**eLife’s transparent reporting form**

We encourage authors to provide detailed information *within their submission* to facilitate the interpretation and replication of experiments. Authors can upload supporting documentation to indicate the use of appropriate reporting guidelines for health-related research (see EQUATOR Network), life science research (see the BioSharing Information Resource), or the ARRIVE guidelines for reporting work involving animal research. Where applicable, authors should refer to any relevant reporting standards documents in this 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:

| Sample-size estimation | N/A, theoretical study |
|------------------------|------------------------|

**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
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- 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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| Replicates | N/A, theoretical study |
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**Statistical reporting**
- Statistical analysis methods should be described and justified
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- 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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datasets, or papers with a very large number of statistical tests, you may upload a single table file with tests, \( N \)s, etc., with reference to sections in the manuscript.)

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- 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

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

Data in Fig. 1B and 4 are provided as Table S7 and S8. Additional data for Fig. S6 and S7 are provided in Tables S9 and S10. The computer code used to generate figures is included as part of the submission. Other figures do not have associated source data. All computer scripts (Matlab) used for other data analysis of publicly available datasets is included in the submission in computer_code_20210721.zip.