***eLife’s* transparent reporting form**

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**Sample-size estimation**

* You should state whether an appropriate sample size was computed when the study was being designed
* You should state the statistical method of sample size computation and any required assumptions
* If no explicit power analysis was used, you should describe how you decided what sample (replicate) size (number) to use

Please outline where this information can be found within the submission (e.g., sections or figure legends), or explain why this information doesn’t apply to your submission:

No a priori sample size estimation from a power calculation was done for this study. One reason for this is because it was not clear what would be an appropriate minimum effect size to expect for these types of novel case-control or subtype comparisons. However, we have attempted to maximize sample size as much as possible. For example, all available toddler rsfMRI data collected by the ACE laboratory was utilized in order to maximize sample size as much as possible. We have also done a power analysis to identify a minimum effect size needed given the existing sample sizes for the GeoPref ASD vs TD comparison. This information can be found in the Methods section on page 14 of the manuscript, and in Figure 2, figure supplement 2. We have also provided the reproducible code for this type of power simulation in this GitHub repository: <https://github.com/mvlombardo/geoprefrsfmri>.

**Replicates**

* You should report how often each experiment was performed
* You should include a definition of biological versus technical replication
* The data obtained should be provided and sufficient information should be provided to indicate the number of independent biological and/or technical replicates
* If you encountered any outliers, you should describe how these were handled
* Criteria for exclusion/inclusion of data should be clearly stated
* High-throughput sequence data should be uploaded before submission, with a private link for reviewers provided (these are available from both GEO and ArrayExpress)

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Inclusion/exclusion criteria can be found in the Methods section of the manuscript (pg 13-14). We did not remove any patients due to being outliers.

**Statistical reporting**

* Statistical analysis methods should be described and justified
* Raw data should be presented in figures whenever informative to do so (typically when N per group is less than 10)
* For each experiment, you should identify the statistical tests used, exact values of N, definitions of center, methods of multiple test correction, and dispersion and precision measures (e.g., mean, median, SD, SEM, confidence intervals; and, for the major substantive results, a measure of effect size (e.g., Pearson's r, Cohen's d)
* Report exact p-values wherever possible alongside the summary statistics and 95% confidence intervals. These should be reported for all key questions and not only when the p-value is less than 0.05.

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Most of the information regarding statistical analyses and results are found in the Methods section (pg 13-17), the Results section (pg 4-10), and the Figures.

(For large datasets, or papers with a very large number of statistical tests, you may upload a single table file with tests, Ns, etc., with reference to sections in the manuscript.)

**Group allocation**

* Indicate how samples were allocated into experimental groups (in the case of clinical studies, please specify allocation to treatment method); if randomization was used, please also state if restricted randomization was applied
* Indicate if masking was used during group allocation, data collection and/or data analysis

Please outline where this information can be found within the submission (e.g., sections or figure legends), or explain why this information doesn’t apply to your submission:

Patients were allocated to ASD or other groups based on clinical diagnoses (or lack thereof). No masking or randomization was done.

**Additional data files (“source data”)**

* We encourage you to upload relevant additional data files, such as numerical data that are represented as a graph in a figure, or as a summary table
* Where provided, these should be in the most useful format, and they can be uploaded as “Source data” files linked to a main figure or table
* Include model definition files including the full list of parameters used
* Include code used for data analysis (e.g., R, MatLab)
* Avoid stating that data files are “available upon request”

Please indicate the figures or tables for which source data files have been provided:

We have included a link to a GitHub repository that has tidy data and code for reproducing analyses, results, and figures shown in the paper: <https://github.com/mvlombardo/geoprefrsfmri>.