median family income | 0.03 | -0.03 | **-0.97** | 0.10 |
| rh_indis | Income disparity | 0.02 | 0.02 | **0.83** | 0.05 |

| | | | | | |
|---|---|---|---|---|---|
| rh_homv | Median home value | -0.12 | -0.07 | **-0.53** | 0.13 |
| rh_rent | Median gross rent | -0.22 | -0.05 | **-0.50** | 0.15 |
| rh_homo* | Home ownership rate | -0.06 | 0.00 | **0.63** | 0.27 |
| rh_crowd | Crowding in the home | -0.18 | -0.01 | **0.50** | 0.13 |
| rh_unemp | Unemployment rate | -0.03 | -0.03 | **0.67** | 0.06 |
| rh_b138 | Percentage of populations below or around the poverty level | -0.02 | -0.01 | **0.87** | 0.04 |
| rh_sp | Percentage of single-parent household | 0.03 | -0.01 | **0.76** | 0.10 |
| rh_ncar | Percentage of houses without a motor vehicle | 0.04 | 0.02 | **0.62** | 0.31 |
| rh_ntel | Percentage of houses without a telephone | -0.02 | 0.00 | **0.41** | 0.03 |
| rh_nplmb | Percentage of houses without complete plumbing | -0.05 | -0.01 | 0.22 | 0.03 |
| rh_adi_p | National percentile of ADI scores | 0.12 | 0.00 | **0.79** | -0.24 |
| rh_pden | Population density | -0.12 | 0.01 | 0.21 | **0.53** |
| rh_no2 | Pollution measure (NO2) | -0.04 | 0.02 | -0.12 | **0.83** |
| rh_pm25 | Pollution measure (PM2.5) | 0.06 | 0.03 | -0.07 | **0.42** |
| rh_pxrd | Proximity to major roads | 0.01 | 0.01 | -0.16 | -0.17 |
| rh_leadh | Lead exposure risk | 0.08 | 0.02 | 0.21 | **0.46** |
| rh_pm25a | Pollution measure (PM2.5) at high resolution | -0.09 | 0.01 | 0.28 | 0.30 |

*Note*. $N$ = 7,445. Standardized loadings ≥ 0.4 are in bold. * denotes items that are reverse coded before log transformation. Items with standardized loadings in bold were retained for the next round of a confirmatory factor analysis in the second random sample ($N$ = 2,373).

**Table S3.** Standardized factor loadings from the confirmatory bifactor model.

| Item | Brief wording | General Environmental Stress | Family Dynamics | Interpersonal Support | Neighborhood SES Deprivation | Urbanicity |
|---|---|---|---|---|---|---|
| ksads760 | Witnessed violence in the community | **0.47** | 0.30 | | | |
| ksads766 | Witnessed violence in the home | 0.22 | **0.48** | | | |
| ksads769 | Sexually assaulted by a peer | 0.08 | **0.50** | | | |
| ksads763_765 | Beaten or threatened to death by a family member | 0.14 | **0.46** | | | |
| ksads764_768 | Threatened to death or sexually assaulted by a non-family member | 0.24 | 0.39 | | | |
| fes1 | Family members fight a lot | 0.11 | **0.40** | | | |
| fes3 | Family members throw things | 0.15 | 0.36 | | | |
| fes6 | Family members hit each other | 0.21 | 0.31 | | | |
| fexp1_2 | Could not afford food/telephone service | **0.55** | 0.38 | | | |
| fexp3_4 | Could not pay and/or evicted for not paying rent/mortgage | **0.45** | **0.43** | | | |
| fexp5 | Could not pay for gas/electric service | **0.46** | 0.36 | | | |
| fmhx4 | Family history of alcohol-related problems | -0.05 | **0.62** | | | |
| fmhx5 | Family history of drug-related problems | 0.21 | **0.75** | | | |
| fmhx7 | Family history of mania | 0.03 | **0.68** | | | |
| fmhx8 | Family history of psychosis | 0.16 | **0.57** | | | |
| fmhx9 | Family history of antisocial problems | 0.23 | **0.72** | | | |
| fmhx10 | Family history of nerve problems | 0.05 | **0.64** | | | |

| | | | | |
|---|---|---|---|---|
| fmhx11 | Family history of receiving psychiatric service | -0.12 | **0.79** | |
| fmhx12 | Family history of hospitalization due to psychiatric problems | 0.04 | **0.79** | |
| fmhx13 | Family history of suicide | -0.01 | **0.67** | |
| mh_srvc | Child has received mental health service | -0.03 | **0.43** | |
| crpf2 | Accessibility to cigarettes | -0.01 | 0.35 | |
| crpf4 | Accessibility to marijuana | -0.01 | 0.21 | |
| cvg_acc1 | Caregiver makes me feel better after talking over my worries | -0.06 | | **0.62** |
| cvg_acc2 | Caregiver smiles at me very often | -0.09 | | **0.56** |
| cvg_acc3 | Caregiver makes me feel better when I'm upset | -0.09 | | **0.68** |
| cvg_acc4 | Caregiver believes in showing love for me | -0.10 | | **0.67** |
| cvg_acc5 | Caregiver is easy to talk to | -0.08 | | **0.56** |
| school2 | Students have lots of chance to decide things in my school | 0.04 | | **0.43** |
| school3 | I get along with my teachers | -0.07 | | **0.67** |
| school4 | My teachers notice when I'm doing good job | 0.10 | | **0.61** |
| school6 | I feel safe at my school | -0.23 | | **0.51** |
| school7 | The school lets my parents know when I've done something well | 0.04 | | **0.53** |
| school8 | I like school because I do well | 0.08 | | **0.70** |
| school9 | I feel just as smart as other kids | -0.02 | | **0.50** |
| school10 | There are many chances to be part of class | 0.00 | | **0.58** |
| school15 | School bores me | 0.06 | | **-0.49** |

| | | | | | |
|---|---|---|---|---|---|
| monitor1 | How often parents know where I am | -0.06 | 0.34 | | |
| monitor4 | How often I let parents about my plan | 0.02 | **0.41** | | |
| crpf1 | Accessibility to alcohol | -0.36 | | -0.19 | |
| rh_eduh* | Percentage of populations with at least high school diploma | **0.76** | | 0.20 | |
| rh_incom | Median family income | **-0.79** | | **-0.55** | |
| rh_indis | Income disparity | **0.75** | | 0.39 | |
| rh_homv | Median home value | -0.31 | | **-0.53** | |
| rh_rent | Median gross rent | -0.26 | | **-0.60** | |
| rh_homo* | Home ownership rate | **0.81** | | 0.02 | |
| rh_crowd | Crowding in the home | **0.59** | | -0.11 | |
| rh_unemp | Unemployment rate | **0.66** | | 0.30 | |
| rh_b138 | Percentage of populations below or around the poverty level | **0.85** | | 0.31 | |
| rh_sp | Percentage of single-parent household | **0.74** | | 0.33 | |
| rh_ncar | Percentage of houses without a motor vehicle | **0.71** | | 0.25 | |
| rh_ntel | Percentage of houses without a telephone | **0.40** | | 0.21 | |
| rh_adi_p | National percentile of ADI scores | **0.55** | | **0.55** | |
| neigh1 | I feel safe walking in my neighborhood | **-0.47** | | | -0.16 |
| neigh3 | Neighborhood is safe from crime (parent) | **-0.51** | | | -0.25 |
| rh_walk | Walkability scores | 0.32 | | | 0.36 |
| rh_crime | Crime rates | -0.15 | | | **0.67** |
| rh_pden | Population density | 0.37 | | | **0.40** |
| rh_no2 | Pollution measure (NO2) | 0.03 | | | **0.97** |
| rh_pm25 | Pollution measure (PM2.5) | 0.02 | | | **0.49** |

| | | | |
|---|---|---|---|
| rh_leadh | Lead exposure risk | 0.37 | **0.49** |

*Note*. $N$ = 2,373; Standardized loadings ≥ 0.4 are in bold. * denotes items that are reverse coded before log transformation.

**Table S4.** Standardized factor loadings from the confirmatory higher-order model.

| Item | Brief wording | Family Dynamics | Interpersonal Support | Neighborhood SES Deprivation | Urbanicity |
|---|---|---|---|---|---|
| ksads760 | Witnessed violence in the community | **0.57** | | | |
| ksads766 | Witnessed violence in the home | **0.56** | | | |
| ksads769 | Sexually assaulted by a peer | **0.49** | | | |
| ksads763_765 | Beaten or threatened to death by a family member | **0.42** | | | |
| ksads764_768 | Threatened to death or sexually assaulted by a non-family member | **0.42** | | | |
| fes1 | Family members fight a lot | **0.43** | | | |
| fes3 | Family members throw things | **0.65** | | | |
| fes6 | Family members hit each other | **0.52** | | | |
| fexp1_2 | Could not afford food/telephone service | **0.78** | | | |
| fexp3_4 | Could not pay and/or evicted for not paying rent/mortgage | **0.62** | | | |
| fexp5 | Could not pay for gas/electric service | **0.58** | | | |
| fmhx4 | Family history of alcohol-related problems | **0.77** | | | |
| fmhx5 | Family history of drug-related problems | **0.60** | | | |
| fmhx7 | Family history of mania | **0.62** | | | |
| fmhx8 | Family history of psychosis | **0.73** | | | |
| fmhx9 | Family history of antisocial problems | **0.60** | | | |
| fmhx10 | Family history of nerve problems | 0.36 | | | |

| | | | |
|---|---|---|---|
| fmhx11 | Family history of receiving psychiatric service | 0.30 | |
| fmhx12 | Family history of hospitalization due to psychiatric problems | 0.17 | |
| fmhx13 | Family history of suicide | **0.50** | |
| mh_srvc | Child has received mental health service | **0.70** | |
| crpf2 | Accessibility to cigarettes | **0.74** | |
| crpf4 | Accessibility to marijuana | **0.48** | |
| cvg_acc1 | Caregiver makes me feel better after talking over my worries | | **0.63** |
| cvg_acc2 | Caregiver smiles at me very often | | **0.57** |
| cvg_acc3 | Caregiver makes me feel better when I'm upset | | **0.69** |
| cvg_acc4 | Caregiver believes in showing love for me | | **0.69** |
| cvg_acc5 | Caregiver is easy to talk to | | **0.56** |
| school2 | Students have lots of chance to decide things in my school | | **0.42** |
| school3 | I get along with my teachers | | **0.68** |
| school4 | My teachers notice when I'm doing good job | | **0.59** |
| school6 | I feel safe at my school | | **0.53** |
| school7 | The school lets my parents know when I've done something well | | **0.52** |
| school8 | I like school because I do well | | **0.68** |
| school9 | I feel just as smart as other kids | | **0.50** |
| school10 | There are many chances to be part of class | | **0.58** |
| school15 | School bores me | | **-0.49** |

| | | | | | |
|---|---|---|---|---|---|
| monitor1 | How often parents know where I am | | | | |
| | | 0.35 | | | |
| monitor4 | How often I let parents about my plan | **0.40** | | | |
| crpf1 | Accessibility to alcohol | | | | |
| | | | **-0.40** | | |
| rh_eduh* | Percentage of populations with at least high school diploma | | **0.76** | | |
| rh_incom | Median family income | | **-0.97** | | |
| rh_indis | Income disparity | | | | |
| | | | **0.86** | | |
| rh_homv | Median home value | | **-0.50** | | |
| rh_rent | Median gross rent | | **-0.52** | | |
| rh_homo* | Home ownership rate | | **0.70** | | |
| rh_crowd | Crowding in the home | | | | |
| | | | **0.49** | | |
| rh_unemp | Unemployment rate | | **0.73** | | |
| rh_b138 | Percentage of populations below or around the poverty level | | **0.90** | | |
| rh_sp | Percentage of single-parent household | | **0.81** | | |
| rh_ncar | Percentage of houses without a motor vehicle | | **0.76** | | |
| rh_ntel | Percentage of houses without a telephone | | **0.46** | | |
| rh_adi_p | National percentile of ADI scores | | **0.73** | | |
| neigh1 | I feel safe walking in my neighborhood | | | **-0.66** | |
| neigh3 | Neighborhood is safe from crime (parent) | | | **-0.75** | |
| rh_walk | Walkability scores | | | **0.49** | |
| rh_crime | Crime rates | | | 0.02 | |
| rh_pden | Population density | | | **0.53** | |
| rh_no2 | Pollution measure (NO2) | | | 0.19 | |
| rh_pm25 | Pollution measure (PM2.5) | | | 0.15 | |
| rh_leadh | Lead exposure risk | | | **0.57** | |

*Note*. $N = 2{,}373$; Standardized loadings $\geq 0.4$ are in bold. * denotes items that are reverse coded before log transformation.

**Table S5.** Psychometric indices for each latent factor in the bifactor model and the higher-order model.

| Index | General | Family Dynamics | Interpersonal Support | Neighborhood SES Deprivation | Urbanicity |
|---|---|---|---|---|---|
| | | | Bifactor Model | | |
| H | 0.942 | 0.922 | 0.888 | 0.717 | 0.944 |
| ECV (S&E) | 0.339 | 0.274 | 0.213 | 0.080 | 0.095 |
| ECV (New) | 0.339 | 0.834 | 0.976 | 0.248 | 0.719 |
| Omega | 0.879 | 0.906 | 0.851 | 0.804 | 0.644 |
| OmegaH | 0.217 | 0.827 | 0.848 | 0.011 | 0.644 |
| Factor determinancy | 0.957 | 0.961 | 0.943 | 0.863 | 0.972 |
| PUC | 0.731 | | | | |
| | | | Higher-Order Model | | |
| H | | 0.929 | 0.889 | 0.972 | 0.765 |
| Factor determinancy | 0.880 | 0.964 | 0.943 | 0.986 | 0.888 |

*Note.* H = index of construct replicability; ECV = explained common variance; PUC = percent correlations that are uncontaminated; OmegaH = ω hierarchical.

**Table S6.** Results examining the relationship between cortical and subcortical regional GMV and environmental stress factors identified by bifactor modeling.

