

## Guide to Authors

### AIMS AND SCOPE OF JOURNAL

*Nature Neuroscience* is a multidisciplinary journal that publishes papers of the highest quality and significance in all areas of neuroscience. The editors welcome contributions in molecular, cellular, systems and cognitive neuroscience, as well as psychophysics, computational modeling and diseases of the nervous system. No area is excluded from consideration, although priority is given to studies that provide fundamental insights into the functioning of the nervous system.

*Nature Neuroscience* provides readers and authors high visibility, emphasis on interdisciplinary communication, accessibility to a broad readership, high standards of copy editing and production, rigorous peer review, rapid publication, and independence from academic societies and other vested interests.

In addition to primary research, *Nature Neuroscience* publishes news and views, reviews, editorials, commentaries, perspectives, book reviews and correspondence. In this way, the journal aims to be the voice of the worldwide neuroscience community.

### SAMPLE ISSUE

Free online access to the [November 2006](#) issue.

### EDITORIAL PROCESS

The overview of the journal's [manuscript decision process](#) includes submission, editorial decision on whether the paper should be reviewed, peer review, decisions after review, revision, acceptance in principle, final submission and acceptance, proofs, advance online publication, and print publication. Before submitting a paper, authors should consult our [editorial policies](#) as well as [technical tips](#) for using our online submission system.

Please also consult our general guide for [manuscript preparation and submission](#), which includes information on article formats, journal style, and figure preparation tips. Note that procedures for initial submission, revision, and final submission are slightly different, so please consult the directions before proceeding to the [online submission system](#). Presubmission inquiries are not a prerequisite for the regular submission process, but are intended as a mechanism for authors to receive rapid feedback on whether a manuscript in preparation is likely to be of interest to the journal. We encourage authors who have already prepared their manuscripts to bypass the presubmission inquiry process and upload their papers as a regular submission to the journal.

Journals in the Nature family no longer take copyright on the primary research articles that we publish. Instead, we ask authors to sign a [license](#) for us to publish their work. US government employees [sign a different license](#).

### EDITORS AND CONTACT INFORMATION

Like the other Nature titles, *Nature Neuroscience* has no external editorial board. Instead, all editorial decisions are made by a team of full-time professional editors. For information on their research backgrounds and scientific interests, see About the Editors.

A full list of journal staff appears on the [masthead](#).

### RELATIONSHIP TO OTHER NATURE JOURNALS

*Nature Neuroscience* is editorially independent, and its editors make their own decisions, independent of the other Nature journals. If a paper is rejected from one Nature journal, the authors can use an automated manuscript transfer service to submit the paper to another Nature journal via a link sent to them by the editor handling the manuscript. Authors should note that referees' comments (including any confidential comments to the editor) and identities are transferred to the editor of the second journal along with the manuscript. In that case, the journal editors will take the previous reviews into account when making their decision, although in some cases the editors may choose to take advice from additional or alternative referees. Alternatively, authors may choose to request a fresh review, in which case they should not use the automated transfer link, and the editors will evaluate the paper without reference to the previous review process. More details are available on the [manuscript transfer service](#) and on the [relationships between Nature titles](#).

### EDITORIAL AND PUBLISHING POLICIES

Please see [authors & referees @ npg](#) for detailed information about author and referee services and publication policies at the Nature family of journals. These journals, including *Nature Neuroscience*, share a number of common policies including the following:

- [Author responsibilities](#)
- [License agreement and author copyright](#)
- [Embargo policy and press releases](#)
- [Use of experimental animals and human subjects](#)
- [Competing financial interests](#)
- [Availability of materials and data](#)
- [Digital image integrity and standards](#)
- [Security concerns](#)
- [Refutations, complaints and corrections](#)
- [Duplicate publication](#)
- [Confidentiality and pre-publicity](#)
- [Plagiarism and fabrication](#)

### IMPACT FACTOR

The 2008 impact factor for *Nature Neuroscience* is 14.164, according to the Thomson Reuters Journal Citation Reports.

The 2008 impact factor represents the number of citations in 2008 to papers published in 2006 and 2007 divided by the total number of papers published in 2006 and 2007. A more detailed explanation of impact factors appears on the [Thomson Reuters web site](#). The use, and misuse, of impact factors was discussed in *Nature Neuroscience* editorials in [1998](#) and [2003](#).

