Reporting Summary

Nature Research 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 Research 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.

- 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
- 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 software used |
|-----------------|------------------|
| Data analysis   | All analyses conducted using Microsoft® Excel® for Microsoft 365 version 2101. |

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

All data used in the analyses can be publicly accessed. The sources and web links for all the data have been cited in the references.

Field-specific reporting
Life sciences study design

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

Sample size  n/a
Data exclusions Describe any data exclusions. If no data were excluded from the analyses, state so or if data were excluded, describe the exclusions and the rationale behind them, indicating whether exclusion criteria were pre-established.
Replication  n/a
Randomization  n/a
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  n/a
  □ Involved in the study  □ Involved in the study
  □ Antibodies  □ ChiP-seq
  □ Eukaryotic cell lines  □ Flow cytometry
  □ Palaeontology and archaeology  □ MRI-based neuroimaging
  □ Animals and other organisms
  □ Human research participants
  □ Clinical data
  □ Dual use research of concern

Clinical data

Policy information about clinical studies.
All manuscripts should comply with the ICMJE guidelines for publication of clinical research and a completed CONSORT checklist must be included with all submissions.

Clinical trial registration  see Table 1
Study protocol  see Table 1
Data collection  n/a
Outcomes  n/a