| Brain region | General Environmental Stress | | | Family Dynamics | | | Interpersonal Support | | | Neighborhood SES Deprivation | | | Urbanicity | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ |
| Left banks of superior temporal sulcus | **-2.86** | **.004** | .001 | -2.46 | .081 | .001 | 1.31 | .615 | .000 | -0.58 | .726 | .001 | **2.27** | **.047** | .001 |
| Left caudal anterior cingulate | **-3.84** | **.000** | .002 | -1.53 | .227 | .000 | 1.96 | .363 | .001 | -0.65 | .687 | .000 | 1.20 | .282 | .000 |
| Left caudal middle frontal | **-5.44** | **.000** | .004 | 1.21 | .348 | .000 | 0.05 | .972 | .000 | -0.11 | .958 | .000 | 0.93 | .408 | .000 |
| Left cuneus | **-5.88** | **.000** | .005 | 0.72 | .584 | .000 | 0.09 | .965 | .000 | 0.00 | .999 | .000 | 0.56 | .623 | .000 |
| Left entorhinal | **-3.58** | **.000** | .002 | -2.25 | .104 | .001 | -0.68 | .880 | .000 | -3.02 | .087 | .001 | **2.48** | **.033** | .001 |
| Left fusiform | **-5.60** | **.000** | .004 | -1.55 | .227 | .000 | 2.41 | .199 | .001 | -0.48 | .773 | .001 | **2.87** | **.014** | .001 |
| Left inferior parietal | **-3.36** | **.001** | .002 | -2.64 | .060 | .001 | 1.56 | .522 | .000 | -1.91 | .275 | .001 | **2.46** | **.034** | .001 |
| Left inferior temporal | **-4.16** | **.000** | .003 | **-2.91** | **.039** | .001 | 1.01 | .759 | .000 | -2.04 | .244 | .001 | **2.26** | **.047** | .001 |
| Left isthmus cingulate | **-3.11** | **.002** | .001 | -1.32 | .289 | .000 | 1.30 | .615 | .000 | -1.97 | .266 | .002 | **3.81** | **.000** | .002 |
| Left lateral occipital | **-5.54** | **.000** | .004 | -0.76 | .565 | .000 | -0.25 | .965 | .000 | 0.45 | .778 | .001 | 2.05 | .070 | .001 |
| Left lateral orbitofrontal | **-3.71** | **.000** | .002 | -0.37 | .773 | .000 | 0.31 | .965 | .000 | -1.09 | .479 | .001 | 2.21 | .052 | .001 |
| Left lingual | **-4.95** | **.000** | .003 | 0.63 | .639 | .000 | 2.41 | .199 | .001 | 0.03 | .999 | .001 | 2.01 | .075 | .001 |
| Left medial orbitofrontal | **-2.85** | **.004** | .001 | -1.40 | .263 | .000 | 0.73 | .880 | .000 | 0.45 | .778 | .001 | 2.17 | .057 | .001 |
| Left middle temporal | **-5.02** | **.000** | .003 | -1.12 | .382 | .000 | 1.73 | .476 | .000 | -1.37 | .404 | .001 | **2.50** | **.033** | .001 |
| Left parahippocampal | **-6.57** | **.000** | .006 | **-3.83** | **.000** | .003 | 1.47 | .584 | .000 | -0.73 | .641 | .001 | **2.94** | **.012** | .001 |
| Left paracentral | **-3.29** | **.001** | .002 | -1.62 | .214 | .000 | 2.23 | .226 | .001 | -0.89 | .586 | .000 | 0.63 | .584 | .000 |
| Left pars opercularis | -1.03 | .310 | .000 | 0.03 | .977 | .000 | 0.10 | .965 | .000 | -0.14 | .943 | .000 | 0.71 | .539 | .000 |
| Left pars orbitalis | **-4.18** | **.000** | .003 | -0.16 | .887 | .000 | -0.15 | .965 | .000 | -1.14 | .455 | .000 | -0.13 | .898 | .000 |
| Left pars triangularis | -0.92 | .364 | .000 | -1.95 | .139 | .001 | 0.66 | .880 | .000 | -2.04 | .244 | .000 | 0.54 | .630 | .000 |
| Left pericalcarine | **-3.92** | **.000** | .002 | 0.33 | .798 | .000 | 1.38 | .615 | .000 | -1.02 | .512 | .001 | 1.87 | .091 | .001 |
| Left postcentral | **-4.34** | **.000** | .003 | -2.32 | .096 | .001 | 1.31 | .615 | .000 | -2.52 | .116 | .002 | **3.45** | **.005** | .002 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Left posterior cingulate | **-4.33** | **.000** | .003 | -2.05 | .122 | .001 | 0.38 | .965 | .000 | -1.68 | .306 | .001 | 1.90 | .090 | .001 |
| Left precentral | **-6.19** | **.000** | .005 | -1.62 | .214 | .000 | 1.27 | .615 | .000 | -2.46 | .122 | .001 | **2.36** | **.044** | .001 |
| Left precuneus | **-5.06** | **.000** | .003 | -0.69 | .598 | .000 | 1.28 | .615 | .000 | -1.45 | .367 | .001 | 1.88 | .091 | .001 |
| Left rostral anterior cingulate | **-3.10** | **.002** | .002 | -0.62 | .640 | .000 | 2.42 | .199 | .001 | -0.23 | .887 | .003 | **3.98** | **.000** | .003 |
| Left rostral middle frontal | **-6.66** | **.000** | .006 | -2.07 | .118 | .001 | 0.94 | .821 | .000 | -1.78 | .284 | .001 | 2.04 | .070 | .001 |
| Left superior frontal | **-5.31** | **.000** | .004 | -1.88 | .149 | .001 | 0.52 | .902 | .000 | -1.21 | .445 | .001 | **2.30** | **.047** | .001 |
| Left superior parietal | **-3.98** | **.000** | .002 | 0.22 | .866 | .000 | 0.63 | .880 | .000 | -1.58 | .334 | .001 | 1.91 | .089 | .001 |
| Left superior temporal | **-6.42** | **.000** | .006 | -2.32 | .096 | .001 | 0.60 | .880 | .000 | -1.64 | .306 | .001 | **2.27** | **.047** | .001 |
| Left supramarginal | **-4.51** | **.000** | .003 | **-3.03** | **.029** | .001 | -0.19 | .965 | .000 | -2.87 | .087 | .000 | 1.26 | .260 | .000 |
| Left frontal pole | **-4.31** | **.000** | .003 | -0.46 | .716 | .000 | -0.57 | .902 | .000 | 0.54 | .746 | .000 | 0.24 | .830 | .000 |
| Left temporal pole | **-4.10** | **.000** | .003 | -1.50 | .229 | .000 | -0.31 | .965 | .000 | -1.05 | .498 | .000 | 0.20 | .848 | .000 |
| Left transverse temporal | **-4.62** | **.000** | .003 | -0.85 | .514 | .000 | -0.35 | .965 | .000 | 1.30 | .444 | .000 | 0.45 | .681 | .000 |
| Left insula | **-3.92** | **.000** | .002 | -2.15 | .116 | .001 | 1.36 | .615 | .000 | 1.14 | .455 | .001 | **2.90** | **.014** | .001 |
| Right banks of superior temporal sulcus | **-3.26** | **.001** | .002 | -1.64 | .212 | .000 | 1.68 | .476 | .000 | -1.67 | .306 | .001 | **2.48** | **.033** | .001 |
| Right caudal anterior cingulate | -1.87 | .064 | .001 | -2.30 | .096 | .001 | 0.09 | .965 | .000 | -1.52 | .356 | .002 | **3.53** | **.000** | .002 |
| Right caudal middle frontal | **-3.77** | **.000** | .002 | 0.22 | .866 | .000 | 0.52 | .902 | .000 | 1.51 | .356 | .000 | 1.47 | .192 | .000 |
| Right cuneus | **-4.38** | **.000** | .003 | 1.02 | .419 | .000 | 0.27 | .965 | .000 | -0.28 | .858 | .001 | **2.32** | **.045** | .001 |
| Right entorhinal | **-3.63** | **.000** | .002 | -0.47 | .716 | .000 | -0.78 | .880 | .000 | -2.83 | .087 | .002 | **4.02** | **.000** | .002 |
| Right fusiform | **-5.38** | **.000** | .004 | **-2.90** | **.039** | .001 | 2.04 | .332 | .001 | -0.39 | .795 | .001 | **2.84** | **.014** | .001 |
| Right inferior parietal | **-4.94** | **.000** | .003 | -2.18 | .113 | .001 | 0.61 | .880 | .000 | -0.88 | .586 | .001 | 1.98 | .079 | .001 |
| Right inferior temporal | **-4.45** | **.000** | .003 | **-3.18** | **.022** | .002 | 1.10 | .720 | .000 | -1.82 | .277 | .001 | **2.63** | **.025** | .001 |
| Right isthmus cingulate | **-2.08** | **.040** | .001 | -0.15 | .887 | .000 | 0.50 | .906 | .000 | -1.64 | .306 | .000 | 1.30 | .249 | .000 |
| Right lateral occipital | **-4.03** | **.000** | .002 | -1.67 | .212 | .000 | -0.21 | .965 | .000 | -0.63 | .697 | .001 | 2.14 | .059 | .001 |
| Right lateral orbitofrontal | **-5.09** | **.000** | .003 | -0.18 | .887 | .000 | 0.69 | .880 | .000 | -0.79 | .622 | .001 | **2.77** | **.019** | .001 |
| Right lingual | **-5.01** | **.000** | .004 | 0.93 | .474 | .000 | 0.33 | .965 | .000 | -0.74 | .641 | .001 | **3.05** | **.010** | .001 |
| Right medial orbitofrontal | **-2.75** | **.007** | .001 | -1.53 | .227 | .000 | 0.86 | .880 | .000 | -1.27 | .445 | .002 | **3.82** | **.000** | .002 |
| Right middle temporal | **-6.20** | **.000** | .005 | -1.65 | .212 | .000 | 1.77 | .472 | .000 | -1.44 | .367 | .001 | **2.41** | **.038** | .001 |
| Right parahippocampal | **-6.91** | **.000** | .006 | -2.53 | .068 | .001 | 2.22 | .226 | .001 | -1.90 | .275 | .000 | 1.87 | .091 | .000 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right paracentral | **-3.51** | **.000** | .002 | -1.52 | .227 | .000 | 1.30 | .615 | .000 | -1.23 | .445 | .000 | 1.12 | .318 | .000 |
| Right pars opercularis | **-3.97** | **.000** | .002 | 0.59 | .646 | .000 | -0.17 | .965 | .000 | 0.22 | .887 | .000 | 0.53 | .630 | .000 |
| Right pars orbitalis | **-4.31** | **.000** | .003 | -1.02 | .419 | .000 | -0.61 | .880 | .000 | -1.85 | .277 | .000 | 0.68 | .554 | .000 |
| Right pars triangularis | -0.28 | .778 | .000 | -1.43 | .253 | .000 | 0.28 | .965 | .000 | -2.11 | .244 | .001 | 1.96 | .081 | .001 |
| Right pericalcarine | **-5.62** | **.000** | .005 | 1.11 | .382 | .000 | 0.04 | .972 | .000 | -0.57 | .727 | .001 | **2.96** | **.012** | .001 |
| Right postcentral | **-3.77** | **.000** | .002 | -2.43 | .082 | .001 | 2.22 | .226 | .001 | -2.16 | .244 | .001 | **2.65** | **.024** | .001 |
| Right posterior cingulate | -1.90 | .061 | .001 | -2.60 | .060 | .001 | 0.05 | .972 | .000 | -2.66 | .099 | .002 | **3.86** | **.000** | .002 |
| Right precentral | **-5.88** | **.000** | .005 | -2.17 | .113 | .001 | 0.16 | .965 | .000 | -1.49 | .356 | .000 | 1.30 | .249 | .000 |
| Right precuneus | **-5.16** | **.000** | .003 | -1.58 | .222 | .000 | 2.55 | .199 | .001 | -0.94 | .575 | .000 | 1.25 | .263 | .000 |
| Right rostral anterior cingulate | **-3.32** | **.001** | .002 | 0.52 | .694 | .000 | 0.71 | .880 | .000 | 1.20 | .446 | .001 | 2.05 | .070 | .001 |
| Right rostral middle frontal | **-6.56** | **.000** | .006 | -1.06 | .404 | .000 | 0.17 | .965 | .000 | -1.43 | .367 | .001 | **2.29** | **.047** | .001 |
| Right superior frontal | **-5.48** | **.000** | .004 | -2.08 | .118 | .001 | 1.65 | .483 | .000 | -1.22 | .445 | .000 | 0.92 | .409 | .000 |
| Right superior parietal | **-4.81** | **.000** | .003 | 0.45 | .716 | .000 | 1.01 | .759 | .000 | -0.52 | .754 | .000 | 1.36 | .229 | .000 |
| Right superior temporal | **-7.11** | **.000** | .008 | -1.89 | .149 | .001 | 1.17 | .679 | .000 | -0.86 | .592 | .000 | 1.11 | .318 | .000 |
| Right supramarginal | -1.96 | .053 | .001 | **-2.87** | **.039** | .001 | 0.54 | .902 | .000 | -2.04 | .244 | .001 | 2.13 | .060 | .001 |
| Right frontal pole | **-4.09** | **.000** | .002 | -1.19 | .351 | .000 | 1.11 | .720 | .000 | 0.69 | .665 | .000 | -1.73 | .120 | .000 |
| Right temporal pole | **-4.13** | **.000** | .003 | 0.59 | .646 | .000 | -0.23 | .965 | .000 | -0.81 | .618 | .000 | 0.95 | .404 | .000 |
| Right transverse temporal | **-4.26** | **.000** | .003 | -0.78 | .560 | .000 | -0.21 | .965 | .000 | -0.76 | .640 | .000 | 0.37 | .737 | .000 |
| Right insula | **-3.32** | **.001** | .001 | -1.37 | .270 | .000 | 1.57 | .522 | .000 | -0.81 | .618 | .003 | **4.57** | **.000** | .003 |
| Left cerebellum cortex | **-7.82** | **.000** | .008 | -2.04 | .122 | .001 | 2.43 | .199 | .001 | -1.88 | .275 | .001 | **2.92** | **.012** | .001 |
| Left thalamus proper | **-6.12** | **.000** | .005 | -1.98 | .135 | .001 | 1.05 | .752 | .000 | -0.40 | .795 | .002 | **3.79** | **.000** | .002 |
| Left caudate | **-6.12** | **.000** | .006 | -1.51 | .228 | .000 | 0.68 | .880 | .000 | -1.18 | .446 | .001 | 1.74 | .119 | .001 |
| Left putamen | **-5.38** | **.000** | .004 | **-3.13** | **.029** | .002 | 0.72 | .880 | .000 | **-4.76** | **.000** | .003 | **4.34** | **.000** | .003 |
| Left pallidum | **-4.12** | **.000** | .003 | -2.61 | .060 | .001 | 0.40 | .965 | .000 | 1.17 | .446 | .001 | **2.71** | **.022** | .001 |
| Left hippocampus | **-4.91** | **.000** | .003 | -2.08 | .118 | .001 | 0.84 | .880 | .000 | -1.24 | .445 | .002 | **3.67** | **.000** | .002 |
| Left amygdala | **-4.27** | **.000** | .003 | -2.63 | .060 | .001 | 0.78 | .880 | .000 | -1.81 | .277 | .001 | **2.45** | **.034** | .001 |
| Left accumbens area | **-6.24** | **.000** | .005 | -1.74 | .190 | .000 | 0.36 | .965 | .000 | -2.57 | .109 | .002 | **3.77** | **.000** | .002 |
| Left ventral diencephalon | **-3.92** | **.000** | .002 | -1.81 | .169 | .000 | 2.53 | .199 | .001 | -0.44 | .778 | .000 | 1.63 | .145 | .000 |
| Right cerebellum cortex | **-5.15** | **.000** | .004 | -2.19 | .113 | .001 | -0.35 | .965 | .000 | -1.73 | .305 | .003 | **4.60** | **.000** | .003 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right thalamus proper | **-8.20** | **.000** | .008 | -1.71 | .201 | .000 | 2.46 | .199 | .001 | -1.64 | .306 | .001 | **2.99** | **.012** | .001 |
| Right caudate | **-4.69** | **.000** | .003 | -1.45 | .246 | .000 | 0.49 | .906 | .000 | -0.38 | .795 | .003 | **4.55** | **.000** | .003 |
| Right putamen | **-5.97** | **.000** | .006 | -1.18 | .351 | .000 | 0.70 | .880 | .000 | -0.09 | .960 | .000 | 1.51 | .181 | .000 |
| Right pallidum | **-5.92** | **.000** | .005 | **-3.87** | **.000** | .002 | 0.10 | .965 | .000 | -2.65 | .099 | .001 | **2.60** | **.025** | .001 |
| Right hippocampus | **-5.43** | **.000** | .004 | -0.91 | .481 | .000 | 0.62 | .880 | .000 | -0.34 | .816 | .004 | **5.10** | **.000** | .004 |
| Right amygdala | **-5.53** | **.000** | .004 | **-4.20** | **.000** | .003 | 1.84 | .435 | .000 | **-3.27** | **.044** | .001 | **2.84** | **.017** | .001 |
| Right accumbens area | **-4.49** | **.000** | .003 | -2.07 | .118 | .001 | 1.21 | .655 | .000 | -1.26 | .445 | .000 | 1.44 | .201 | .000 |
| Right ventral diencephalon | **-5.53** | **.000** | .004 | -1.88 | .149 | .001 | 1.69 | .476 | .000 | -0.01 | .999 | .002 | **3.18** | **.005** | .002 |
| Brain stem | **-6.21** | **.000** | .006 | -1.59 | .222 | .000 | 0.09 | .965 | .000 | -0.90 | .586 | .004 | **4.99** | **.000** | .004 |

*Note*. $N$ = 9,818. Coefficients in bold are significant after FDR correction (adopting a 5% false discovery rate) for 87 tests

**Table S7.** Results examining the relationship between regional cortical thickness and environmental stress factors identified by bifactor modeling.