## EDITORIAL BLOGS

We encourage community participation in all Nature journal blogs. [Nautilus](#) is a blog for authors and aspiring authors of Nature Publishing Group journals. [Peer-to-Peer](#) is a blog for reviewers and is about peer review. Other Nature Publishing Group blogs can be found on the [blog index page](#).

## ABBREVIATION

The correct abbreviation for abstracting and indexing purposes is *Nat. Neurosci.*

## ISSN AND EISSN

The international standard serial number (ISSN) for *Nature Neuroscience* is 1097-6256, and the electronic international standard serial number (EISSN) is 1546-1726.

## FURTHER EDITORIAL INFORMATION

Please see the following editorials for more information on various aspects of journal policy.

[Why did we launch \*Nature Neuroscience\*? \(May 98\)](#)  
[Use and abuse of impact factors \(December 98\)](#)  
[Anonymity in peer review \(March 99\)](#)  
[Clarity in scientific writing \(February 00\)](#)  
[How to be a successful author \(July 00\)](#)  
[What makes a good fMRI paper? \(April 01\)](#)  
[What makes a good multidisciplinary paper? \(July 01\)](#)  
[Advance online publication \(August 01\)](#)  
[Policy on financial disclosure \(October 01\)](#)  
[How we handle appeals \(October 02\)](#)  
[Retractions \(December 02\)](#)  
[Policy on preprint servers \(May 03\)](#)  
[Papers reviewed at other Nature journals \(June 03\)](#)  
[New sections in \*Nature Neuroscience\* \(June 03\)](#)  
[Interpreting impact factors \(August 03\)](#)  
[Financial disclosure for review authors \(October 03\)](#)  
[Guidelines for single-patient studies \(February 04\)](#)  
[Expanding \*Nature Neuroscience\* \(January 05\)](#)  
[Using statistical tests \(February 05\)](#)

## CONTENT TYPES

### PRIMARY RESEARCH FORMATS

An **Article** is a substantial novel research study, with a complex story often involving several techniques or approaches. The main text (excluding abstract, Methods, references and figure legends) is 2,000–4,000 words. The abstract is typically 100–150 words, unreferenced. Articles have no more than 8 display items (figures and/or tables). An introduction (without heading) is followed by sections headed Results, Discussion and Methods. The Results and Methods should be divided by topical subheadings; the Discussion may contain subheadings at the editors' discretion. If statistical testing was used to analyze the data, the Methods section must contain a subsection on statistical analysis. References are limited to 50.

Articles include received/accepted dates. They may be accompanied by supplementary information. Articles are peer reviewed, and authors must provide a [competing financial interests](#) statement before publication.

A **Technical Report** presents primary research data on a new technique that is likely to be influential. This format is not a review of technology, but its primary report in the literature. It may involve a new biological discovery to prove the usefulness of the technique, but this is not a requirement. Technical Reports have a format broadly similar to that of Articles, though many Technical Reports are shorter than a typical Article. They begin with an unreferenced abstract (typically 150 words) followed by separate sections for introduction, Results, Discussion (with optional subheadings) and Methods. If statistical testing was used to analyze the data, the Methods section must contain a subsection on statistical analysis. There is no strict limit on the number of display items. References are normally limited to 30, but this can be flexible at the editors' discretion.

Technical Reports include received/accepted dates. They may be accompanied by supplementary information. Technical Reports are peer reviewed, and authors must provide a [competing financial interests](#) statement before publication.

A **Brief Communication** reports a concise study of high quality and broad interest. This format may not exceed 3 printed pages. Brief Communications begin with a brief unreferenced abstract (3 sentences, no more than 70 words), which will appear on Medline. The main text is typically 1,000–1,200 words, including abstract, references and figure legends, and contains no headings. Brief Communications normally have no more than 2 display items, although this may be flexible at the discretion of the editor, provided the page limit is observed. References are limited to 15. Article titles are omitted from the reference list.

