

# How we promote data sharing



**In 2022, we began a pilot to facilitate data sharing for manuscripts submitted to *Nature Neuroscience*. Here, we analyze its effects on research data availability and reflect on the importance of facilitating open science.**

**O**pen science enhances the scientific process by increasing transparency, inclusiveness, and democratization of research. *Nature Neuroscience* is committed to enabling open science. Data sharing through an appropriate repository is an important step towards open science. It makes data FAIR (findable, accessible, interoperable, and reusable). In 2022, we were among the first journals in the Nature Portfolio to implement the integration of data sharing through [figshare](#) into our manuscript submission system, with a goal of improving data availability, re-usability, and reproducibility. [The pilot has been successful](#), and many more journals in the Nature Portfolio have now integrated such data sharing into their submission systems.

There can be difficulties around data deposition, such as convoluted processes, challenges regarding correctly linking data and articles, and issues related to the need for long-term data availability. Figshare is a general repository where users can make their research outputs available in a citable, shareable, and discoverable manner. It accepts any

type of file, including non-traditional research outputs, making it a dynamic repository.

Data sharing has several benefits. They include increased exposure of results across the community; more citations ([an average of 25% more citations for published articles linked to research data has been reported](#)); and compliance with data sharing requirements of publishers, institutions, and funders. Data sharing also provides long-term and easy access to the data underlying your results, thereby enhancing data transparency and reproducibility. In addition, data sharing at the manuscript submission stage enables reviewers to access your data, allowing a more comprehensive review process.

By integrating figshare into our manuscript submission system, we aim to reduce the hassle of data deposition, at no financial cost to the authors. The way it works is simple. When authors submit a manuscript to *Nature Neuroscience*, they are given the option to also submit the underlying [research data](#) to figshare, complete with a brief metadata form to provide context. The deposited data are stored privately, can be viewed and edited during revision, receive a unique and citable DOI (digital object identifier), and are publicly released at publication. Sensitive metadata should be adequately de-identified and appropriate consent obtained before sharing.

The pilot ran from April 2022 to June 2023 and we observed an overall improvement in data sharing practices for the papers published in our journal. The percentage of

published papers linked to the data underlying the results increased from 52% in 2021 to 58% and 71% in 2022 and 2023, respectively. There was a similar increase in the percentage of papers with data deposited in other general repositories (such as [Zenodo](#)). Concurrently, papers published in *Nature Neuroscience* that contain the statement “data are available upon request” declined from 59% in 2021 to 38% in 2022 and 2023, and papers stating that data are publicly available increased from 45% in 2020 to 60% in 2022 and 2023.

For some types of data, discipline-specific repositories must be used, or data should be provided in a different format, such as source data. Source data include numerical data underlying the graphs, unprocessed images of gels and blots, and statistical analyses included in the published papers. [Nature Neuroscience recommends deposition](#) of large datasets in recognized and public repositories. We mandate data deposition of DNA and RNA sequencing, proteomics, genetics, and molecular structural data in community-endorsed repositories and require that custom code or algorithms used to generate the results reported are made available.

In summary, we are excited to report positive trends in data sharing practices in the papers we publish. We encourage data sharing whenever possible and we are committed to providing guidance and support to enable best practices in this endeavor.

Published online: 1 December 2023