| Brain region | General Environmental Stress | | | Family Dynamics | | | Interpersonal Support | | | Neighborhood SES Deprivation | | | Urbanicity | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ |
| Left banks of superior temporal sulcus | **-2.72** | **.040** | .001 | -0.79 | .696 | .000 | -1.16 | .709 | .000 | -0.07 | .975 | .000 | -0.51 | .788 | .000 |
| Left caudal anterior cingulate | -0.88 | .610 | .000 | -1.44 | .586 | .000 | 0.07 | .942 | .000 | 0.78 | .736 | .001 | 2.57 | .062 | .001 |
| Left caudal middle frontal | -0.99 | .551 | .000 | 0.09 | .971 | .000 | -0.96 | .793 | .000 | **-4.80** | **.000** | .000 | -0.38 | .863 | .000 |
| Left cuneus | **-3.89** | **.000** | .002 | 1.15 | .657 | .000 | -0.36 | .932 | .000 | -0.42 | .851 | .000 | -0.85 | .690 | .000 |
| Left entorhinal | 0.82 | .627 | .000 | 0.32 | .892 | .000 | -0.22 | .932 | .000 | 0.93 | .630 | .003 | **4.03** | **.000** | .003 |
| Left fusiform | -1.14 | .525 | .000 | 1.00 | .657 | .000 | -0.84 | .793 | .000 | 1.67 | .269 | .000 | 0.31 | .875 | .000 |
| Left inferior parietal | 0.26 | .886 | .000 | 2.37 | .418 | .001 | -2.11 | .298 | .001 | 2.24 | .106 | .000 | -0.26 | .886 | .000 |
| Left inferior temporal | -0.85 | .610 | .000 | -0.17 | .971 | .000 | -0.12 | .932 | .000 | 1.13 | .514 | .000 | -0.19 | .904 | .000 |
| Left isthmus cingulate | 0.78 | .640 | .000 | -0.05 | .971 | .000 | 1.71 | .471 | .000 | 2.53 | .058 | .000 | 0.82 | .690 | .000 |
| Left lateral occipital | -2.03 | .136 | .000 | 1.29 | .640 | .000 | -0.12 | .932 | .000 | 0.09 | .975 | .000 | 0.23 | .886 | .000 |
| Left lateral orbitofrontal | **-2.83** | **.034** | .001 | 1.58 | .521 | .000 | -0.29 | .932 | .000 | -0.77 | .736 | .001 | 2.46 | .078 | .001 |
| Left lingual | **-4.42** | **.000** | .003 | 0.94 | .657 | .000 | -0.18 | .932 | .000 | -1.86 | .214 | .000 | 0.61 | .728 | .000 |
| Left medial orbitofrontal | -1.08 | .527 | .000 | -0.97 | .657 | .000 | -1.66 | .471 | .000 | 0.29 | .864 | .001 | 2.38 | .083 | .001 |
| Left middle temporal | -1.03 | .527 | .000 | 0.64 | .736 | .000 | -0.45 | .889 | .000 | -1.67 | .269 | .000 | 0.00 | .997 | .000 |
| Left parahippocampal | **-4.57** | **.000** | .003 | 0.82 | .696 | .000 | -0.83 | .793 | .000 | -1.07 | .550 | .000 | 0.66 | .728 | .000 |
| Left paracentral | -2.18 | .107 | .001 | -1.15 | .657 | .000 | 0.96 | .793 | .000 | **-3.78** | **.000** | .000 | -1.69 | .269 | .000 |
| Left pars opercularis | -0.44 | .851 | .000 | 1.38 | .601 | .000 | -0.84 | .793 | .000 | -0.24 | .891 | .001 | -2.02 | .154 | .001 |
| Left pars orbitalis | 0.03 | .987 | .000 | 2.56 | .418 | .001 | -1.53 | .500 | .000 | 0.56 | .787 | .000 | -1.02 | .598 | .000 |
| Left pars triangularis | 0.37 | .865 | .000 | 0.18 | .971 | .000 | -0.65 | .873 | .000 | -1.17 | .503 | .000 | -1.18 | .528 | .000 |
| Left pericalcarine | **-2.66** | **.042** | .001 | 0.51 | .786 | .000 | 0.61 | .873 | .000 | -0.93 | .630 | .000 | 0.63 | .728 | .000 |
| Left postcentral | -2.03 | .136 | .001 | -0.24 | .948 | .000 | -0.09 | .942 | .000 | -1.75 | .262 | .000 | -1.86 | .204 | .000 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Left posterior cingulate | -0.61 | .728 | .000 | -1.47 | .586 | .000 | 1.06 | .730 | .000 | -0.84 | .697 | .000 | 0.36 | .863 | .000 |
| Left precentral | -2.41 | .068 | .001 | -0.35 | .885 | .000 | -1.53 | .500 | .000 | **-4.39** | **.000** | .000 | -1.73 | .260 | .000 |
| Left precuneus | -1.20 | .495 | .000 | 2.03 | .418 | .001 | 0.28 | .932 | .000 | -1.23 | .472 | .000 | 0.11 | .928 | .000 |
| Left rostral anterior cingulate | -0.02 | .987 | .000 | 2.18 | .418 | .001 | -0.29 | .932 | .000 | 0.44 | .846 | .002 | **3.31** | **.010** | .002 |
| Left rostral middle frontal | -1.03 | .527 | .000 | 0.94 | .657 | .000 | -1.11 | .709 | .000 | **-3.61** | **.000** | .000 | -0.35 | .863 | .000 |
| Left superior frontal | -0.86 | .610 | .000 | -0.01 | .996 | .000 | -1.92 | .416 | .001 | **-3.51** | **.000** | .000 | 0.80 | .690 | .000 |
| Left superior parietal | -1.19 | .495 | .000 | 0.99 | .657 | .000 | -0.62 | .873 | .000 | -0.56 | .787 | .000 | 0.93 | .651 | .000 |
| Left superior temporal | -2.17 | .107 | .001 | 0.72 | .701 | .000 | -1.10 | .709 | .000 | -1.87 | .214 | .000 | 1.12 | .528 | .000 |
| Left supramarginal | -0.32 | .866 | .000 | 0.35 | .885 | .000 | -1.80 | .471 | .000 | -2.50 | .058 | .001 | **-3.31** | **.010** | .001 |
| Left frontal pole | -0.04 | .987 | .000 | 2.13 | .418 | .001 | -1.68 | .471 | .000 | -0.05 | .975 | .000 | -1.22 | .523 | .000 |
| Left temporal pole | -1.08 | .527 | .000 | 0.99 | .657 | .000 | -0.83 | .793 | .000 | -0.60 | .787 | .000 | 0.99 | .612 | .000 |
| Left transverse temporal | -2.49 | .059 | .001 | 1.95 | .434 | .001 | -0.43 | .889 | .000 | 1.66 | .269 | .000 | 0.61 | .728 | .000 |
| Left insula | -1.99 | .145 | .001 | 1.60 | .521 | .000 | -0.44 | .889 | .000 | 1.23 | .472 | .003 | **4.07** | **.000** | .003 |
| Right banks of superior temporal sulcus | -1.33 | .427 | .000 | -0.37 | .885 | .000 | 0.16 | .932 | .000 | -2.19 | .116 | .000 | 1.28 | .509 | .000 |
| Right caudal anterior cingulate | -1.07 | .527 | .000 | -0.07 | .971 | .000 | -1.28 | .615 | .000 | 0.36 | .860 | .001 | **2.92** | **.020** | .001 |
| Right caudal middle frontal | -0.26 | .886 | .000 | -1.17 | .657 | .000 | -2.81 | .204 | .001 | -1.88 | .214 | .000 | 0.41 | .863 | .000 |
| Right cuneus | **-3.19** | **.010** | .002 | 2.02 | .418 | .001 | -0.25 | .932 | .000 | 0.01 | .996 | .000 | 1.24 | .522 | .000 |
| Right entorhinal | 0.37 | .865 | .000 | -0.63 | .736 | .000 | -1.37 | .581 | .000 | 0.13 | .956 | .002 | **3.14** | **.017** | .002 |
| Right fusiform | -1.52 | .322 | .000 | -0.51 | .786 | .000 | -0.44 | .889 | .000 | 0.38 | .857 | .001 | 2.07 | .154 | .001 |
| Right inferior parietal | -0.35 | .865 | .000 | 1.74 | .493 | .000 | -1.33 | .599 | .000 | **2.75** | **.041** | .000 | 0.12 | .928 | .000 |
| Right inferior temporal | -1.29 | .447 | .000 | 0.69 | .710 | .000 | 0.53 | .889 | .000 | -0.99 | .608 | .000 | -1.15 | .528 | .000 |
| Right isthmus cingulate | -0.08 | .987 | .000 | 0.61 | .736 | .000 | 0.18 | .932 | .000 | 0.57 | .787 | .000 | 0.27 | .886 | .000 |
| Right lateral occipital | **-2.84** | **.034** | .001 | 0.82 | .696 | .000 | -0.16 | .932 | .000 | -1.53 | .332 | .001 | 2.43 | .078 | .001 |
| Right lateral orbitofrontal | **-3.67** | **.000** | .002 | 2.12 | .418 | .001 | -0.13 | .932 | .000 | -0.51 | .804 | .003 | **4.55** | **.000** | .003 |
| Right lingual | **-3.73** | **.000** | .002 | 1.05 | .657 | .000 | -0.44 | .889 | .000 | -1.22 | .472 | .000 | 1.17 | .528 | .000 |
| Right medial orbitofrontal | 0.06 | .987 | .000 | 0.83 | .696 | .000 | -0.87 | .793 | .000 | **-3.69** | **.000** | .002 | **3.75** | **.000** | .002 |
| Right middle temporal | -1.66 | .256 | .000 | 1.63 | .521 | .000 | -0.73 | .851 | .000 | 1.41 | .384 | .000 | -1.55 | .343 | .000 |
| Right parahippocampal | **-2.82** | **.034** | .001 | -0.74 | .701 | .000 | -0.90 | .793 | .000 | -2.54 | .058 | .000 | 0.66 | .728 | .000 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right paracentral | -2.34 | .076 | .001 | -0.75 | .701 | .000 | 0.47 | .889 | .000 | **-2.67** | **.049** | .000 | -0.69 | .728 | .000 |
| Right pars opercularis | -0.88 | .610 | .000 | 1.29 | .640 | .000 | -2.45 | .298 | .001 | -1.51 | .332 | .001 | 1.94 | .177 | .001 |
| Right pars orbitalis | -0.34 | .865 | .000 | 0.79 | .696 | .000 | -2.73 | .204 | .001 | 0.56 | .787 | .000 | 0.15 | .920 | .000 |
| Right pars triangularis | -0.17 | .936 | .000 | 1.77 | .493 | .000 | -1.42 | .562 | .000 | -1.35 | .415 | .000 | 0.73 | .728 | .000 |
| Right pericalcarine | **-4.41** | **.000** | .003 | 0.94 | .657 | .000 | 0.25 | .932 | .000 | -0.64 | .787 | .000 | 0.80 | .690 | .000 |
| Right postcentral | -1.69 | .250 | .000 | -0.07 | .971 | .000 | 0.54 | .889 | .000 | -1.65 | .269 | .001 | -2.05 | .154 | .001 |
| Right posterior cingulate | -0.37 | .865 | .000 | -0.09 | .971 | .000 | -2.32 | .298 | .001 | -0.73 | .737 | .000 | -0.63 | .728 | .000 |
| Right precentral | -1.42 | .381 | .000 | -0.83 | .696 | .000 | -2.15 | .298 | .001 | **-2.88** | **.030** | .000 | 0.33 | .866 | .000 |
| Right precuneus | -1.75 | .224 | .000 | 1.71 | .493 | .000 | -0.66 | .873 | .000 | 0.38 | .857 | .000 | -1.28 | .509 | .000 |
| Right rostral anterior cingulate | -0.48 | .826 | .000 | 1.01 | .657 | .000 | -0.51 | .889 | .000 | 2.36 | .082 | .001 | **2.96** | **.020** | .001 |
| Right rostral middle frontal | -1.05 | .527 | .000 | -0.06 | .971 | .000 | -2.19 | .298 | .001 | **-4.63** | **.000** | .001 | 2.15 | .145 | .001 |
| Right superior frontal | -0.69 | .695 | .000 | -1.42 | .586 | .000 | -1.45 | .552 | .000 | **-3.25** | **.009** | .000 | 0.60 | .728 | .000 |
| Right superior parietal | -0.60 | .728 | .000 | 1.26 | .640 | .000 | -1.14 | .709 | .000 | 0.29 | .864 | .000 | -0.51 | .788 | .000 |
| Right superior temporal | **-2.74** | **.037** | .001 | 0.55 | .777 | .000 | -0.66 | .873 | .000 | -0.50 | .804 | .000 | -1.13 | .528 | .000 |
| Right supramarginal | 0.17 | .936 | .000 | 1.72 | .493 | .000 | -0.14 | .932 | .000 | -0.30 | .864 | .000 | -2.04 | .154 | .000 |
| Right frontal pole | 0.77 | .641 | .000 | -0.14 | .971 | .000 | 2.17 | .298 | .001 | -0.33 | .864 | .000 | -0.91 | .651 | .000 |
| Right temporal pole | -0.67 | .695 | .000 | 0.73 | .701 | .000 | -1.71 | .471 | .000 | -0.15 | .954 | .000 | -0.23 | .886 | .000 |
| Right transverse temporal | -2.51 | .058 | .001 | 0.95 | .657 | .000 | -1.54 | .500 | .000 | 0.59 | .787 | .000 | -1.41 | .435 | .000 |
| Right insula | -1.80 | .213 | .000 | 1.09 | .657 | .000 | 0.74 | .851 | .000 | 0.74 | .737 | .007 | **6.65** | **.000** | .007 |

*Note*. $N = 9{,}818$. Coefficients in bold are significant after FDR correction (adopting a 5% false discovery rate) for 68 tests

**Table S8.** Results examining the relationship between cortical and subcortical regional GMV and environmental stress factors identified by higher-order modeling.