Brief Communications include received/accepted dates. They may be accompanied by supplementary information. Brief Communications are peer reviewed, and authors must provide a [competing financial interests](#) statement before publication.

A **Resource** presents a large data set (such as a comprehensive list of proteins in an organelle or tissue, a genome-wide antibody library, coordinated analysis of cells or reagents by several different laboratories) of broad utility, interest and significance to the community. The main text (excluding abstract, Methods, references and figure legends) is approximately 3,000 words. The abstract is typically 100–150 words, unreferenced. Resources have no more than 6 display items (figures and/or tables). An introduction (without heading) is followed by sections headed Results, Discussion and Methods. The Results and Methods should be divided by topical subheadings; the Discussion does not contain subheadings. If statistical testing was used to analyze the data, the Methods section must contain a subsection on statistical analysis. References are limited to 50.

Resources include received/accepted dates. They may be accompanied by supplementary information. Resources are peer reviewed, and authors must provide a [competing financial interests](#) statement before publication.

### OTHER FORMATS

**Correspondence** (formerly Letters to the Editor) is a flexible format that may include anything of interest to the journal's readers, from

policy debates to announcements to ‘matters arising’ from research papers. A Correspondence may describe primary research data, but only in summary form; this format is not intended for full presentation of data. Correspondence should never be more than one printed page, and usually much less. The number of references should not exceed 10 for either the Correspondence or its Reply, and article titles are omitted from the reference list. Titles for correspondence are supplied by the editors.

Authors must submit a [competing financial interests](#) statement, which is printed only if they declare that they have competing interests. In cases where a correspondence is critical of a previous research paper, the authors are normally given the option of publishing a brief reply. Criticism of opinions or other secondary matter does not involve an automatic right of reply.

Refutations are always peer reviewed. Other types of Correspondence may be peer reviewed at the editors’ discretion.

**News and Views** are by prior arrangement only. They may be linked to articles in *Nature Neuroscience*, or they may focus on papers of exceptional significance that are published elsewhere. Unsolicited contributions will not normally be considered, although prospective authors are welcome to make proposals. News and Views include a competing financial interests statement. News and Views are not peer reviewed. Authors must provide a competing financial interests statement before publication.

**Book Reviews** are by prior arrangement only, although suggestions are welcome. Book reviews are not peer reviewed. Authors must provide a [competing financial interests](#) statement before publication.

A **Review** is an authoritative, balanced and scholarly survey of recent developments in a research field. The requirement for balance need not prevent authors from proposing a specific viewpoint, but if there are controversies in the field, the authors must treat them in an even-handed way. Reviews are normally 3,000–4,000 words, and illustrations are strongly encouraged. References are limited to 100, with exceptions possible in special cases. Citations should be selective, and, in the case of particularly important studies ( $\leq 10\%$  of all the references), we encourage authors to provide short annotations explaining why these are key contributions. The scope of a Review should be broad enough that it is not dominated by the work of a single laboratory, and particularly not by the authors’ own work.

Review authors must provide a [competing financial interests](#) statement before publication. Received/accepted dates are not included. Reviews are always peer reviewed to ensure factual accuracy, appropriate citations and scholarly balance.

**Commentary** is a very flexible format; Commentaries may be on policy, science and society or purely scientific issues. The main criteria are that they should be of immediate interest to a broad readership and should be written in an accessible, non-technical style. Their length is typically 1–4 pages, although some may be longer. Because the content is variable, the format is also flexible. Commentaries do not normally contain primary research data, although they may present ‘sociological’ data (funding trends, demographics, bibliographic data, etc.). References are limited to 25, and article titles are omitted from the reference list.

Commentary authors must provide a [competing financial interests](#) statement before publication. Commentaries may be peer reviewed at the editors’ discretion.

**Perspective** is a format for scholarly reviews and discussions of the primary research literature that are too technical for a Commentary but do not meet the criteria for a Review—either because the scope is too narrow, or because the author is advocating a controversial position or a speculative hypothesis or discussing work primarily from one group. Two reviews advocating opposite sides in a research controversy are normally published as Perspectives. The text should not normally exceed 3,000 words. References are limited to 50.

Perspective authors must provide a [competing financial interests](#) statement before publication. Received/accepted dates are not included. Perspectives are always peer reviewed.

