

Reporting Summary

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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, 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 code was used. Programs including FUSION and FOCUS were used for analyses following manual description.
- Data analysis No custom code was used. Programs including FUSION and FOCUS were used for analyses following manual description.

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/reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Research [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 list of figures that have associated raw data
- A description of any restrictions on data availability

Any generated data will be provided by contacting the corresponding author.

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](#)

Life sciences study design

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

- Sample size 19,099 cases and 34,194 controls
- Data exclusions No data exclusion was done.
- Replication Unfortunately, there is no other ADHD cohort large enough to attempt and replicate signals since this was using the largest ADHD GWAS
- Randomization This is not relevant to the study because it is an analysis of the ADHD GWAS, thus, randomization would've occurred at those points.
- Blinding N/A

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 | Methods |
|--|---|
| n/a Involved in the study | n/a Involved in the study |
| ☒ ☐ Antibodies | ☒ ☐ ChIP-seq |
| ☒ ☐ Eukaryotic cell lines | ☒ ☐ Flow cytometry |
| ☒ ☐ Palaeontology | ☒ ☐ MRI-based neuroimaging |
| ☒ ☐ Animals and other organisms | |
| ☒ ☐ Human research participants | |
| ☒ ☐ Clinical data | |

Human research participants

Policy information about [studies involving human research participants](#)

- Population characteristics Participant characteristics can be found in the ADHD GWAS by Demontis et al. (2018).
- Recruitment Participant recruitment can be found in the ADHD GWAS by Demontis et al. (2018)
- Ethics oversight Ethics as reported Demontis et al. (2018).

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