| Brain region | General Environmental Stress | | | Family Dynamics | | | Interpersonal Support | | | Neighborhood SES Deprivation | | | Urbanicity | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ |
| Left banks of superior temporal sulcus | **-2.99** | **.003** | .002 | **-2.95** | **.015** | .002 | 1.39 | .525 | .000 | **-3.44** | **.001** | .003 | **2.97** | **.016** | .003 |
| Left caudal anterior cingulate | **-4.13** | **.000** | .003 | -1.93 | .094 | .001 | 2.04 | .305 | .001 | **-3.42** | **.001** | .002 | 1.25 | .318 | .000 |
| Left caudal middle frontal | **-4.73** | **.000** | .004 | 0.78 | .536 | .000 | 0.16 | .919 | .000 | **-4.73** | **.000** | .004 | 0.66 | .554 | .000 |
| Left cuneus | **-5.20** | **.000** | .004 | 0.46 | .736 | .000 | 0.15 | .919 | .000 | **-3.81** | **.000** | .003 | -0.80 | .476 | .000 |
| Left entorhinal | **-4.78** | **.000** | .003 | **-2.34** | **.047** | .001 | -0.65 | .826 | .000 | **-5.09** | **.000** | .004 | 2.33 | .056 | .001 |
| Left fusiform | **-5.14** | **.000** | .005 | -2.25 | .054 | .001 | 2.53 | .149 | .001 | **-4.98** | **.000** | .005 | 2.32 | .056 | .001 |
| Left inferior parietal | **-3.92** | **.000** | .003 | **-3.24** | **.009** | .002 | 1.65 | .435 | .000 | **-4.44** | **.000** | .004 | **3.50** | **.000** | .003 |
| Left inferior temporal | **-4.93** | **.000** | .004 | **-3.48** | **.000** | .002 | 1.10 | .667 | .000 | **-5.07** | **.000** | .005 | **3.26** | **.009** | .003 |
| Left isthmus cingulate | **-3.34** | **.001** | .002 | -1.90 | .097 | .001 | 1.42 | .525 | .000 | **-4.95** | **.000** | .005 | **4.29** | **.000** | .005 |
| Left lateral occipital | **-4.62** | **.000** | .003 | -1.39 | .233 | .000 | -0.15 | .919 | .000 | **-4.09** | **.000** | .003 | 0.92 | .439 | .000 |
| Left lateral orbitofrontal | **-3.55** | **.000** | .002 | -0.91 | .466 | .000 | 0.42 | .902 | .000 | **-4.53** | **.000** | .004 | **2.67** | **.032** | .002 |
| Left lingual | **-4.21** | **.000** | .003 | 0.21 | .875 | .000 | 2.53 | .149 | .001 | **-4.04** | **.000** | .003 | 1.05 | .391 | .000 |
| Left medial orbitofrontal | **-2.37** | **.019** | .001 | -1.77 | .120 | .001 | 0.82 | .817 | .000 | **-2.27** | **.024** | .001 | 1.40 | .259 | .000 |
| Left middle temporal | **-5.09** | **.000** | .004 | -1.61 | .158 | .000 | 1.83 | .370 | .000 | **-4.94** | **.000** | .005 | 1.88 | .116 | .001 |
| Left parahippocampal | **-6.81** | **.000** | .007 | **-4.25** | **.000** | .003 | 1.56 | .489 | .000 | **-5.50** | **.000** | .005 | 1.92 | .111 | .001 |
| Left paracentral | **-3.61** | **.000** | .002 | -1.86 | .105 | .001 | 2.26 | .209 | .001 | **-2.63** | **.010** | .002 | 0.63 | .567 | .000 |
| Left pars opercularis | -0.82 | .413 | .000 | -0.34 | .788 | .000 | 0.16 | .919 | .000 | -1.46 | .148 | .000 | 1.30 | .295 | .000 |
| Left pars orbitalis | **-4.29** | **.000** | .003 | -0.44 | .736 | .000 | -0.10 | .919 | .000 | **-4.13** | **.000** | .004 | 0.97 | .419 | .000 |
| Left pars triangularis | -1.90 | .059 | .001 | -2.21 | .056 | .001 | 0.64 | .826 | .000 | -1.42 | .157 | .000 | 1.01 | .412 | .000 |
| Left pericalcarine | **-3.80** | **.000** | .003 | -0.02 | .984 | .000 | 1.44 | .525 | .000 | **-3.62** | **.000** | .003 | 0.86 | .460 | .000 |
| Left postcentral | **-5.03** | **.000** | .004 | **-2.93** | **.015** | .001 | 1.41 | .525 | .000 | **-6.12** | **.000** | .007 | **3.93** | **.000** | .004 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Left posterior cingulate | **-5.12** | **.000** | .004 | **-2.43** | **.045** | .001 | 0.44 | .902 | .000 | **-4.69** | **.000** | .004 | 1.72 | .151 | .001 |
| Left precentral | **-6.46** | **.000** | .007 | -2.26 | .054 | .001 | 1.36 | .525 | .000 | **-6.86** | **.000** | .008 | **2.78** | **.027** | .002 |
| Left precuneus | **-4.85** | **.000** | .004 | -1.10 | .354 | .000 | 1.36 | .525 | .000 | **-4.58** | **.000** | .004 | 1.35 | .275 | .000 |
| Left rostral anterior cingulate | **-2.75** | **.007** | .001 | -1.23 | .299 | .000 | 2.54 | .149 | .001 | **-3.43** | **.001** | .002 | **2.49** | **.045** | .002 |
| Left rostral middle frontal | **-6.88** | **.000** | .008 | **-2.54** | **.035** | .001 | 0.99 | .752 | .000 | **-5.93** | **.000** | .006 | 1.19 | .333 | .000 |
| Left superior frontal | **-5.26** | **.000** | .005 | **-2.42** | **.045** | .001 | 0.60 | .839 | .000 | **-4.83** | **.000** | .004 | 1.63 | .177 | .001 |
| Left superior parietal | **-3.92** | **.000** | .003 | -0.16 | .906 | .000 | 0.67 | .826 | .000 | **-3.82** | **.000** | .003 | 0.80 | .476 | .000 |
| Left superior temporal | **-6.65** | **.000** | .007 | **-3.04** | **.012** | .001 | 0.69 | .826 | .000 | **-6.39** | **.000** | .007 | 2.39 | .053 | .002 |
| Left supramarginal | **-5.52** | **.000** | .005 | **-3.24** | **.009** | .002 | -0.20 | .919 | .000 | **-4.41** | **.000** | .004 | 1.18 | .333 | .000 |
| Left frontal pole | **-3.60** | **.000** | .002 | -0.78 | .536 | .000 | -0.52 | .857 | .000 | **-2.71** | **.008** | .002 | -0.03 | .975 | .000 |
| Left temporal pole | **-4.43** | **.000** | .004 | -1.78 | .120 | .001 | -0.29 | .919 | .000 | **-3.47** | **.001** | .003 | 0.42 | .705 | .000 |
| Left transverse temporal | **-3.62** | **.000** | .002 | -1.37 | .238 | .000 | -0.26 | .919 | .000 | **-2.59** | **.011** | .002 | 0.17 | .887 | .000 |
| Left insula | **-3.28** | **.001** | .002 | **-2.96** | **.015** | .001 | 1.49 | .525 | .000 | **-3.26** | **.001** | .002 | **2.45** | **.045** | .002 |
| Right banks of superior temporal sulcus | **-3.73** | **.000** | .003 | -2.08 | .070 | .001 | 1.74 | .408 | .000 | **-3.65** | **.000** | .003 | 2.26 | .061 | .002 |
| Right caudal anterior cingulate | **-2.33** | **.021** | .001 | **-2.87** | **.018** | .002 | 0.15 | .919 | .000 | **-2.93** | **.003** | .002 | **2.90** | **.019** | .003 |
| Right caudal middle frontal | **-2.57** | **.011** | .001 | -0.45 | .736 | .000 | 0.64 | .826 | .000 | **-2.34** | **.020** | .001 | 0.59 | .592 | .000 |
| Right cuneus | **-3.74** | **.000** | .003 | 0.59 | .653 | .000 | 0.35 | .919 | .000 | **-4.06** | **.000** | .004 | 1.13 | .359 | .000 |
| Right entorhinal | **-4.21** | **.000** | .003 | -0.76 | .536 | .000 | -0.71 | .826 | .000 | **-5.44** | **.000** | .006 | **3.04** | **.012** | .003 |
| Right fusiform | **-5.13** | **.000** | .004 | **-3.65** | **.000** | .002 | 2.14 | .253 | .001 | **-4.48** | **.000** | .004 | 2.29 | .058 | .001 |
| Right inferior parietal | **-4.83** | **.000** | .004 | **-2.74** | **.023** | .001 | 0.70 | .826 | .000 | **-4.66** | **.000** | .004 | 2.22 | .067 | .001 |
| Right inferior temporal | **-4.91** | **.000** | .004 | **-3.82** | **.000** | .002 | 1.17 | .633 | .000 | **-4.62** | **.000** | .004 | **2.64** | **.032** | .002 |
| Right isthmus cingulate | **-2.42** | **.016** | .001 | -0.48 | .735 | .000 | 0.55 | .857 | .000 | **-2.92** | **.005** | .002 | 1.71 | .151 | .001 |
| Right lateral occipital | **-3.93** | **.000** | .002 | -2.25 | .054 | .001 | -0.14 | .919 | .000 | **-3.75** | **.000** | .003 | 1.83 | .126 | .001 |
| Right lateral orbitofrontal | **-4.59** | **.000** | .004 | -0.76 | .536 | .000 | 0.82 | .817 | .000 | **-5.06** | **.000** | .005 | 2.16 | .071 | .001 |
| Right lingual | **-4.29** | **.000** | .003 | 0.39 | .770 | .000 | 0.46 | .902 | .000 | **-5.00** | **.000** | .005 | 1.93 | .111 | .001 |
| Right medial orbitofrontal | **-2.84** | **.005** | .001 | -2.18 | .061 | .001 | 0.95 | .761 | .000 | **-3.59** | **.000** | .003 | **2.90** | **.019** | .002 |
| Right middle temporal | **-6.14** | **.000** | .007 | -2.27 | .054 | .001 | 1.88 | .370 | .000 | **-6.18** | **.000** | .007 | **2.55** | **.040** | .002 |
| Right parahippocampal | **-7.04** | **.000** | .008 | **-2.80** | **.022** | .001 | 2.25 | .209 | .001 | **-5.51** | **.000** | .006 | 1.00 | .412 | .000 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right paracentral | **-3.91** | **.000** | .003 | -1.84 | .108 | .001 | 1.36 | .525 | .000 | **-4.11** | **.000** | .004 | 2.19 | .068 | .001 |
| Right pars opercularis | **-3.29** | **.001** | .002 | 0.32 | .796 | .000 | -0.10 | .919 | .000 | **-3.06** | **.002** | .002 | 0.15 | .890 | .000 |
| Right pars orbitalis | **-4.62** | **.000** | .004 | -1.18 | .320 | .000 | -0.58 | .840 | .000 | **-4.08** | **.000** | .004 | 0.86 | .460 | .000 |
| Right pars triangularis | -1.12 | .264 | .000 | -1.75 | .124 | .001 | 0.31 | .919 | .000 | **-2.43** | **.016** | .001 | **3.06** | **.012** | .003 |
| Right pericalcarine | **-4.87** | **.000** | .005 | 0.77 | .536 | .000 | 0.12 | .919 | .000 | **-5.03** | **.000** | .006 | 0.97 | .419 | .000 |
| Right postcentral | **-4.65** | **.000** | .003 | **-3.03** | **.012** | .002 | 2.31 | .209 | .001 | **-5.17** | **.000** | .005 | **3.34** | **.009** | .003 |
| Right posterior cingulate | **-2.77** | **.007** | .001 | **-3.16** | **.012** | .002 | 0.10 | .919 | .000 | **-3.56** | **.000** | .003 | **3.39** | **.009** | .003 |
| Right precentral | **-6.15** | **.000** | .006 | **-2.69** | **.025** | .001 | 0.24 | .919 | .000 | **-5.43** | **.000** | .005 | 1.36 | .275 | .000 |
| Right precuneus | **-4.95** | **.000** | .005 | -1.99 | .083 | .001 | 2.61 | .149 | .001 | **-3.91** | **.000** | .003 | 0.80 | .476 | .000 |
| Right rostral anterior cingulate | **-2.36** | **.019** | .001 | 0.07 | .961 | .000 | 0.83 | .817 | .000 | **-2.76** | **.007** | .002 | 1.20 | .332 | .000 |
| Right rostral middle frontal | **-6.53** | **.000** | .007 | -1.68 | .141 | .000 | 0.28 | .919 | .000 | **-6.31** | **.000** | .007 | 1.81 | .129 | .001 |
| Right superior frontal | **-5.94** | **.000** | .006 | **-2.40** | **.045** | .001 | 1.71 | .408 | .000 | **-4.74** | **.000** | .004 | 0.92 | .439 | .000 |
| Right superior parietal | **-4.22** | **.000** | .003 | -0.06 | .961 | .000 | 1.09 | .667 | .000 | **-3.70** | **.000** | .003 | 0.35 | .756 | .000 |
| Right superior temporal | **-7.27** | **.000** | .009 | **-2.38** | **.045** | .001 | 1.27 | .589 | .000 | **-6.04** | **.000** | .007 | 1.08 | .382 | .000 |
| Right supramarginal | **-2.81** | **.006** | .001 | **-3.39** | **.009** | .002 | 0.61 | .839 | .000 | **-3.40** | **.001** | .003 | **3.35** | **.009** | .003 |
| Right frontal pole | **-3.70** | **.000** | .002 | -1.46 | .207 | .000 | 1.13 | .658 | .000 | -1.58 | .117 | .001 | -1.21 | .332 | .000 |
| Right temporal pole | **-3.83** | **.000** | .003 | 0.34 | .788 | .000 | -0.18 | .919 | .000 | **-3.76** | **.000** | .003 | 0.76 | .494 | .000 |
| Right transverse temporal | **-4.32** | **.000** | .003 | -1.13 | .339 | .000 | -0.16 | .919 | .000 | **-3.65** | **.000** | .003 | 0.81 | .476 | .000 |
| Right insula | **-3.06** | **.002** | .002 | -2.13 | .062 | .001 | 1.70 | .408 | .000 | **-4.46** | **.000** | .004 | **4.07** | **.000** | .004 |
| Left cerebellum cortex | **-7.78** | **.000** | .010 | **-2.39** | **.045** | .001 | 2.52 | .149 | .001 | **-6.90** | **.000** | .008 | 1.56 | .194 | .001 |
| Left thalamus proper | **-5.79** | **.000** | .005 | **-2.76** | **.023** | .001 | 1.19 | .633 | .000 | **-5.64** | **.000** | .005 | **2.47** | **.045** | .002 |
| Left caudate | **-6.32** | **.000** | .007 | -1.96 | .089 | .001 | 0.80 | .818 | .000 | **-6.28** | **.000** | .007 | 2.18 | .068 | .001 |
| Left putamen | **-7.11** | **.000** | .008 | **-3.43** | **.009** | .002 | 0.76 | .826 | .000 | **-7.57** | **.000** | .009 | **3.45** | **.009** | .003 |
| Left pallidum | **-3.31** | **.001** | .002 | **-3.06** | **.012** | .002 | 0.53 | .857 | .000 | **-2.94** | **.003** | .002 | 1.85 | .123 | .001 |
| Left hippocampus | **-5.03** | **.000** | .004 | **-2.61** | **.031** | .001 | 0.96 | .761 | .000 | **-5.19** | **.000** | .005 | **2.72** | **.030** | .002 |
| Left amygdala | **-4.75** | **.000** | .004 | **-3.07** | **.012** | .002 | 0.85 | .817 | .000 | **-4.12** | **.000** | .004 | 1.91 | .111 | .001 |
| Left accumbens area | **-6.88** | **.000** | .006 | -2.14 | .062 | .001 | 0.43 | .902 | .000 | **-6.84** | **.000** | .007 | 2.37 | .054 | .001 |
| Left ventral diencephalon | **-3.88** | **.000** | .002 | -2.28 | .053 | .001 | 2.62 | .149 | .001 | **-3.64** | **.000** | .003 | 2.06 | .087 | .001 |
| Right cerebellum cortex | **-5.27** | **.000** | .005 | **-2.76** | **.023** | .001 | -0.23 | .919 | .000 | **-5.68** | **.000** | .006 | **3.03** | **.012** | .002 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right thalamus proper | **-7.91** | **.000** | .010 | -2.16 | .061 | .001 | 2.57 | .149 | .001 | **-7.17** | **.000** | .009 | 1.59 | .189 | .001 |
| Right caudate | **-4.15** | **.000** | .003 | **-2.40** | **.045** | .001 | 0.65 | .826 | .000 | **-5.12** | **.000** | .005 | **3.60** | **.000** | .003 |
| Right putamen | **-5.53** | **.000** | .006 | -1.67 | .141 | .001 | 0.83 | .817 | .000 | **-5.41** | **.000** | .006 | 1.92 | .111 | .001 |
| Right pallidum | **-6.90** | **.000** | .007 | **-4.14** | **.000** | .003 | 0.16 | .919 | .000 | **-5.94** | **.000** | .006 | 2.10 | .078 | .001 |
| Right hippocampus | **-4.86** | **.000** | .004 | -1.55 | .175 | .000 | 0.77 | .826 | .000 | **-5.56** | **.000** | .006 | **2.96** | **.016** | .002 |
| Right amygdala | **-6.54** | **.000** | .008 | **-4.60** | **.000** | .003 | 1.89 | .370 | .000 | **-5.50** | **.000** | .006 | 2.29 | .058 | .001 |
| Right accumbens area | **-4.96** | **.000** | .004 | **-2.34** | **.047** | .001 | 1.25 | .589 | .000 | **-3.89** | **.000** | .003 | 0.91 | .439 | .000 |
| Right ventral diencephalon | **-4.84** | **.000** | .004 | **-2.55** | **.035** | .001 | 1.83 | .370 | .000 | **-4.72** | **.000** | .005 | **2.61** | **.034** | .002 |
| Brain stem | **-5.82** | **.000** | .006 | -2.23 | .055 | .001 | 0.25 | .919 | .000 | **-6.45** | **.000** | .008 | **3.08** | **.012** | .003 |

*Note*. $N$ = 9,818. Coefficients in bold are significant after FDR correction (adopting a 5% false discovery rate) for 87 tests

**Table S9.** Results examining the relationship between regional cortical thickness and environmental stress factors identified by higher-order modeling.