## HOW TO SUBMIT

### ONLINE SUBMISSION

We strongly prefer to receive manuscripts via our [online submission system](#). Using this system, authors can upload manuscript files (text, figures and supplementary information, including video) directly to our office and check on the status of their manuscripts during the review process. In addition, reviewers can access the manuscript (in a highly secure fashion that maintains referee anonymity) over a direct internet link, which speeds the review process. Please consult our [technical information](#) on file formats and tips for using the system effectively. Revisions, including manuscripts submitted after a [presubmission inquiry](#), should be uploaded via the link provided in the editor’s decision letter. Please do not submit revisions as new manuscripts.

### SUBMISSION POLICIES

Submission to *Nature Neuroscience* is taken to imply that there is no significant overlap between the submitted manuscript and any other papers from the same authors under consideration or in press elsewhere. (Abstracts or unrefereed web preprints do not compromise novelty.) The authors must include copies of all related manuscripts with any overlap in authorship that are under consideration or in press elsewhere. If a related manuscript is submitted elsewhere while the manuscript is under consideration at *Nature Neuroscience*, a copy of the related manuscript should be sent to the editor.

The primary affiliation for each author should be the institution where the majority of their work was done. If an author has subsequently moved, the current address may also be stated.

If the manuscript includes personal communications, please provide a written statement of permission from any person who is quoted. E-mail permission messages are acceptable.

For bioinformatics manuscripts, please send four copies of a CD containing any new algorithms for data analysis along with other resources necessary to use the algorithm, such as the user manual or spreadsheets. The CDs should be mailed to *Nature Neuroscience*, 75 Varick Street, 9th floor, New York, NY 10013, USA.

For further information on the review process and how editors make decisions, please see the [manuscript decisions](#) page.

A high priority of *Nature Neuroscience* is that all papers be accessible to nonspecialists. Manuscripts are subject to substantial editing to achieve this goal. After acceptance, a copy editor may make further changes so that the text and figures are readable and clear to those outside the field, and so that papers conform to our style. Contributors are sent proofs and are welcome to discuss proposed changes with the editors, but *Nature Neuroscience* reserves the right to make the final decision about matters of style and the size of figures.

The editors also reserve the right to reject a paper even after it has been accepted if it becomes apparent that there are serious problems with the scientific content or with violations of our publishing policies.

Additional editorial policies can be found on the Nature journals [joint policies](#) page. This page includes information on manuscripts reviewed at other Nature journals, competing financial interests declarations, pre-publication publicity, deposition of data as a condition of publication, availability of data and reagents after publication, human and animal subjects, digital image integrity, biosecurity, refutations, complaints and correction of mistakes in the journal, duplicate publication, confidentiality and plagiarism.

### COSTS

There is a charge of \$525 for the first color figure and \$262.50 for each additional color figure. Otherwise, there are no submission fees or page charges.

### ADVANCE ONLINE PUBLICATION

*Nature Neuroscience* provides Advance Online Publication (AOP) of research articles, which benefits authors with an earlier publication date and allows our readers access to accepted papers several weeks before they appear in print. Note that papers published online are definitive and may be altered only through the publication of a print corrigendum or erratum, so authors should make every effort to ensure that the page proofs are correct. All AOP articles are given a unique digital object identifier (DOI) number, which can be used to cite the paper before print publication. For details, please see [about advance online publication](#).

### COVERS AND OTHER ARTWORK

Authors of accepted papers are encouraged to submit images for consideration as a cover. Cover images are normally linked to a specific paper in that issue, but we may also be able to use other images elsewhere in the journal, such as on the table of contents. Illustrations are selected for their scientific interest and aesthetic appeal. Please send prints or electronic files (rather than slides) in the first instance. Please also include a clear and concise legend explaining the image.

