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Reporting Summary

Nature Portfolio wishes to improve the reproducibility of the work that we publish. This form provides structure for consistency and transparency in reporting. For further information on Nature Portfolio policies, see our Editorial Policies and the Editorial Policy Checklist.

Statistics

For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

n/a	Confirmed
☐	☒ The exact sample size (*n*) for each experimental group/condition, given as a discrete number and unit of measurement
☐	☒ A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly
☐	☒ The statistical test(s) used AND whether they are one- or two-sided *Only common tests should be described solely by name; describe more complex techniques in the Methods section.*
☐	☒ A description of all covariates tested
☐	☒ A description of any assumptions or corrections, such as tests of normality and adjustment for multiple comparisons
☐	☒ A full description of the statistical parameters including central tendency (e.g. means) or other basic estimates (e.g. regression coefficient) AND variation (e.g. standard deviation) or associated estimates of uncertainty (e.g. confidence intervals)
☐	☒ For null hypothesis testing, the test statistic (e.g. *F*, *t*, *r*) with confidence intervals, effect sizes, degrees of freedom and *P* value noted *Give P values as exact values whenever suitable.*
☒	☐ For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings
☐	☒ For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes
☐	☒ Estimates of effect sizes (e.g. Cohen's *d*, Pearson's *r*), indicating how they were calculated

Our web collection on statistics for biologists contains articles on many of the points above.

Software and code

Policy information about availability of computer code

Data collection	No custom software was used. Study data were collected and managed using Research Electronic Data Capture (REDCap) tools hosted at Boston Children's Hospital.
Data analysis	No custom software was used. Study data were analyzed using IBM SPSS Statistics for Macintosh Version 29.

For manuscripts utilizing custom algorithms or software that are central to the research but not yet described in published literature, software must be made available to editors and reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Portfolio guidelines for submitting code & software for further information.

Data

Policy information about availability of data

All manuscripts must include a data availability statement. This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A description of any restrictions on data availability
- For clinical datasets or third party data, please ensure that the statement adheres to our policy

The data for this manuscript are stored on a secure server and available from the corresponding author upon reasonable request. Data is also uploaded to The National Institute of Mental Health Data Archive (NDA).

Human research participants

Policy information about studies involving human research participants and Sex and Gender in Research.

Reporting on sex and gender	This manuscript reports on sex as a biological attribute. The child's sex was determined by parent-report. Sex data is provided at the aggregate level in analyses. The sample was comprised of 242 males (53.07%) and 214 females (46.93%). Sex-based analyses (adjustments for sex and nesting by sex) was performed for outcomes that were related to sex or associations that differed by sex.
Population characteristics	See behaviors & social sciences study design section.
Recruitment	Participants were recruited from a registry of local births comprising families who had indicated willingness to participate in developmental research.
Ethics oversight	Institutional Review Board at Boston Children's Hospital

Note that full information on the approval of the study protocol must also be provided in the manuscript.

Field-specific reporting

Please select the one below that is the best fit for your research. If you are not sure, read the appropriate sections before making your selection.

☐ Life sciences ☒ Behavioural & social sciences ☐ Ecological, evolutionary & environmental sciences

For a reference copy of the document with all sections, see nature.com/documents/nr-reporting-summary-flat.pdf

Behavioural & social sciences study design

All studies must disclose on these points even when the disclosure is negative.

Study description	Quantitative longitudinal study
Research sample	The research sample is a community sample of participants (from the Greater Boston Area) that were recruited from a registry of local births comprising families who had indicated willingness to participate in developmental research. All families were enrolled in the study while their child was an infant and were followed longitudinally.
Sampling strategy	A convenience sampling strategy was used. Sample size for the research study was selected using power calculations before recruitment and data collection to ensure that it was appropriately powered. Estimates for power calculations were based on at least 80% power, a significance level of 0.05, and to detect even small effect sizes (≤ 0.1).
Data collection	Study data were collected and managed using Research Electronic Data Capture (REDCap) tools hosted at Boston Children's Hospital. The research assistants and participating families were present at the time of data collection.
Timing	Data collection started on April 23, 2013 for the infancy visit and the last 7 year visit took place on September 27, 2023.
Data exclusions	Exclusion criteria were pre-established and participants were not included in the study if they did not meet criteria at the time of enrollment. After enrollment, families were no longer following and their data were excluded if they did not continue to meet exclusion criteria (n=29).
Non-participation	At 3 years the sample size was 456 for internalizing scores and 441 for externalizing scores. At the 5 year visit the sample size was 435. At the 7 year visit the sample size was 388.
Randomization	Participants are not allocated into experimental groups.

Reporting for specific materials, systems and methods

We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.

Materials & experimental systems

n/a	Involved in the study
☒	☐ Antibodies
☒	☐ Eukaryotic cell lines
☒	☐ Palaeontology and archaeology
☒	☐ Animals and other organisms
☒	☐ Clinical data
☒	☐ Dual use research of concern

Methods

n/a	Involved in the study
☒	☐ ChIP-seq
☒	☐ Flow cytometry
☒	☐ MRI-based neuroimaging