| Brain region | General Environmental Stress | | | Family Dynamics | | | Interpersonal Support | | | Neighborhood SES Deprivation | | | Urbanicity | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ |
| Left banks of superior temporal sulcus | **-2.73** | **.026** | .001 | -0.87 | .720 | .000 | -1.16 | .691 | .000 | -2.07 | .095 | .001 | 0.04 | .999 | .000 |
| Left caudal anterior cingulate | -0.41 | .784 | .000 | -1.71 | .499 | .001 | 0.14 | .940 | .000 | -1.05 | .464 | .000 | 1.87 | .468 | .001 |
| Left caudal middle frontal | **-2.99** | **.019** | .002 | 0.45 | .829 | .000 | -1.06 | .733 | .000 | **-2.99** | **.012** | .002 | 0.41 | .903 | .000 |
| Left cuneus | **-3.74** | **.000** | .003 | 1.21 | .689 | .000 | -0.36 | .940 | .000 | **-2.69** | **.020** | .002 | -1.07 | .736 | .000 |
| Left entorhinal | 1.62 | .212 | .001 | 0.04 | .989 | .000 | -0.13 | .940 | .000 | -0.24 | .903 | .000 | 2.25 | .272 | .001 |
| Left fusiform | -0.11 | .911 | .000 | 0.68 | .720 | .000 | -0.78 | .827 | .000 | -0.88 | .540 | .000 | 0.67 | .857 | .000 |
| Left inferior parietal | 1.78 | .176 | .000 | 1.97 | .499 | .001 | -2.03 | .355 | .000 | 0.22 | .903 | .000 | 0.48 | .903 | .000 |
| Left inferior temporal | -0.33 | .829 | .000 | -0.47 | .829 | .000 | -0.09 | .940 | .000 | -0.39 | .791 | .000 | 0.39 | .903 | .000 |
| Left isthmus cingulate | 1.83 | .163 | .001 | -0.41 | .829 | .000 | 1.78 | .464 | .000 | 1.02 | .464 | .000 | 1.03 | .736 | .000 |
| Left lateral occipital | -1.75 | .181 | .000 | 1.06 | .714 | .000 | -0.10 | .940 | .000 | -1.90 | .121 | .001 | 0.16 | .961 | .000 |
| Left lateral orbitofrontal | **-2.48** | **.038** | .001 | 1.48 | .630 | .000 | -0.24 | .940 | .000 | **-2.87** | **.014** | .002 | 0.48 | .903 | .000 |
| Left lingual | **-4.94** | **.000** | .004 | 0.97 | .714 | .000 | -0.16 | .940 | .000 | **-4.69** | **.000** | .004 | 0.43 | .903 | .000 |
| Left medial orbitofrontal | -0.72 | .643 | .000 | -1.19 | .689 | .000 | -1.62 | .476 | .000 | -1.00 | .467 | .000 | 1.01 | .736 | .000 |
| Left middle temporal | -1.71 | .185 | .000 | 0.73 | .720 | .000 | -0.48 | .940 | .000 | -1.87 | .128 | .001 | 0.17 | .961 | .000 |
| Left parahippocampal | **-4.49** | **.000** | .004 | 0.70 | .720 | .000 | -0.79 | .827 | .000 | **-4.51** | **.000** | .004 | 0.62 | .881 | .000 |
| Left paracentral | **-3.98** | **.000** | .003 | -0.84 | .720 | .000 | 0.85 | .814 | .000 | -2.25 | .063 | .001 | -0.82 | .814 | .000 |
| Left pars opercularis | -0.50 | .746 | .000 | 1.49 | .630 | .000 | -0.87 | .814 | .000 | -0.09 | .940 | .000 | -1.25 | .736 | .000 |
| Left pars orbitalis | 0.64 | .687 | .000 | 2.52 | .499 | .001 | -1.52 | .487 | .000 | 0.05 | .962 | .000 | -0.74 | .814 | .000 |
| Left pars triangularis | -0.26 | .845 | .000 | 0.36 | .841 | .000 | -0.69 | .869 | .000 | -0.39 | .791 | .000 | 0.00 | .999 | .000 |
| Left pericalcarine | **-2.76** | **.026** | .001 | 0.44 | .829 | .000 | 0.63 | .872 | .000 | **-2.92** | **.012** | .002 | 0.74 | .814 | .000 |
| Left postcentral | **-2.87** | **.021** | .001 | -0.20 | .937 | .000 | -0.11 | .940 | .000 | **-2.78** | **.016** | .001 | 0.61 | .881 | .000 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Left posterior cingulate | -1.20 | .401 | .000 | -1.41 | .669 | .000 | 1.03 | .733 | .000 | -0.73 | .632 | .000 | 0.50 | .903 | .000 |
| Left precentral | **-4.26** | **.000** | .003 | -0.14 | .945 | .000 | -1.62 | .476 | .000 | **-3.45** | **.006** | .002 | -0.21 | .961 | .000 |
| Left precuneus | -1.33 | .340 | .000 | 2.04 | .499 | .001 | 0.28 | .940 | .000 | -1.71 | .171 | .001 | -0.02 | .999 | .000 |
| Left rostral anterior cingulate | 0.98 | .483 | .000 | 1.82 | .499 | .001 | -0.18 | .940 | .000 | -1.60 | .202 | .001 | 2.41 | .218 | .002 |
| Left rostral middle frontal | **-2.50** | **.037** | .001 | 1.19 | .689 | .000 | -1.18 | .691 | .000 | **-2.76** | **.018** | .001 | 0.31 | .916 | .000 |
| Left superior frontal | -2.20 | .076 | .001 | 0.18 | .937 | .000 | -1.98 | .355 | .001 | **-2.78** | **.016** | .002 | 1.10 | .736 | .000 |
| Left superior parietal | -1.13 | .422 | .000 | 0.90 | .720 | .000 | -0.61 | .879 | .000 | -1.53 | .216 | .000 | 0.27 | .927 | .000 |
| Left superior temporal | **-2.62** | **.034** | .001 | 0.58 | .763 | .000 | -1.08 | .732 | .000 | **-3.69** | **.000** | .003 | 1.82 | .469 | .001 |
| Left supramarginal | -1.72 | .185 | .000 | 0.82 | .720 | .000 | -1.92 | .374 | .000 | -0.57 | .701 | .000 | -1.72 | .532 | .001 |
| Left frontal pole | 0.23 | .856 | .000 | 2.09 | .499 | .001 | -1.68 | .476 | .000 | -0.16 | .926 | .000 | -0.73 | .814 | .000 |
| Left temporal pole | -1.04 | .461 | .000 | 0.97 | .714 | .000 | -0.81 | .827 | .000 | -1.80 | .144 | .001 | 0.73 | .814 | .000 |
| Left transverse temporal | -1.25 | .379 | .000 | 1.72 | .499 | .001 | -0.35 | .940 | .000 | -1.63 | .193 | .001 | -0.05 | .999 | .000 |
| Left insula | -0.61 | .693 | .000 | 1.09 | .714 | .000 | -0.30 | .940 | .000 | **-2.74** | **.018** | .002 | 2.55 | .187 | .002 |
| Right banks of superior temporal sulcus | -2.19 | .076 | .001 | -0.35 | .841 | .000 | 0.16 | .940 | .000 | **-2.64** | **.022** | .001 | 1.41 | .716 | .001 |
| Right caudal anterior cingulate | -0.59 | .696 | .000 | -0.24 | .918 | .000 | -1.24 | .665 | .000 | -1.36 | .290 | .000 | 1.17 | .736 | .000 |
| Right caudal middle frontal | -1.13 | .422 | .000 | -1.24 | .689 | .000 | -2.85 | .238 | .001 | -1.56 | .207 | .001 | 1.24 | .736 | .000 |
| Right cuneus | **-2.53** | **.036** | .001 | 1.77 | .499 | .001 | -0.19 | .940 | .000 | **-3.23** | **.006** | .002 | 0.74 | .814 | .000 |
| Right entorhinal | 0.72 | .643 | .000 | -0.87 | .720 | .000 | -1.30 | .656 | .000 | -0.65 | .677 | .000 | 1.98 | .400 | .001 |
| Right fusiform | -1.11 | .422 | .000 | -0.96 | .714 | .000 | -0.38 | .940 | .000 | -1.59 | .202 | .000 | 1.32 | .736 | .000 |
| Right inferior parietal | 1.34 | .340 | .000 | 1.37 | .669 | .000 | -1.25 | .665 | .000 | 0.82 | .573 | .000 | -0.44 | .903 | .000 |
| Right inferior temporal | -1.63 | .210 | .000 | 0.67 | .720 | .000 | 0.51 | .940 | .000 | -0.96 | .489 | .000 | -0.80 | .814 | .000 |
| Right isthmus cingulate | 0.37 | .806 | .000 | 0.39 | .829 | .000 | 0.23 | .940 | .000 | -0.61 | .698 | .000 | 1.08 | .736 | .000 |
| Right lateral occipital | **-3.06** | **.014** | .001 | 0.56 | .764 | .000 | -0.13 | .940 | .000 | **-3.85** | **.000** | .002 | 1.60 | .607 | .001 |
| Right lateral orbitofrontal | **-2.81** | **.024** | .002 | 1.90 | .499 | .001 | -0.05 | .958 | .000 | **-3.73** | **.000** | .003 | 1.11 | .736 | .000 |
| Right lingual | **-3.71** | **.000** | .003 | 0.98 | .714 | .000 | -0.41 | .940 | .000 | **-3.82** | **.000** | .003 | 0.55 | .903 | .000 |
| Right medial orbitofrontal | -1.01 | .471 | .000 | 0.73 | .720 | .000 | -0.87 | .814 | .000 | **-3.56** | **.000** | .003 | **3.37** | **.034** | .003 |
| Right middle temporal | -0.93 | .511 | .000 | 1.54 | .630 | .000 | -0.70 | .869 | .000 | -1.03 | .464 | .000 | -0.48 | .903 | .000 |
| Right parahippocampal | **-3.72** | **.000** | .003 | -0.71 | .720 | .000 | -0.93 | .814 | .000 | **-3.36** | **.006** | .003 | 0.74 | .814 | .000 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right paracentral | **-3.48** | **.008** | .003 | -0.67 | .720 | .000 | 0.41 | .940 | .000 | **-2.87** | **.014** | .002 | 0.36 | .903 | .000 |
| Right pars opercularis | -0.88 | .536 | .000 | 1.01 | .714 | .000 | -2.40 | .306 | .001 | **-3.09** | **.010** | .002 | 2.59 | .187 | .002 |
| Right pars orbitalis | 0.18 | .884 | .000 | 0.71 | .720 | .000 | -2.71 | .238 | .001 | -0.43 | .786 | .000 | 0.16 | .961 | .000 |
| Right pars triangularis | -0.28 | .845 | .000 | 1.70 | .499 | .000 | -1.40 | .580 | .000 | -1.91 | .121 | .001 | 1.37 | .723 | .001 |
| Right pericalcarine | **-4.12** | **.000** | .003 | 0.91 | .720 | .000 | 0.27 | .940 | .000 | **-3.45** | **.006** | .003 | -0.37 | .903 | .000 |
| Right postcentral | **-2.57** | **.036** | .001 | 0.02 | .989 | .000 | 0.50 | .940 | .000 | -1.99 | .110 | .001 | -0.12 | .976 | .000 |
| Right posterior cingulate | -0.70 | .649 | .000 | 0.01 | .989 | .000 | -2.36 | .306 | .001 | -0.47 | .762 | .000 | -0.41 | .903 | .000 |
| Right precentral | **-2.54** | **.036** | .001 | -0.99 | .714 | .000 | -2.18 | .311 | .001 | **-2.98** | **.012** | .002 | 1.46 | .704 | .001 |
| Right precuneus | -1.39 | .321 | .000 | 1.75 | .499 | .001 | -0.66 | .869 | .000 | -0.68 | .667 | .000 | -1.57 | .607 | .001 |
| Right rostral anterior cingulate | 1.12 | .422 | .000 | 0.66 | .720 | .000 | -0.41 | .940 | .000 | -0.09 | .940 | .000 | 1.02 | .736 | .000 |
| Right rostral middle frontal | **-2.71** | **.028** | .001 | -0.02 | .989 | .000 | -2.25 | .311 | .001 | **-3.98** | **.000** | .003 | 2.20 | .272 | .001 |
| Right superior frontal | -2.16 | .081 | .001 | -1.35 | .669 | .000 | -1.54 | .487 | .000 | -1.96 | .113 | .001 | 0.79 | .814 | .000 |
| Right superior parietal | -0.26 | .845 | .000 | 1.20 | .689 | .000 | -1.14 | .691 | .000 | -0.15 | .926 | .000 | -0.80 | .814 | .000 |
| Right superior temporal | **-2.89** | **.021** | .001 | 0.58 | .763 | .000 | -0.66 | .869 | .000 | **-2.39** | **.044** | .001 | -0.27 | .927 | .000 |
| Right supramarginal | 0.12 | .911 | .000 | 1.82 | .499 | .000 | -0.16 | .940 | .000 | 0.18 | .925 | .000 | -1.05 | .736 | .000 |
| Right frontal pole | 0.45 | .766 | .000 | -0.17 | .937 | .000 | 2.15 | .311 | .001 | 0.52 | .732 | .000 | 0.10 | .976 | .000 |
| Right temporal pole | -0.52 | .746 | .000 | 0.66 | .720 | .000 | -1.71 | .476 | .000 | -0.58 | .701 | .000 | -0.33 | .915 | .000 |
| Right transverse temporal | -1.95 | .128 | .001 | 0.99 | .714 | .000 | -1.53 | .487 | .000 | -1.27 | .332 | .000 | -1.08 | .736 | .000 |
| Right insula | -0.45 | .766 | .000 | 0.39 | .829 | .000 | 0.90 | .814 | .000 | **-3.17** | **.010** | .002 | **3.84** | **.000** | .004 |

*Note*. $N = 9{,}818$. Coefficients in bold are significant after FDR correction (adopting a 5% false discovery rate) for 68 tests

**Table S10.** Results examining the relationship between cortical and subcortical regional GMV and environmental stress factors identified by bifactor modeling with ICV added as an additional covariate.

| Brain region | General Environmental Stress | | | Family Dynamics | | | Interpersonal Support | | | Neighborhood SES Deprivation | | | Urbanicity | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ |
| Left banks of superior temporal sulcus | 0.29 | .861 | .000 | -1.50 | .465 | .000 | 1.06 | .898 | .000 | -0.34 | .865 | .000 | 0.56 | .851 | .000 |
| Left caudal anterior cingulate | -1.22 | .404 | .000 | -0.56 | .856 | .000 | 1.73 | .609 | .000 | -0.20 | .932 | .000 | -0.38 | .918 | .000 |
| Left caudal middle frontal | -2.09 | .144 | .000 | 2.89 | .087 | .001 | -0.40 | .981 | .000 | 0.31 | .865 | .000 | -1.33 | .569 | .000 |
| Left cuneus | **-3.35** | **.017** | .001 | 1.90 | .331 | .000 | -0.25 | .989 | .000 | 0.36 | .865 | .000 | -1.07 | .648 | .000 |
| Left entorhinal | -1.38 | .346 | .000 | -1.45 | .469 | .000 | -1.02 | .898 | .000 | -2.76 | .122 | .000 | 1.24 | .601 | .000 |
| Left fusiform | -1.70 | .234 | .000 | -0.06 | .962 | .000 | 2.25 | .298 | .000 | -0.30 | .865 | .000 | 0.62 | .825 | .000 |
| Left inferior parietal | 0.87 | .560 | .000 | -1.44 | .469 | .000 | 1.29 | .846 | .000 | -1.87 | .279 | .000 | 0.14 | .935 | .000 |
| Left inferior temporal | -0.02 | .986 | .000 | -1.75 | .331 | .000 | 0.65 | .981 | .000 | -1.69 | .317 | .000 | -0.16 | .935 | .000 |
| Left isthmus cingulate | 0.73 | .626 | .000 | 0.10 | .962 | .000 | 1.01 | .898 | .000 | -1.60 | .319 | .000 | 1.92 | .292 | .000 |
| Left lateral occipital | -2.07 | .144 | .000 | 0.65 | .856 | .000 | -0.80 | .943 | .000 | 0.92 | .659 | .000 | -0.11 | .945 | .000 |
| Left lateral orbitofrontal | 1.34 | .358 | .000 | 1.78 | .331 | .000 | -0.34 | .981 | .000 | -0.58 | .799 | .000 | -0.68 | .818 | .000 |
| Left lingual | -1.77 | .216 | .000 | 1.98 | .331 | .001 | 2.26 | .298 | .001 | 0.16 | .932 | .000 | 0.14 | .935 | .000 |
| Left medial orbitofrontal | 1.19 | .409 | .000 | -0.09 | .962 | .000 | 0.30 | .981 | .000 | 0.90 | .659 | .000 | -0.06 | .952 | .000 |
| Left middle temporal | -0.83 | .583 | .000 | 0.52 | .856 | .000 | 1.49 | .745 | .000 | -1.17 | .509 | .000 | 0.06 | .952 | .000 |
| Left parahippocampal | **-3.66** | **.000** | .002 | -2.95 | .087 | .001 | 1.26 | .846 | .000 | -0.62 | .789 | .000 | 1.42 | .560 | .000 |
| Left paracentral | -0.07 | .952 | .000 | -0.50 | .856 | .000 | 2.04 | .396 | .001 | -0.62 | .789 | .000 | -1.35 | .569 | .000 |
| Left pars opercularis | 2.14 | .137 | .001 | 1.18 | .578 | .000 | -0.26 | .989 | .000 | 0.30 | .865 | .000 | -1.10 | .640 | .000 |
| Left pars orbitalis | -1.10 | .457 | .000 | 1.03 | .691 | .000 | -0.58 | .981 | .000 | -1.14 | .528 | .001 | -2.19 | .229 | .001 |
| Left pars triangularis | 1.56 | .261 | .000 | -1.16 | .578 | .000 | 0.41 | .981 | .000 | -1.91 | .276 | .000 | -0.91 | .760 | .000 |
| Left pericalcarine | -1.32 | .363 | .000 | 1.55 | .442 | .000 | 1.14 | .898 | .000 | -0.64 | .789 | .000 | 0.31 | .932 | .000 |
| Left postcentral | -0.30 | .861 | .000 | -1.00 | .696 | .000 | 0.98 | .898 | .000 | -2.49 | .131 | .000 | 1.35 | .569 | .000 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Left posterior cingulate | -0.76 | .617 | .000 | -0.77 | .856 | .000 | -0.07 | .989 | .000 | -1.29 | .481 | .000 | -0.21 | .935 | .000 |
| Left precentral | -2.19 | .137 | .000 | 0.05 | .962 | .000 | 0.96 | .898 | .000 | -2.37 | .131 | .000 | -0.19 | .935 | .000 |
| Left precuneus | -0.66 | .657 | .000 | 1.24 | .537 | .000 | 0.93 | .898 | .000 | -1.29 | .481 | .000 | -0.81 | .778 | .000 |
| Left rostral anterior cingulate | 0.98 | .506 | .000 | 1.00 | .696 | .000 | 2.30 | .298 | .001 | 0.30 | .865 | .000 | 2.00 | .267 | .000 |
| Left rostral middle frontal | -2.71 | .061 | .001 | -0.50 | .856 | .000 | 0.54 | .981 | .000 | -1.60 | .319 | .000 | -0.80 | .778 | .000 |
| Left superior frontal | -0.43 | .806 | .000 | -0.07 | .962 | .000 | -0.03 | .989 | .000 | -0.93 | .659 | .000 | -0.88 | .771 | .000 |
| Left superior parietal | -0.20 | .915 | .000 | 1.99 | .331 | .000 | 0.18 | .989 | .000 | -1.31 | .481 | .000 | -0.28 | .935 | .000 |
| Left superior temporal | -2.14 | .137 | .000 | -0.65 | .856 | .000 | 0.10 | .989 | .000 | -1.24 | .508 | .000 | -0.49 | .900 | .000 |
| Left supramarginal | -0.38 | .832 | .000 | -1.80 | .331 | .000 | -0.82 | .943 | .000 | -2.85 | .116 | .000 | -1.42 | .560 | .000 |
| Left frontal pole | -2.37 | .112 | .001 | 0.20 | .962 | .000 | -0.78 | .943 | .000 | 0.49 | .847 | .000 | -0.90 | .760 | .000 |
| Left temporal pole | -2.03 | .145 | .001 | -0.79 | .856 | .000 | -0.54 | .981 | .000 | -0.99 | .628 | .000 | -1.12 | .640 | .000 |
| Left transverse temporal | -1.59 | .254 | .000 | 0.29 | .945 | .000 | -0.75 | .943 | .000 | 1.65 | .319 | .000 | -1.42 | .560 | .000 |
| Left insula | 0.87 | .560 | .000 | -0.50 | .856 | .000 | 1.06 | .898 | .000 | 2.36 | .131 | .000 | 0.33 | .932 | .000 |
| Right banks of superior temporal sulcus | 0.10 | .952 | .000 | -0.50 | .856 | .000 | 1.44 | .749 | .000 | -1.61 | .319 | .000 | 0.68 | .818 | .000 |
| Right caudal anterior cingulate | 0.68 | .657 | .000 | -1.40 | .486 | .000 | -0.23 | .989 | .000 | -1.18 | .509 | .001 | 2.22 | .226 | .001 |
| Right caudal middle frontal | -0.15 | .934 | .000 | 1.82 | .331 | .000 | 0.10 | .989 | .000 | 2.26 | .161 | .000 | -0.79 | .778 | .000 |
| Right cuneus | -1.57 | .261 | .000 | 2.40 | .211 | .001 | -0.07 | .989 | .000 | 0.09 | .932 | .000 | 0.66 | .818 | .000 |
| Right entorhinal | -1.67 | .234 | .000 | 0.22 | .962 | .000 | -1.01 | .898 | .000 | -2.70 | .122 | .001 | 3.00 | .065 | .001 |
| Right fusiform | -1.08 | .458 | .000 | -1.65 | .386 | .000 | 1.88 | .482 | .000 | 0.09 | .932 | .000 | 0.42 | .918 | .000 |
| Right inferior parietal | -0.90 | .555 | .000 | -0.79 | .856 | .000 | 0.17 | .989 | .000 | -0.43 | .865 | .000 | -0.43 | .918 | .000 |
| Right inferior temporal | -0.31 | .861 | .000 | -2.08 | .322 | .000 | 0.75 | .943 | .000 | -1.82 | .282 | .000 | 0.23 | .935 | .000 |
| Right isthmus cingulate | 1.45 | .314 | .000 | 1.29 | .522 | .000 | 0.11 | .989 | .000 | -1.30 | .481 | .000 | -0.72 | .805 | .000 |
| Right lateral occipital | -0.13 | .939 | .000 | -0.26 | .952 | .000 | -0.79 | .943 | .000 | -0.13 | .932 | .000 | -0.18 | .935 | .000 |
| Right lateral orbitofrontal | -0.55 | .734 | .000 | 1.91 | .331 | .000 | 0.19 | .989 | .000 | -0.45 | .862 | .000 | 0.10 | .945 | .000 |
| Right lingual | -1.68 | .234 | .000 | 2.43 | .211 | .001 | -0.03 | .989 | .000 | -0.65 | .789 | .000 | 1.20 | .625 | .000 |
| Right medial orbitofrontal | 1.20 | .408 | .000 | -0.20 | .962 | .000 | 0.48 | .981 | .000 | -1.09 | .558 | .000 | 1.90 | .292 | .000 |
| Right middle temporal | -1.90 | .168 | .000 | 0.12 | .962 | .000 | 1.59 | .702 | .000 | -1.43 | .413 | .000 | -0.33 | .932 | .000 |
| Right parahippocampal | **-3.21** | **.017** | .001 | -1.30 | .522 | .000 | 2.00 | .400 | .000 | -1.96 | .276 | .000 | -0.21 | .935 | .000 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right paracentral | -0.52 | .747 | .000 | -0.43 | .878 | .000 | 1.02 | .898 | .000 | -0.83 | .705 | .000 | -0.79 | .778 | .000 |
| Right pars opercularis | -1.15 | .426 | .000 | 1.85 | .331 | .000 | -0.54 | .981 | .000 | 0.67 | .789 | .000 | -1.27 | .597 | .000 |
| Right pars orbitalis | -1.37 | .346 | .000 | 0.06 | .962 | .000 | -1.05 | .898 | .000 | -1.92 | .276 | .000 | -1.14 | .640 | .000 |
| Right pars triangularis | 2.03 | .145 | .001 | -0.61 | .856 | .000 | -0.01 | .993 | .000 | -1.69 | .317 | .000 | 0.65 | .818 | .000 |
| Right pericalcarine | **-3.05** | **.025** | .001 | 2.48 | .211 | .001 | -0.32 | .981 | .000 | -0.13 | .932 | .000 | 1.49 | .560 | .000 |
| Right postcentral | 0.30 | .861 | .000 | -1.24 | .537 | .000 | 2.10 | .392 | .000 | -1.91 | .276 | .000 | 0.41 | .918 | .000 |
| Right posterior cingulate | 2.00 | .145 | .000 | -1.35 | .510 | .000 | -0.45 | .981 | .000 | -2.50 | .131 | .000 | 2.01 | .267 | .000 |
| Right precentral | -1.90 | .168 | .000 | -0.65 | .856 | .000 | -0.41 | .981 | .000 | -1.18 | .509 | .000 | -1.53 | .560 | .000 |
| Right precuneus | -0.73 | .626 | .000 | 0.07 | .962 | .000 | 2.53 | .298 | .001 | -0.66 | .789 | .000 | -1.66 | .464 | .000 |
| Right rostral anterior cingulate | -0.20 | .915 | .000 | 1.92 | .331 | .000 | 0.37 | .981 | .000 | 1.85 | .282 | .000 | 0.23 | .935 | .000 |
| Right rostral middle frontal | **-2.87** | **.039** | .001 | 0.66 | .856 | .000 | -0.40 | .981 | .000 | -1.20 | .509 | .000 | -0.22 | .935 | .000 |
| Right superior frontal | -0.79 | .603 | .000 | -0.43 | .878 | .000 | 1.42 | .749 | .000 | -0.71 | .789 | .001 | -2.64 | .116 | .001 |
| Right superior parietal | -1.07 | .458 | .000 | 2.23 | .272 | .001 | 0.63 | .981 | .000 | -0.19 | .932 | .000 | -0.96 | .756 | .000 |
| Right superior temporal | **-3.02** | **.033** | .001 | -0.16 | .962 | .000 | 0.82 | .943 | .000 | -0.33 | .865 | .000 | -2.04 | .267 | .000 |
| Right supramarginal | 2.56 | .080 | .001 | -1.77 | .331 | .000 | 0.08 | .989 | .000 | -2.56 | .131 | .000 | -0.30 | .932 | .000 |
| Right frontal pole | -2.01 | .145 | .001 | -0.54 | .856 | .000 | 0.94 | .898 | .000 | 0.56 | .804 | .001 | -3.02 | .065 | .001 |
| Right temporal pole | -2.26 | .131 | .001 | 1.33 | .519 | .000 | -0.48 | .981 | .000 | -0.68 | .789 | .000 | -0.17 | .935 | .000 |
| Right transverse temporal | -1.31 | .363 | .000 | 0.38 | .905 | .000 | -0.62 | .981 | .000 | -0.45 | .862 | .000 | -1.49 | .560 | .000 |
| Right insula | 1.66 | .234 | .000 | 0.42 | .879 | .000 | 1.31 | .846 | .000 | -0.40 | .865 | .001 | 2.49 | .162 | .001 |
| Left cerebellum cortex | **-4.32** | **.000** | .002 | -0.69 | .856 | .000 | 2.38 | .298 | .000 | -1.93 | .276 | .000 | 0.76 | .780 | .000 |
| Left thalamus proper | -0.99 | .506 | .000 | -0.08 | .962 | .000 | 0.63 | .981 | .000 | 0.12 | .932 | .000 | 1.11 | .640 | .000 |
| Left caudate | -2.52 | .080 | .001 | -0.12 | .962 | .000 | 0.30 | .981 | .000 | -0.68 | .789 | .000 | -0.48 | .900 | .000 |
| Left putamen | -2.31 | .122 | .001 | -2.13 | .319 | .001 | 0.40 | .981 | .000 | **-4.63** | **.000** | .001 | 2.75 | .104 | .001 |
| Left pallidum | -1.26 | .383 | .000 | -1.64 | .386 | .000 | 0.05 | .989 | .000 | 1.74 | .310 | .000 | 1.14 | .640 | .000 |
| Left hippocampus | -0.19 | .916 | .000 | -0.52 | .856 | .000 | 0.34 | .981 | .000 | -0.90 | .659 | .000 | 1.29 | .591 | .000 |
| Left amygdala | -0.45 | .803 | .000 | -1.48 | .465 | .000 | 0.42 | .981 | .000 | -1.78 | .297 | .000 | 0.38 | .918 | .000 |
| Left accumbens area | **-3.17** | **.025** | .001 | -0.58 | .856 | .000 | -0.03 | .989 | .000 | -2.41 | .131 | .000 | 2.07 | .267 | .000 |
| Left ventral diencephalon | -0.41 | .815 | .000 | -0.67 | .856 | .000 | 2.44 | .298 | .001 | -0.40 | .865 | .000 | -0.40 | .918 | .000 |
| Right cerebellum cortex | -0.07 | .952 | .000 | -0.52 | .856 | .000 | -1.24 | .846 | .000 | -1.50 | .373 | .000 | 2.40 | .174 | .000 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right thalamus proper | **-4.71** | **.000** | .002 | -0.30 | .945 | .000 | 2.40 | .298 | .000 | -1.64 | .319 | .000 | 0.85 | .778 | .000 |
| Right caudate | 0.57 | .731 | .000 | 0.56 | .856 | .000 | -0.13 | .989 | .000 | 0.11 | .932 | .000 | 2.28 | .222 | .000 |
| Right putamen | -2.18 | .137 | .001 | 0.31 | .945 | .000 | 0.32 | .981 | .000 | 0.50 | .847 | .000 | -0.90 | .760 | .000 |
| Right pallidum | -2.53 | .080 | .001 | -2.92 | .087 | .001 | -0.38 | .981 | .000 | -2.40 | .131 | .000 | 0.60 | .825 | .000 |
| Right hippocampus | -1.95 | .158 | .000 | 0.47 | .867 | .000 | 0.23 | .989 | .000 | 0.33 | .865 | .001 | **3.53** | **.000** | .001 |
| Right amygdala | -1.60 | .254 | .000 | -3.20 | .087 | .001 | 1.63 | .696 | .000 | **-3.35** | **.044** | .000 | 0.60 | .825 | .000 |
| Right accumbens area | -0.94 | .530 | .000 | -0.89 | .794 | .000 | 0.90 | .910 | .000 | -1.06 | .573 | .000 | -0.76 | .780 | .000 |
| Right ventral diencephalon | -2.13 | .137 | .000 | -0.69 | .856 | .000 | 1.50 | .745 | .000 | 0.14 | .932 | .000 | 1.40 | .560 | .000 |
| Brain stem | -1.69 | .234 | .000 | 0.26 | .952 | .000 | -0.61 | .981 | .000 | -0.60 | .796 | .001 | 2.99 | .065 | .001 |