### PREPARING THE MANUSCRIPT

*Nature Neuroscience* is read by scientists from diverse backgrounds. In addition, many are not native English speakers. Authors should therefore give careful thought to how their findings may be communicated clearly. Although a shared basic knowledge of biology may be assumed, please bear in mind that the language and concepts that are standard in one subfield may be unfamiliar to nonspecialists. Thus, technical jargon should be avoided as far as possible and clearly explained where its use is unavoidable. Abbreviations, particularly those that are not standard, should also be kept to a minimum. The background, rationale and main conclusions of the study should be clearly explained. Titles and abstracts in particular should be written in language that will be readily intelligible to any scientist. We strongly recommend that authors ask a colleague with different expertise to review the manuscript before submission, in

order to identify concepts and terminology that may present difficulties to nonspecialist readers.

The [content types](#) page describes the types of contributions that may be submitted to the journal, along with their length and figure limits. The journal's format requirements are described below.

Manuscripts reporting new structures should contain a table summarizing structural and refinement statistics. Templates for such tables describing [NMR](#) and [X-ray crystallography](#) data are available here. To facilitate assessment of the quality of the structural data, a stereo image of a portion of the electron density map (for crystallography papers) or of the superimposed lowest energy structures (>10; for NMR papers) should be provided with the submitted manuscript. If the reported structure represents a novel overall fold, a stereo image of the entire structure (as a backbone trace) should also be provided.

Please use American English spelling throughout.

At this time, we are not able to accept manuscripts in Word 2007 format.

Acknowledgments should be brief and should not include thanks to anonymous referees and editors, or effusive comments. Grant or contribution numbers may be acknowledged. *Nature Neuroscience* requires an Author Contribution statement as described in the [Authorship](#) section of our [joint Editorial policies](#).

The Methods section of original research articles will appear only online. Print readers will be directed to the online version of the paper for detailed methods and associated references. Please provide a Methods section with subsections detailing all the methods used in the paper. The Methods section should be no longer than 2,000 words and should be placed at the very end of the manuscript, after the Acknowledgments, Author Contributions, figure legends and tables, but before the references.

A single list of references should be provided, with any new citations that appear in the Methods section numbered consecutively beginning after the last reference cited in the main text, figure legends and tables. The combined reference number in the main text, figure legends, tables and online Methods should not exceed 50. Only one publication is given for each number, and footnotes are not used. Only papers that have been published or accepted by a named publication should be in the numbered list; meeting abstracts that are not published and papers in preparation should be mentioned in the text with a list of authors (or initials if any of the authors are co-authors of the present contribution). URLs for web sites should be cited parenthetically in the text, not in the reference list; articles in formal, peer-reviewed online journals should be included in the reference list. Grant details and acknowledgments are not permitted as numbered references.

All authors should be included in reference lists unless there are more than five, in which case only the first author should be given, followed by 'et al.'. Authors should be listed last name first, followed by a comma and initials of given names. Titles of cited articles are required for Articles, Perspectives and Reviews, but not for Commentaries, Brief Communications, Correspondence or News and Views. Titles of articles should be in Roman text and titles of books in italics; the first word of the title is capitalized, the title written exactly as it appears in the work cited, ending with a period. Journal names are italicized

and abbreviated (with periods) according to common usage; refer to [Index Medicus](#) for details. Volume numbers appear in bold. For book citations, the publisher and city of publication are required (e.g., John Wiley & Sons, Hoboken, New Jersey, USA, 2003).

Figure legends for Articles begin with a brief title for the whole figure and continue with a short description of each panel and the symbols used, focusing on describing what is shown in the figure and de-emphasizing methodological details. Each legend should total no more than 250 words. Brief Communications have short figure legends (generally less than 100 words), which may include details of methods.

## GENE NOMENCLATURE

Authors should use approved nomenclature for gene symbols, and use symbols rather than italicized full names (*Ttn*, not *titin*). Please consult the appropriate nomenclature databases for correct gene names and symbols. A useful resource is [LocusLink](#). Approved human gene symbols are provided by HUGO Gene Nomenclature Committee (HGNC), e-mail: [hgnc@genenames.org](mailto:hgnc@genenames.org); see also [www.genenames.org](http://www.genenames.org). Approved mouse symbols are provided by The Jackson Laboratory, e-mail: [nomen@informatics.jax.org](mailto:nomen@informatics.jax.org); see also <http://www.informatics.jax.org/mgihome/nomen>.

For proposed gene names that are not already approved, please submit the gene symbols to the appropriate nomenclature committees as soon as possible, as these must be deposited and approved before publication of an article.

