

Data fabrication and falsification

Data fabrication and falsification are serious forms of research misconduct that typically involve the intentional manipulation or creation of data to misrepresent research findings. Fabrication and falsification may be suspected in submitted manuscripts but also in published articles, even decades after publication.

Fabrication

- Consists of making up research data and/or results and reporting them as true
- Includes a researcher stating that a particular experiment was done when it was not or describing a research project (e.g. a clinical trial) that did not occur

Falsification

- Consists of manipulation of or changing of data, research materials, processes, equipment and results
- Includes altering research data or results in such a way that the report is not accurate (e.g. changing data or analysis for more desirable/favorable results)

Fabrication and falsification

Fabrication or falsification often involves:

- Numerical data
- Image manipulation

Authors, institutions and journals share a collective responsibility to maintain the integrity of the scientific record and correct it as necessary.

Accusations of data fabrication and falsification need to be fully investigated to maintain the integrity of the scientific record, especially as suspicion may ultimately prove to be unfounded.

Further information

Committee on Publication Ethics. Fabricated data in a published article <https://publicationethics.org/sites/default/files/fabricated-data-published-article-cope-flowchart.pdf>

Committee on Publication Ethics. Fabricated data in a submitted manuscript <https://publicationethics.org/sites/default/files/fabricated-data-submitted-manuscript-cope-flowchart.pdf>

Elsevier. Research fraud: falsification and fabrication in research data <https://scientific-publishing.webshop.elsevier.com/manuscript-review/research-fraud-falsification-and-fabrication-research-data/>

On Being a Scientist: A Guide to Responsible Conduct in Research (3rd edition) <https://www.ncbi.nlm.nih.gov/books/NBK214564/>

Springer Nature: Code of Conduct <https://www.springernature.com/gp/authors/book-authors-code-of-conduct>

Nature. Editorial: retractions are part of science, but misconduct isn't <https://www.nature.com/articles/d41586-024-01174-6>