*Note*. $N$ = 9,818. Coefficients in bold are significant after FDR correction (adopting a 5% false discovery rate) for 87 tests

**Table S11.** Results examining the relationship between cortical and subcortical regional GMV and environmental stress factors identified by higher-order modeling with ICV added as an additional covariate.

| Brain region | General Environmental Stress | | | Family Dynamics | | | Interpersonal Support | | | Neighborhood SES Deprivation | | | Urbanicity | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ |
| Left banks of superior temporal sulcus | -0.05 | .960 | .000 | -1.65 | .371 | .000 | 1.08 | .907 | .000 | -0.63 | .726 | .000 | 1.73 | .481 | .001 |
| Left caudal anterior cingulate | -1.37 | .338 | .000 | -0.65 | .879 | .000 | 1.74 | .595 | .000 | -0.75 | .677 | .000 | 0.03 | .993 | .000 |
| Left caudal middle frontal | -1.36 | .338 | .000 | 2.88 | .116 | .001 | -0.37 | .970 | .000 | -1.44 | .402 | .000 | -1.09 | .780 | .000 |
| Left cuneus | **-2.83** | **.033** | .001 | 1.95 | .313 | .001 | -0.25 | .986 | .000 | -1.38 | .404 | .000 | -2.16 | .383 | .001 |
| Left entorhinal | -2.50 | .060 | .001 | -1.28 | .514 | .000 | -1.04 | .907 | .000 | -2.81 | .054 | .001 | 1.38 | .635 | .000 |
| Left fusiform | -1.74 | .223 | .000 | -0.27 | .978 | .000 | 2.28 | .273 | .000 | -1.59 | .348 | .000 | 0.60 | .841 | .000 |
| Left inferior parietal | -0.19 | .857 | .000 | -1.55 | .425 | .000 | 1.29 | .829 | .000 | -0.97 | .587 | .000 | 2.04 | .383 | .001 |
| Left inferior temporal | -0.99 | .450 | .000 | -1.86 | .315 | .000 | 0.64 | .970 | .000 | -1.27 | .446 | .000 | 1.66 | .496 | .000 |
| Left isthmus cingulate | 0.27 | .825 | .000 | -0.06 | .978 | .000 | 1.06 | .907 | .000 | -1.79 | .268 | .000 | 2.92 | .290 | .002 |
| Left lateral occipital | -1.39 | .338 | .000 | 0.44 | .928 | .000 | -0.77 | .959 | .000 | -0.76 | .677 | .000 | -0.86 | .805 | .000 |
| Left lateral orbitofrontal | 1.27 | .353 | .000 | 1.79 | .315 | .000 | -0.34 | .970 | .000 | -0.10 | .917 | .000 | 0.67 | .841 | .000 |
| Left lingual | -1.33 | .341 | .000 | 1.97 | .313 | .001 | 2.31 | .273 | .001 | -1.28 | .446 | .000 | -0.42 | .879 | .000 |
| Left medial orbitofrontal | 1.43 | .338 | .000 | -0.06 | .978 | .000 | 0.31 | .970 | .000 | 1.49 | .397 | .000 | -0.29 | .956 | .000 |
| Left middle temporal | -1.28 | .353 | .000 | 0.52 | .888 | .000 | 1.48 | .756 | .000 | -1.11 | .516 | .000 | -0.01 | .993 | .000 |
| Left parahippocampal | **-4.45** | **.000** | .003 | -3.01 | .116 | .001 | 1.28 | .829 | .000 | -2.83 | .054 | .001 | 0.75 | .819 | .000 |
| Left paracentral | -0.71 | .566 | .000 | -0.38 | .928 | .000 | 2.00 | .445 | .001 | 0.35 | .876 | .000 | -0.84 | .805 | .000 |
| Left pars opercularis | 2.26 | .099 | .001 | 1.15 | .604 | .000 | -0.26 | .986 | .000 | 1.46 | .402 | .000 | -0.07 | .982 | .000 |
| Left pars orbitalis | -1.54 | .306 | .000 | 1.13 | .604 | .000 | -0.61 | .970 | .000 | -1.40 | .403 | .000 | -0.52 | .841 | .000 |
| Left pars triangularis | 0.42 | .728 | .000 | -1.11 | .616 | .000 | 0.34 | .970 | .000 | 0.76 | .677 | .000 | -0.02 | .993 | .000 |
| Left pericalcarine | -1.22 | .363 | .000 | 1.52 | .428 | .000 | 1.15 | .907 | .000 | -1.14 | .502 | .000 | -0.43 | .879 | .000 |
| Left postcentral | -1.34 | .339 | .000 | -1.16 | .604 | .000 | 0.99 | .907 | .000 | -2.57 | .067 | .001 | 2.61 | .290 | .001 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Left posterior cingulate | -1.42 | .338 | .000 | -0.70 | .874 | .000 | -0.09 | .986 | .000 | -1.04 | .544 | .000 | 0.16 | .978 | .000 |
| Left precentral | **-2.95** | **.022** | .001 | -0.07 | .978 | .000 | 0.95 | .907 | .000 | **-3.12** | **.029** | .001 | 1.02 | .791 | .000 |
| Left precuneus | -1.09 | .414 | .000 | 1.42 | .455 | .000 | 0.91 | .907 | .000 | -0.71 | .702 | .000 | -0.83 | .805 | .000 |
| Left rostral anterior cingulate | 1.36 | .338 | .000 | 0.79 | .848 | .000 | 2.35 | .273 | .001 | 0.43 | .853 | .000 | 0.88 | .805 | .000 |
| Left rostral middle frontal | **-3.49** | **.000** | .001 | -0.40 | .928 | .000 | 0.49 | .970 | .000 | -1.87 | .231 | .000 | -1.06 | .788 | .000 |
| Left superior frontal | -0.92 | .478 | .000 | -0.01 | .991 | .000 | -0.07 | .986 | .000 | -0.14 | .898 | .000 | -0.90 | .805 | .000 |
| Left superior parietal | -0.49 | .686 | .000 | 2.08 | .313 | .001 | 0.14 | .986 | .000 | -0.40 | .874 | .000 | -1.04 | .791 | .000 |
| Left superior temporal | -2.59 | .051 | .001 | -0.77 | .858 | .000 | 0.08 | .986 | .000 | -2.09 | .157 | .001 | 0.37 | .911 | .000 |
| Left supramarginal | -2.12 | .123 | .001 | -1.46 | .444 | .000 | -0.93 | .907 | .000 | -0.62 | .726 | .000 | -0.89 | .805 | .000 |
| Left frontal pole | -1.95 | .164 | .001 | 0.13 | .978 | .000 | -0.78 | .959 | .000 | -1.05 | .544 | .000 | -0.90 | .805 | .000 |
| Left temporal pole | -2.57 | .051 | .001 | -0.80 | .848 | .000 | -0.57 | .970 | .000 | -1.51 | .390 | .000 | -0.56 | .841 | .000 |
| Left transverse temporal | -0.81 | .521 | .000 | 0.15 | .978 | .000 | -0.74 | .970 | .000 | 0.19 | .898 | .000 | -1.31 | .636 | .000 |
| Left insula | 1.77 | .223 | .000 | -0.79 | .848 | .000 | 1.10 | .907 | .000 | 1.43 | .402 | .000 | 0.51 | .841 | .000 |
| Right banks of superior temporal sulcus | -0.68 | .577 | .000 | -0.55 | .888 | .000 | 1.43 | .783 | .000 | -0.94 | .587 | .000 | 0.99 | .805 | .000 |
| Right caudal anterior cingulate | 0.23 | .850 | .000 | -1.67 | .371 | .000 | -0.22 | .986 | .000 | -0.65 | .726 | .000 | 1.91 | .402 | .001 |
| Right caudal middle frontal | 1.08 | .416 | .000 | 1.54 | .425 | .000 | 0.14 | .986 | .000 | 1.25 | .446 | .000 | -1.25 | .659 | .000 |
| Right cuneus | -0.91 | .480 | .000 | 2.33 | .249 | .001 | -0.05 | .986 | .000 | -1.42 | .402 | .000 | -0.22 | .970 | .000 |
| Right entorhinal | -2.20 | .111 | .001 | 0.16 | .978 | .000 | -0.99 | .907 | .000 | **-3.65** | **.000** | .003 | 2.32 | .365 | .001 |
| Right fusiform | -1.23 | .363 | .000 | -1.94 | .313 | .000 | 1.88 | .467 | .000 | -0.46 | .845 | .000 | 0.44 | .879 | .000 |
| Right inferior parietal | -1.14 | .396 | .000 | -0.88 | .802 | .000 | 0.18 | .986 | .000 | -0.96 | .587 | .000 | 0.48 | .860 | .000 |
| Right inferior temporal | -1.36 | .338 | .000 | -2.24 | .271 | .001 | 0.72 | .970 | .000 | -0.91 | .596 | .000 | 0.91 | .805 | .000 |
| Right isthmus cingulate | 0.95 | .466 | .000 | 1.35 | .487 | .000 | 0.09 | .986 | .000 | 0.16 | .898 | .000 | 0.19 | .978 | .000 |
| Right lateral occipital | -0.19 | .857 | .000 | -0.40 | .928 | .000 | -0.80 | .959 | .000 | -0.14 | .898 | .000 | 0.08 | .982 | .000 |
| Right lateral orbitofrontal | -0.33 | .788 | .000 | 1.87 | .315 | .000 | 0.22 | .986 | .000 | -1.05 | .544 | .000 | 0.16 | .978 | .000 |
| Right lingual | -1.21 | .364 | .000 | 2.33 | .249 | .001 | 0.02 | .986 | .000 | -2.20 | .143 | .001 | 0.54 | .841 | .000 |
| Right medial orbitofrontal | 0.85 | .503 | .000 | -0.44 | .928 | .000 | 0.50 | .970 | .000 | -0.14 | .898 | .000 | 1.45 | .605 | .000 |
| Right middle temporal | -2.59 | .051 | .001 | 0.08 | .978 | .000 | 1.59 | .690 | .000 | -2.41 | .099 | .001 | 0.58 | .841 | .000 |
| Right parahippocampal | **-4.32** | **.000** | .003 | -1.07 | .636 | .000 | 1.94 | .452 | .000 | -2.36 | .104 | .001 | -0.71 | .841 | .000 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right paracentral | -1.02 | .442 | .000 | -0.42 | .928 | .000 | 1.02 | .907 | .000 | -1.19 | .489 | .000 | 0.81 | .808 | .000 |
| Right pars opercularis | -0.57 | .647 | .000 | 1.93 | .313 | .001 | -0.53 | .970 | .000 | -0.26 | .898 | .000 | -1.35 | .636 | .000 |
| Right pars orbitalis | -2.18 | .113 | .001 | 0.26 | .978 | .000 | -1.09 | .907 | .000 | -1.64 | .329 | .000 | -0.52 | .841 | .000 |
| Right pars triangularis | 1.23 | .363 | .000 | -0.68 | .877 | .000 | -0.02 | .986 | .000 | -0.26 | .898 | .000 | 2.07 | .383 | .001 |
| Right pericalcarine | -2.28 | .096 | .001 | 2.47 | .226 | .001 | -0.27 | .986 | .000 | -2.58 | .067 | .001 | -0.26 | .961 | .000 |
| Right postcentral | -0.70 | .566 | .000 | -1.39 | .457 | .000 | 2.09 | .392 | .000 | -1.26 | .446 | .000 | 1.83 | .423 | .001 |
| Right posterior cingulate | 0.85 | .503 | .000 | -1.48 | .444 | .000 | -0.47 | .970 | .000 | -0.27 | .898 | .000 | 2.02 | .383 | .001 |
| Right precentral | -2.49 | .060 | .001 | -0.65 | .879 | .000 | -0.44 | .970 | .000 | -1.34 | .426 | .000 | -0.75 | .819 | .000 |
| Right precuneus | -1.30 | .353 | .000 | 0.24 | .978 | .000 | 2.48 | .273 | .001 | 0.22 | .898 | .000 | -1.56 | .513 | .000 |
| Right rostral anterior cingulate | 0.98 | .454 | .000 | 1.81 | .315 | .000 | 0.43 | .970 | .000 | 0.36 | .876 | .000 | -0.25 | .961 | .000 |
| Right rostral middle frontal | **-3.03** | **.016** | .001 | 0.57 | .888 | .000 | -0.40 | .970 | .000 | -2.64 | .067 | .001 | -0.10 | .982 | .000 |
| Right superior frontal | -1.55 | .306 | .000 | -0.14 | .978 | .000 | 1.36 | .801 | .000 | 0.15 | .898 | .000 | -1.70 | .484 | .000 |
| Right superior parietal | -0.84 | .503 | .000 | 2.20 | .271 | .001 | 0.63 | .970 | .000 | -0.25 | .898 | .000 | -1.56 | .513 | .000 |
| Right superior temporal | **-3.28** | **.009** | .001 | -0.03 | .989 | .000 | 0.80 | .959 | .000 | -1.65 | .329 | .000 | -1.27 | .657 | .000 |
| Right supramarginal | 1.19 | .369 | .000 | -1.78 | .315 | .000 | 0.04 | .986 | .000 | 0.17 | .898 | .000 | 1.88 | .402 | .001 |
| Right frontal pole | -2.08 | .129 | .001 | -0.55 | .888 | .000 | 0.91 | .907 | .000 | 0.19 | .898 | .000 | -2.21 | .383 | .001 |
| Right temporal pole | -2.05 | .134 | .001 | 1.28 | .514 | .000 | -0.47 | .970 | .000 | -2.11 | .157 | .001 | -0.10 | .982 | .000 |
| Right transverse temporal | -1.45 | .338 | .000 | 0.39 | .928 | .000 | -0.63 | .970 | .000 | -0.93 | .587 | .000 | -0.59 | .841 | .000 |
| Right insula | 1.75 | .223 | .000 | 0.12 | .978 | .000 | 1.36 | .801 | .000 | -0.36 | .876 | .000 | 2.58 | .290 | .001 |
| Left cerebellum cortex | **-5.07** | **.000** | .003 | -0.53 | .888 | .000 | 2.37 | .273 | .000 | **-3.61** | **.000** | .002 | -0.09 | .982 | .000 |
| Left thalamus proper | -0.72 | .566 | .000 | -0.29 | .978 | .000 | 0.67 | .970 | .000 | -0.62 | .726 | .000 | 0.28 | .956 | .000 |
| Left caudate | **-2.69** | **.044** | .001 | -0.11 | .978 | .000 | 0.32 | .970 | .000 | -2.57 | .067 | .001 | 0.57 | .841 | .000 |
| Left putamen | **-4.20** | **.000** | .003 | -2.05 | .313 | .001 | 0.37 | .970 | .000 | **-4.47** | **.000** | .003 | 2.31 | .365 | .001 |
| Left pallidum | -0.56 | .647 | .000 | -1.79 | .315 | .000 | 0.11 | .986 | .000 | -0.30 | .898 | .000 | 0.64 | .841 | .000 |
| Left hippocampus | -0.50 | .686 | .000 | -0.54 | .888 | .000 | 0.36 | .970 | .000 | -0.88 | .611 | .000 | 0.93 | .805 | .000 |
| Left amygdala | -1.41 | .338 | .000 | -1.45 | .444 | .000 | 0.39 | .970 | .000 | -0.83 | .644 | .000 | 0.33 | .937 | .000 |
| Left accumbens area | **-3.90** | **.000** | .002 | -0.58 | .888 | .000 | -0.03 | .986 | .000 | **-3.75** | **.000** | .002 | 1.09 | .780 | .000 |
| Left ventral diencephalon | -0.78 | .537 | .000 | -0.72 | .874 | .000 | 2.44 | .273 | .001 | -0.65 | .726 | .000 | 0.65 | .841 | .000 |
| Right cerebellum cortex | -0.47 | .697 | .000 | -0.53 | .888 | .000 | -1.23 | .862 | .000 | -1.17 | .492 | .000 | 1.19 | .708 | .000 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right thalamus proper | **-5.20** | **.000** | .003 | -0.23 | .978 | .000 | 2.41 | .273 | .000 | **-3.85** | **.000** | .002 | -0.07 | .982 | .000 |
| Right caudate | 1.06 | .422 | .000 | 0.13 | .978 | .000 | -0.06 | .986 | .000 | -0.53 | .795 | .000 | 1.89 | .402 | .000 |
| Right putamen | -1.79 | .222 | .001 | 0.28 | .978 | .000 | 0.36 | .970 | .000 | -1.66 | .329 | .000 | 0.16 | .978 | .000 |
| Right pallidum | **-3.83** | **.000** | .002 | -2.77 | .131 | .001 | -0.41 | .970 | .000 | -2.60 | .067 | .001 | 0.59 | .841 | .000 |
| Right hippocampus | -1.12 | .400 | .000 | 0.17 | .978 | .000 | 0.31 | .970 | .000 | -2.15 | .155 | .001 | 1.62 | .508 | .001 |
| Right amygdala | **-3.50** | **.000** | .002 | -3.07 | .116 | .001 | 1.57 | .690 | .000 | -2.06 | .162 | .001 | 0.60 | .841 | .000 |
| Right accumbens area | -1.68 | .248 | .000 | -0.74 | .874 | .000 | 0.86 | .945 | .000 | -0.45 | .845 | .000 | -0.79 | .808 | .000 |
| Right ventral diencephalon | -1.89 | .183 | .001 | -0.93 | .763 | .000 | 1.56 | .690 | .000 | -2.04 | .166 | .001 | 1.33 | .636 | .000 |
| Brain stem | -1.37 | .338 | .000 | 0.14 | .978 | .000 | -0.56 | .970 | .000 | -2.28 | .125 | .001 | 1.38 | .635 | .000 |