Avoid listing multiple names of genes (or proteins) separated by a slash, as in '*Oct4/Pou5f1*', as this is ambiguous (it could mean a ratio, a complex, alternative names or different subunits). Use one name throughout and include the other at first mention: '*Oct4* (also known as *Pou5f1*)'.

## STATISTICAL GUIDELINES

Every article that contains statistical testing should state the name of the statistical test, the *n* for each statistical analysis, the comparisons of interest, a justification for the use of that test (including, for example, a discussion of the normality of the data when the test is appropriate only for normal data), the alpha level for all tests, whether the tests were one-tailed or two-tailed, and the actual *P* value for each test (not merely "significant" or " $P < .05$ "). It should be clear what statistical test was used to generate every *P* value. In the case of Brief Communications, these details should be reported in the text or the figure captions.

Data sets should be summarized with descriptive statistics, which should include the *n* for each data set, a clearly labeled measure of center (such as the mean or the median), and a clearly labeled measure of variability (such as standard deviation or range). Ranges are more appropriate than standard deviations or standard errors for small data sets. Graphs should include clearly labeled error bars. Authors must state whether a number that follows the  $\pm$  sign is a standard error (s.e.m.) or a standard deviation (s.d.).

Authors must justify the use of a particular test and explain whether their data conform to the assumptions of the tests. Three errors are particularly common.

- **Multiple comparisons:** When making multiple statistical comparisons on a single data set, authors should explain how they adjusted the alpha level to avoid an inflated Type I error rate, or they should select statistical tests appropriate for multiple groups (such as ANOVA rather than a series of *t*-tests).

- **Normal distribution:** Many statistical tests require that the data be approximately normally distributed; when using these tests, authors should explain how they tested their data for normality. If the data do not meet the assumptions of the test, then a non-parametric alternative should be used instead.
- **Small sample size:** When the sample size is small (less than about 10), authors should use tests appropriate to small samples or justify their use of large-sample tests.

There is a [checklist](#) available to help authors minimize the chance of statistical errors.

## PREPARING THE FIGURES

Authors are responsible for obtaining permission to publish any figures or illustrations that are protected by copyright, including figures published elsewhere and pictures taken by professional photographers. The journal cannot publish images downloaded from the internet without appropriate permission.

Figures should be uploaded upon submission via our [online submission system](#), in one of our [preferred formats](#), if possible. Please use the smallest file size that provides sufficient resolution, preferably less than 1 MB, so that referees do not have to download extremely large files. When a paper is accepted, the editors will request high-resolution files suitable for publication.

Unnecessary figures and parts (panels) of figures and tables should be avoided: data presented in small tables or histograms, for instance, can generally be stated briefly in the text instead. Figures should not contain more than one panel unless the parts are logically connected; each panel of a multipart figure should be sized so that the whole figure can be reduced by the same amount and reproduced on the printed page at the smallest size at which essential details are visible. When a manuscript is accepted for publication, we will ask for high-resolution figure files, possibly in a different electronic format. This information will be included in the acceptance letter.

Lettering on figures should be in Helvetica or Arial; if possible, the same typeface in approximately the same font size should be used for all figures in a paper. Use symbol font for Greek letters. Figures should be on a white background and should avoid excessive boxing, unnecessary color, spurious decorative effects (such as three-dimensional 'skyscraper' histograms) and highly pixelated computer drawings. The vertical axis of histograms should not be truncated to exaggerate small differences. Labeling must be of sufficient size and contrast to be readable after appropriate reduction. The thinnest lines in the final figure should be no smaller than one point wide. Authors will see a proof of figures. Reasonable requests to enlarge figures will be considered, but editors will make the final decision on figure size.

Figures divided into parts should be labeled with a lower-case, bold a, b, and so on, in the same typesize as used elsewhere in the figure. Lettering in figures should be in lower-case type, with only the first letter of each label capitalized. Units should have a single space between the number and the unit, and follow SI nomenclature (for example, ms rather than msec) or the nomenclature common to a particular field. Thousands should be separated by commas (1,000). Unusual units or abbreviations should be spelled out in full or defined in the legend. Scale bars should be used rather than magnification factors, with the length of the bar defined in the legend rather than on the bar itself. In general, please use visual cues rather than verbal explanations, such as "open red triangles", in the legend.