*Note*. $N$ = 9,818. Coefficients in bold are significant after FDR correction (adopting a 5% false discovery rate) for 87 tests

**Table S12.** Results examining the relationship between regional cortical thickness and environmental stress factors identified by bifactor modeling with average cortical thickness added as an additional covariate.

| Brain region | General Environmental Stress | | | Family Dynamics | | | Interpersonal Support | | | Neighborhood SES Deprivation | | | Urbanicity | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ |
| Left banks of superior temporal sulcus | -1.78 | .296 | .000 | -1.57 | .438 | .000 | -0.61 | .898 | .000 | 0.63 | .713 | .000 | -1.31 | .330 | .000 |
| Left caudal anterior cingulate | 0.00 | .997 | .000 | -1.93 | .374 | .001 | 0.55 | .898 | .000 | 1.30 | .388 | .001 | 2.29 | .062 | .001 |
| Left caudal middle frontal | 0.71 | .696 | .000 | -0.75 | .821 | .000 | -0.17 | .919 | .000 | **-5.49** | **.000** | .000 | -1.66 | .190 | .000 |
| Left cuneus | **-3.10** | **.034** | .001 | 0.66 | .821 | .000 | 0.34 | .901 | .000 | 0.16 | .906 | .000 | -1.80 | .148 | .000 |
| Left entorhinal | 1.88 | .296 | .000 | -0.09 | .976 | .000 | 0.32 | .901 | .000 | 1.45 | .345 | .002 | **3.87** | **.000** | .002 |
| Left fusiform | 0.64 | .696 | .000 | 0.36 | .878 | .000 | 0.01 | .995 | .000 | **3.36** | **.006** | .000 | -0.72 | .672 | .000 |
| Left inferior parietal | 2.66 | .078 | .000 | 2.27 | .313 | .000 | -1.67 | .512 | .000 | **4.40** | **.000** | .000 | -1.52 | .237 | .000 |
| Left inferior temporal | 0.86 | .620 | .000 | -1.19 | .565 | .000 | 0.89 | .785 | .000 | **2.67** | **.032** | .000 | -1.30 | .330 | .000 |
| Left isthmus cingulate | 1.64 | .296 | .000 | -0.35 | .878 | .000 | 2.24 | .425 | .001 | **3.04** | **.010** | .000 | 0.48 | .784 | .000 |
| Left lateral occipital | -0.68 | .696 | .000 | 0.74 | .821 | .000 | 0.92 | .785 | .000 | 1.02 | .514 | .000 | -0.82 | .613 | .000 |
| Left lateral orbitofrontal | -1.78 | .296 | .000 | 1.13 | .585 | .000 | 0.69 | .877 | .000 | 0.06 | .964 | .000 | 2.30 | .062 | .000 |
| Left lingual | **-3.84** | **.000** | .001 | 0.44 | .848 | .000 | 0.57 | .898 | .000 | -1.33 | .381 | .000 | -0.08 | .974 | .000 |
| Left medial orbitofrontal | 0.12 | .958 | .000 | -1.75 | .374 | .000 | -1.15 | .773 | .000 | 0.88 | .584 | .000 | 2.08 | .099 | .000 |
| Left middle temporal | 0.53 | .737 | .000 | -0.08 | .976 | .000 | 0.41 | .901 | .000 | -1.13 | .478 | .000 | -0.93 | .541 | .000 |
| Left parahippocampal | **-4.02** | **.000** | .002 | 0.52 | .830 | .000 | -0.45 | .901 | .000 | -0.70 | .690 | .000 | 0.28 | .917 | .000 |
| Left paracentral | -0.89 | .617 | .000 | -2.27 | .313 | .001 | 2.13 | .431 | .000 | **-4.16** | **.000** | .001 | **-3.16** | **.010** | .001 |
| Left pars opercularis | 1.34 | .397 | .000 | 0.90 | .734 | .000 | -0.06 | .985 | .000 | 0.59 | .713 | .001 | **-3.55** | **.000** | .001 |
| Left pars orbitalis | 1.58 | .296 | .000 | 2.30 | .313 | .001 | -1.00 | .785 | .000 | 1.40 | .359 | .000 | -2.02 | .108 | .000 |
| Left pars triangularis | 2.33 | .151 | .000 | -0.60 | .830 | .000 | 0.17 | .919 | .000 | -0.77 | .666 | .001 | **-2.46** | **.045** | .001 |
| Left pericalcarine | -1.76 | .296 | .000 | 0.03 | .993 | .000 | 1.32 | .677 | .000 | -0.61 | .713 | .000 | 0.02 | .986 | .000 |
| Left postcentral | -0.89 | .617 | .000 | -1.04 | .612 | .000 | 0.85 | .785 | .000 | -1.15 | .474 | .001 | **-3.29** | **.006** | .001 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Left posterior cingulate | 0.28 | .883 | .000 | -2.01 | .374 | .001 | 1.65 | .512 | .000 | -0.46 | .775 | .000 | -0.10 | .974 | .000 |
| Left precentral | -1.11 | .501 | .000 | -1.43 | .544 | .000 | -0.88 | .785 | .000 | **-5.36** | **.000** | .001 | **-3.53** | **.000** | .001 |
| Left precuneus | 0.67 | .696 | .000 | 1.80 | .374 | .000 | 1.68 | .512 | .000 | -0.68 | .691 | .000 | -1.07 | .458 | .000 |
| Left rostral anterior cingulate | 1.16 | .490 | .000 | 1.91 | .374 | .000 | 0.30 | .901 | .000 | 0.97 | .536 | .001 | **3.16** | **.010** | .001 |
| Left rostral middle frontal | 1.01 | .564 | .000 | 0.23 | .909 | .000 | -0.26 | .901 | .000 | **-4.20** | **.000** | .000 | -1.86 | .140 | .000 |
| Left superior frontal | 1.40 | .367 | .000 | -1.25 | .565 | .000 | -1.48 | .568 | .000 | **-4.54** | **.000** | .000 | -0.26 | .920 | .000 |
| Left superior parietal | 0.64 | .696 | .000 | 0.32 | .878 | .000 | 0.43 | .901 | .000 | 0.37 | .807 | .000 | 0.10 | .974 | .000 |
| Left superior temporal | -0.82 | .637 | .000 | -0.07 | .976 | .000 | -0.30 | .901 | .000 | -1.47 | .345 | .000 | 0.42 | .806 | .000 |
| Left supramarginal | 1.64 | .296 | .000 | -0.58 | .830 | .000 | -1.27 | .677 | .000 | -2.19 | .095 | .002 | **-5.44** | **.000** | .002 |
| Left frontal pole | 1.02 | .562 | .000 | 1.87 | .374 | .000 | -1.26 | .677 | .000 | 0.45 | .775 | .000 | -1.88 | .140 | .000 |
| Left temporal pole | 0.03 | .995 | .000 | 0.56 | .830 | .000 | -0.26 | .901 | .000 | -0.04 | .970 | .000 | 0.48 | .784 | .000 |
| Left transverse temporal | -1.42 | .363 | .000 | 1.58 | .438 | .000 | 0.28 | .901 | .000 | **2.87** | **.017** | .000 | -0.05 | .974 | .000 |
| Left insula | -0.88 | .617 | .000 | 1.21 | .565 | .000 | 0.28 | .901 | .000 | 2.22 | .095 | .002 | **3.92** | **.000** | .002 |
| Right banks of superior temporal sulcus | -0.21 | .908 | .000 | -1.06 | .612 | .000 | 0.88 | .785 | .000 | -1.83 | .207 | .000 | 0.79 | .625 | .000 |
| Right caudal anterior cingulate | -0.24 | .901 | .000 | -0.47 | .833 | .000 | -0.92 | .785 | .000 | 0.72 | .690 | .001 | **2.70** | **.025** | .001 |
| Right caudal middle frontal | 1.64 | .296 | .000 | -2.36 | .313 | .001 | -2.60 | .306 | .001 | -1.79 | .210 | .000 | -0.45 | .795 | .000 |
| Right cuneus | -2.33 | .151 | .001 | 1.71 | .374 | .000 | 0.44 | .901 | .000 | 0.59 | .713 | .000 | 0.66 | .685 | .000 |
| Right entorhinal | 1.29 | .417 | .000 | -1.05 | .612 | .000 | -0.98 | .785 | .000 | 0.52 | .757 | .001 | **2.91** | **.017** | .001 |
| Right fusiform | 0.11 | .958 | .000 | -1.73 | .374 | .000 | 0.56 | .898 | .000 | 1.80 | .210 | .000 | 1.77 | .156 | .000 |
| Right inferior parietal | 1.95 | .272 | .000 | 1.36 | .559 | .000 | -0.62 | .898 | .000 | **5.54** | **.000** | .000 | -1.03 | .481 | .000 |
| Right inferior temporal | 0.31 | .883 | .000 | -0.01 | .993 | .000 | 1.76 | .512 | .000 | -0.19 | .904 | .001 | **-2.50** | **.044** | .001 |
| Right isthmus cingulate | 0.60 | .706 | .000 | 0.32 | .878 | .000 | 0.56 | .898 | .000 | 0.93 | .560 | .000 | -0.06 | .974 | .000 |
| Right lateral occipital | -1.76 | .296 | .000 | 0.19 | .920 | .000 | 0.84 | .785 | .000 | -1.03 | .514 | .000 | 2.17 | .082 | .000 |
| Right lateral orbitofrontal | -2.78 | .057 | .001 | 1.76 | .374 | .000 | 0.90 | .785 | .000 | 0.15 | .906 | .002 | **4.85** | **.000** | .002 |
| Right lingual | **-2.96** | **.041** | .001 | 0.56 | .830 | .000 | 0.29 | .901 | .000 | -0.70 | .690 | .000 | 0.53 | .765 | .000 |
| Right medial orbitofrontal | 1.61 | .296 | .000 | 0.34 | .878 | .000 | -0.20 | .919 | .000 | **-3.75** | **.000** | .001 | **3.69** | **.000** | .001 |
| Right middle temporal | -0.20 | .908 | .000 | 1.22 | .565 | .000 | 0.11 | .954 | .000 | **3.06** | **.010** | .001 | **-3.09** | **.010** | .001 |
| Right parahippocampal | -2.13 | .204 | .001 | -1.20 | .565 | .000 | -0.48 | .901 | .000 | -2.16 | .100 | .000 | 0.23 | .926 | .000 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right paracentral | -1.13 | .499 | .000 | -1.74 | .374 | .000 | 1.61 | .512 | .000 | **-2.58** | **.038** | .000 | -1.87 | .140 | .000 |
| Right pars opercularis | 0.63 | .696 | .000 | 0.86 | .764 | .000 | -2.07 | .431 | .000 | -1.19 | .457 | .000 | 1.46 | .258 | .000 |
| Right pars orbitalis | 1.19 | .482 | .000 | 0.20 | .920 | .000 | -2.39 | .385 | .001 | 1.38 | .359 | .000 | -0.65 | .685 | .000 |
| Right pars triangularis | 1.68 | .296 | .000 | 1.37 | .559 | .000 | -0.79 | .805 | .000 | -1.03 | .514 | .000 | -0.07 | .974 | .000 |
| Right pericalcarine | **-3.68** | **.000** | .002 | 0.52 | .830 | .000 | 0.88 | .785 | .000 | -0.21 | .904 | .000 | 0.21 | .926 | .000 |
| Right postcentral | -0.58 | .709 | .000 | -0.76 | .821 | .000 | 1.47 | .568 | .000 | -1.06 | .514 | .001 | **-3.31** | **.006** | .001 |
| Right posterior cingulate | 0.63 | .696 | .000 | -0.51 | .830 | .000 | -1.99 | .457 | .001 | -0.32 | .839 | .000 | -1.22 | .372 | .000 |
| Right precentral | 0.07 | .977 | .000 | -1.92 | .374 | .000 | -1.75 | .512 | .000 | **-2.98** | **.014** | .000 | -0.66 | .685 | .000 |
| Right precuneus | -0.28 | .883 | .000 | 1.33 | .559 | .000 | 0.23 | .910 | .000 | 1.47 | .345 | .001 | **-2.93** | **.014** | .001 |
| Right rostral anterior cingulate | 0.51 | .743 | .000 | 0.65 | .821 | .000 | -0.02 | .995 | .000 | **3.06** | **.010** | .001 | **2.76** | **.023** | .001 |
| Right rostral middle frontal | 0.88 | .617 | .000 | -1.17 | .565 | .000 | -1.83 | .512 | .000 | **-5.61** | **.000** | .000 | 1.80 | .148 | .000 |
| Right superior frontal | 1.72 | .296 | .000 | -3.43 | .068 | .001 | -0.78 | .805 | .000 | **-3.81** | **.000** | .000 | -0.60 | .718 | .000 |
| Right superior parietal | 1.47 | .345 | .000 | 0.70 | .821 | .000 | -0.38 | .901 | .000 | 1.47 | .345 | .000 | -1.87 | .140 | .000 |
| Right superior temporal | -1.60 | .296 | .000 | -0.29 | .887 | .000 | 0.33 | .901 | .000 | 0.51 | .757 | .001 | **-2.73** | **.023** | .001 |
| Right supramarginal | 2.26 | .163 | .000 | 1.31 | .559 | .000 | 0.85 | .785 | .000 | 0.39 | .803 | .001 | **-3.71** | **.000** | .001 |
| Right frontal pole | 1.95 | .272 | .000 | -0.66 | .821 | .000 | 2.98 | .204 | .001 | 0.19 | .904 | .000 | -1.56 | .227 | .000 |
| Right temporal pole | 0.47 | .762 | .000 | 0.27 | .894 | .000 | -1.26 | .677 | .000 | 0.40 | .803 | .000 | -0.89 | .567 | .000 |
| Right transverse temporal | -1.50 | .337 | .000 | 0.47 | .833 | .000 | -1.07 | .785 | .000 | 1.38 | .359 | .001 | -2.32 | .062 | .001 |
| Right insula | -0.72 | .696 | .000 | 0.65 | .821 | .000 | 1.58 | .512 | .000 | 1.51 | .345 | .005 | **6.86** | **.000** | .005 |

*Note*. $N$ = 9,818. Coefficients in bold are significant after FDR correction (adopting a 5% false discovery rate) for 68 tests

**Table S13.** Results examining the relationship between regional cortical thickness and environmental stress factors identified by higher-order modeling with average cortical thickness added as an additional covariate.

| Brain region | General Environmental Stress | | | Family Dynamics | | | Interpersonal Support | | | Neighborhood SES Deprivation | | | Urbanicity | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ | $\beta$ | $p_{fdr}$ | $R^2$ |
| Left banks of superior temporal sulcus | -1.78 | .201 | .000 | -1.56 | .483 | .000 | -0.62 | .868 | .000 | -0.52 | .778 | .000 | -0.60 | .789 | .000 |
| Left caudal anterior cingulate | 0.49 | .791 | .000 | -2.18 | .371 | .001 | 0.61 | .868 | .000 | 0.09 | .948 | .000 | 1.59 | .366 | .001 |
| Left caudal middle frontal | -1.94 | .186 | .000 | -0.10 | .974 | .000 | -0.33 | .868 | .000 | -1.23 | .415 | .000 | -0.50 | .824 | .000 |
| Left cuneus | **-2.95** | **.023** | .001 | 0.82 | .820 | .000 | 0.32 | .868 | .000 | -1.31 | .396 | .000 | -1.89 | .251 | .001 |
| Left entorhinal | **2.72** | **.034** | .002 | -0.33 | .943 | .000 | 0.40 | .868 | .000 | 1.00 | .498 | .000 | 1.99 | .246 | .001 |
| Left fusiform | 2.00 | .170 | .000 | 0.07 | .974 | .000 | 0.07 | .946 | .000 | 1.74 | .214 | .000 | -0.14 | .932 | .000 |
| Left inferior parietal | **4.74** | **.000** | .002 | 1.88 | .371 | .000 | -1.59 | .512 | .000 | **3.46** | **.017** | .001 | -0.46 | .825 | .000 |
| Left inferior temporal | 1.50 | .287 | .000 | -1.43 | .495 | .000 | 0.90 | .787 | .000 | 2.14 | .136 | .001 | -0.44 | .825 | .000 |
| Left isthmus cingulate | **2.68** | **.037** | .001 | -0.66 | .820 | .000 | 2.30 | .374 | .001 | 2.08 | .144 | .001 | 0.73 | .728 | .000 |
| Left lateral occipital | -0.25 | .882 | .000 | 0.60 | .820 | .000 | 0.92 | .787 | .000 | 0.18 | .899 | .000 | -0.72 | .728 | .000 |
| Left lateral orbitofrontal | -1.19 | .400 | .000 | 1.12 | .670 | .000 | 0.72 | .839 | .000 | -1.16 | .417 | .000 | -0.26 | .898 | .000 |
| Left lingual | **-4.10** | **.000** | .002 | 0.56 | .820 | .000 | 0.59 | .868 | .000 | **-3.35** | **.017** | .002 | -0.18 | .927 | .000 |
| Left medial orbitofrontal | 0.44 | .792 | .000 | -1.90 | .371 | .001 | -1.13 | .787 | .000 | 0.62 | .726 | .000 | 0.56 | .789 | .000 |
| Left middle temporal | -0.19 | .891 | .000 | 0.15 | .974 | .000 | 0.36 | .868 | .000 | 0.31 | .847 | .000 | -0.68 | .730 | .000 |
| Left parahippocampal | **-3.90** | **.000** | .003 | 0.44 | .912 | .000 | -0.41 | .868 | .000 | **-3.73** | **.000** | .003 | 0.28 | .898 | .000 |
| Left paracentral | **-3.38** | **.010** | .002 | -1.74 | .465 | .000 | 1.97 | .442 | .000 | -0.54 | .768 | .000 | -1.93 | .251 | .001 |
| Left pars opercularis | 1.21 | .392 | .000 | 1.19 | .634 | .000 | -0.11 | .946 | .000 | 2.41 | .099 | .001 | -2.49 | .177 | .001 |
| Left pars orbitalis | 2.24 | .113 | .001 | 2.34 | .371 | .001 | -1.01 | .787 | .000 | 2.12 | .136 | .001 | -1.62 | .366 | .001 |
| Left pars triangularis | 1.39 | .308 | .000 | -0.23 | .974 | .000 | 0.10 | .946 | .000 | 1.85 | .184 | .000 | -0.84 | .728 | .000 |
| Left pericalcarine | -1.90 | .194 | .001 | 0.04 | .979 | .000 | 1.32 | .664 | .000 | -1.72 | .217 | .001 | 0.30 | .893 | .000 |
| Left postcentral | -1.84 | .195 | .000 | -0.87 | .814 | .000 | 0.79 | .787 | .000 | -1.11 | .434 | .000 | -0.10 | .932 | .000 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Left posterior cingulate | -0.40 | .792 | .000 | -1.89 | .371 | .001 | 1.61 | .512 | .000 | 0.43 | .811 | .000 | 0.11 | .932 | .000 |
| Left precentral | **-3.75** | **.000** | .001 | -0.95 | .782 | .000 | -1.04 | .787 | .000 | -1.89 | .171 | .000 | -1.34 | .513 | .000 |
| Left precuneus | 0.45 | .792 | .000 | 1.96 | .371 | .000 | 1.66 | .512 | .000 | 0.63 | .726 | .000 | -1.15 | .630 | .000 |
| Left rostral anterior cingulate | 2.26 | .113 | .001 | 1.61 | .483 | .000 | 0.41 | .868 | .000 | -0.30 | .847 | .000 | 2.20 | .190 | .001 |
| Left rostral middle frontal | -1.06 | .460 | .000 | 0.80 | .820 | .000 | -0.40 | .868 | .000 | -0.64 | .726 | .000 | -0.74 | .728 | .000 |
| Left superior frontal | -0.77 | .607 | .000 | -0.73 | .820 | .000 | -1.61 | .512 | .000 | -0.83 | .590 | .000 | 0.43 | .825 | .000 |
| Left superior parietal | 0.75 | .607 | .000 | 0.37 | .943 | .000 | 0.41 | .868 | .000 | 1.13 | .426 | .000 | -0.76 | .728 | .000 |
| Left superior temporal | -1.31 | .349 | .000 | -0.10 | .974 | .000 | -0.30 | .868 | .000 | -2.20 | .127 | .000 | 1.49 | .420 | .000 |
| Left supramarginal | -0.22 | .887 | .000 | 0.18 | .974 | .000 | -1.45 | .592 | .000 | 2.05 | .146 | .000 | **-3.23** | **.023** | .001 |
| Left frontal pole | 1.29 | .353 | .000 | 1.89 | .371 | .001 | -1.27 | .664 | .000 | 1.22 | .415 | .000 | -1.30 | .528 | .000 |
| Left temporal pole | 0.15 | .891 | .000 | 0.61 | .820 | .000 | -0.25 | .892 | .000 | -0.29 | .847 | .000 | 0.22 | .904 | .000 |
| Left transverse temporal | 0.02 | .983 | .000 | 1.40 | .498 | .000 | 0.35 | .868 | .000 | 0.08 | .948 | .000 | -0.75 | .728 | .000 |
| Left insula | 0.84 | .580 | .000 | 0.70 | .820 | .000 | 0.43 | .868 | .000 | -1.19 | .417 | .000 | 2.29 | .187 | .001 |
| Right banks of superior temporal sulcus | -1.09 | .454 | .000 | -0.95 | .782 | .000 | 0.87 | .787 | .000 | -1.21 | .415 | .000 | 1.01 | .728 | .000 |
| Right caudal anterior cingulate | 0.31 | .853 | .000 | -0.59 | .820 | .000 | -0.88 | .787 | .000 | -0.24 | .859 | .000 | 0.88 | .728 | .000 |
| Right caudal middle frontal | 0.43 | .792 | .000 | -2.28 | .371 | .001 | -2.67 | .272 | .001 | 0.50 | .779 | .000 | 0.71 | .728 | .000 |
| Right cuneus | -1.54 | .283 | .000 | 1.52 | .483 | .000 | 0.50 | .868 | .000 | -1.98 | .152 | .001 | 0.24 | .904 | .000 |
| Right entorhinal | 1.65 | .238 | .001 | -1.24 | .618 | .000 | -0.92 | .787 | .000 | 0.45 | .807 | .000 | 1.74 | .310 | .001 |
| Right fusiform | 0.77 | .607 | .000 | -2.20 | .371 | .000 | 0.62 | .868 | .000 | 0.94 | .527 | .000 | 0.77 | .728 | .000 |
| Right inferior parietal | **4.40** | **.000** | .002 | 0.98 | .782 | .000 | -0.53 | .868 | .000 | **4.58** | **.000** | .002 | -1.81 | .284 | .000 |
| Right inferior temporal | -0.16 | .891 | .000 | 0.09 | .974 | .000 | 1.72 | .512 | .000 | 1.43 | .336 | .000 | -1.98 | .246 | .001 |
| Right isthmus cingulate | 1.06 | .460 | .000 | 0.14 | .974 | .000 | 0.60 | .868 | .000 | 0.27 | .847 | .000 | 0.82 | .728 | .000 |
| Right lateral occipital | -1.86 | .195 | .000 | 0.01 | .994 | .000 | 0.85 | .787 | .000 | -2.35 | .099 | .001 | 1.20 | .602 | .000 |
| Right lateral orbitofrontal | -1.80 | .201 | .000 | 1.60 | .483 | .000 | 0.97 | .787 | .000 | -2.46 | .099 | .001 | 0.59 | .789 | .000 |
| Right lingual | **-2.85** | **.027** | .001 | 0.59 | .820 | .000 | 0.31 | .868 | .000 | -2.47 | .099 | .001 | -0.07 | .945 | .000 |
| Right medial orbitofrontal | 0.42 | .792 | .000 | 0.32 | .943 | .000 | -0.22 | .905 | .000 | -2.20 | .127 | .001 | **3.33** | **.023** | .002 |
| Right middle temporal | 0.98 | .493 | .000 | 1.23 | .618 | .000 | 0.13 | .946 | .000 | 1.52 | .295 | .000 | -1.58 | .366 | .000 |
| Right parahippocampal | **-2.99** | **.023** | .002 | -1.11 | .670 | .000 | -0.51 | .868 | .000 | -2.35 | .099 | .001 | 0.37 | .848 | .000 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Right paracentral | **-2.73** | **.034** | .001 | -1.49 | .483 | .000 | 1.50 | .565 | .000 | -1.24 | .415 | .000 | -0.46 | .825 | .000 |
| Right pars opercularis | 0.62 | .697 | .000 | 0.63 | .820 | .000 | -2.03 | .442 | .000 | -1.69 | .221 | .000 | 2.41 | .181 | .001 |
| Right pars orbitalis | 1.69 | .229 | .000 | 0.20 | .974 | .000 | -2.38 | .374 | .001 | 1.53 | .295 | .000 | -0.55 | .789 | .000 |
| Right pars triangularis | 1.48 | .288 | .000 | 1.45 | .495 | .000 | -0.79 | .787 | .000 | -0.04 | .967 | .000 | 0.88 | .728 | .000 |
| Right pericalcarine | **-3.42** | **.010** | .002 | 0.58 | .820 | .000 | 0.89 | .787 | .000 | -2.39 | .099 | .001 | -0.92 | .728 | .000 |
| Right postcentral | -1.56 | .277 | .000 | -0.56 | .820 | .000 | 1.41 | .601 | .000 | -0.30 | .847 | .000 | -0.91 | .728 | .000 |
| Right posterior cingulate | 0.29 | .859 | .000 | -0.32 | .943 | .000 | -2.04 | .442 | .001 | 0.88 | .562 | .000 | -0.93 | .728 | .000 |
| Right precentral | -1.40 | .308 | .000 | -1.93 | .371 | .000 | -1.81 | .512 | .000 | -1.31 | .396 | .000 | 0.93 | .728 | .000 |
| Right precuneus | 0.17 | .891 | .000 | 1.53 | .483 | .000 | 0.20 | .905 | .000 | 1.91 | .171 | .000 | **-3.16** | **.034** | .002 |
| Right rostral anterior cingulate | 2.21 | .115 | .001 | 0.33 | .943 | .000 | 0.07 | .946 | .000 | 1.17 | .417 | .000 | 0.70 | .728 | .000 |
| Right rostral middle frontal | -1.39 | .308 | .000 | -0.91 | .792 | .000 | -1.94 | .442 | .000 | -2.43 | .099 | .001 | 2.05 | .246 | .001 |
| Right superior frontal | -0.75 | .607 | .000 | -3.06 | .136 | .001 | -0.94 | .787 | .000 | 0.54 | .768 | .000 | -0.13 | .932 | .000 |
| Right superior parietal | 1.88 | .194 | .000 | 0.78 | .820 | .000 | -0.41 | .868 | .000 | 2.92 | .054 | .001 | -2.20 | .190 | .001 |
| Right superior temporal | -1.70 | .229 | .000 | -0.08 | .974 | .000 | 0.30 | .868 | .000 | -0.31 | .847 | .000 | -1.44 | .443 | .000 |
| Right supramarginal | 2.06 | .156 | .000 | 1.60 | .483 | .000 | 0.79 | .787 | .000 | 2.81 | .057 | .001 | -2.30 | .187 | .001 |
| Right frontal pole | 1.51 | .287 | .000 | -0.61 | .820 | .000 | 2.95 | .204 | .001 | 2.03 | .146 | .001 | -0.40 | .834 | .000 |
| Right temporal pole | 0.57 | .726 | .000 | 0.27 | .969 | .000 | -1.27 | .664 | .000 | 0.96 | .524 | .000 | -0.96 | .728 | .000 |
| Right transverse temporal | -0.99 | .493 | .000 | 0.63 | .820 | .000 | -1.07 | .787 | .000 | 0.29 | .847 | .000 | -1.90 | .251 | .001 |
| Right insula | 0.92 | .526 | .000 | -0.07 | .974 | .000 | 1.75 | .512 | .000 | -1.81 | .190 | .001 | **3.79** | **.000** | .003 |

*Note*. $N$ = 9,818. Coefficients in bold are significant after FDR correction (adopting a 5% false discovery rate) for 68 tests