Authors are encouraged to consider the needs of colorblind readers (a substantial minority of the male population) when choosing colors for figures. Many colorblind readers cannot interpret micrographs presented in green and red, for example. Thus, we encourage authors to submit micrographs in color combinations other than green and red.

If the manuscript is initially submitted in hard copy (which is no longer preferred and may cause delays), please follow the instructions below:

Figures should be presented on separate sheets of paper. Please include one original and three copies of sufficient quality for review. The figures should be attached to the review copies of the manuscript (rather than enclosed in a separate envelope). In general, multi-part figures should be arranged as they would appear in the final version. Please avoid sending oversized figures (larger than 8.5 × 11" or A4) wherever possible. Each copy should be marked with the figure number and the corresponding author's name. Reduction to the scale that will be used on the page is not necessary, but any special requirements (such as the separation distance of stereo pairs) should be clearly specified.

### DIGITAL FIGURE GUIDELINES

Please read the [digital images](#) integrity and standards policy. When possible, we prefer to use original digital figures to ensure the highest quality reproduction in the journal. When creating and submitting digital files, please follow the guidelines below.

#### Formats

For publication, we can only use TIFF, EPS or postscript (ps) files in PC or Macintosh format, preferably from PhotoShop or Illustrator software. We cannot accept Freehand, Canvas, PowerPoint, CorelDRAW or MacDrawPro files. These files must be converted to postscript (ps) format.

#### Resolution and figure quality

Figure files must be supplied at an appropriate resolution for print publication:

- Color, 300 DPI minimum; please convert all color files into CMYK mode
- Grayscale, 600 DPI minimum for blots and black & white photographs
- Line art, 1200 DPI minimum for graphs and illustrations

Figures that do not meet these standards will not reproduce well and may delay publication until we receive high-resolution images or high-quality printouts. We cannot be held responsible for assuming the cost of corrected reprints should poor quality images need to be used.

Please do not scan laser printouts of figures and send them to us as digital files. The dot pattern on a laser print often creates a moire pattern when scanned.

Please remove panel letters (a, b, c, etc.) that are directly over other features of figures, especially in photographic or modeling images, from the electronic files; we will replace them later with our own font. In such cases, please indicate in a separate electronic file where panel letters should go.

#### Tables

Please submit tables in Word format at the end of your text document.

#### Stereo images

Stereo diagrams should be presented for divergent 'wall-eyed' viewing, with the two panels separated by ~5.5 cm. In the final accepted version of the manuscript, the stereo images should be submitted at their final print size.

#### FTP site

If necessary, you can use any type of FTP software to place files on our FTP site, although we prefer to receive figures through our electronic submission system if possible. Name your files with the corresponding author's name, figure number (and letter if applicable), and file format (for example, Dr. Smith's Figure 3 in TIFF format: Smith Fig3.tif; Dr. Smith's Figure 3a in EPS format, Smith Fig3a.eps). Please compress your files before uploading.

Site address: ftp.nature.com

User name: nn

Password: brain

### SUPPLEMENTARY INFORMATION

Authors should note that supplementary information is not copy-edited by *Nature Neuroscience*, so they should ensure that it is clearly and succinctly presented and that the style of terms conforms with the rest of the paper. The following guidelines detail the creation, citation and submission of supplementary information. Please note that modification of supplementary information after the paper is published requires a formal correction, so authors are encouraged to check their supplementary information carefully before submitting the final version.

Where there is supplementary information to be included exclusively in the online version of a paper published in *Nature Neuroscience*, please follow these guidelines, or publication may be delayed.

Refer to each piece of supplementary information at least once within the text of the main article (the article that is published in the print issue of the journal), as follows:

Designate each item as Supplementary Table, Figure, Figure Legend, Data, Discussion, Equations, Video, Video Legend, Audio, Audio Legend, Tutorial, Note, or Methods. Number Supplementary Tables and Figures as, for example, "Supplementary Table 1," and provide a title for each one (for figures, please include the number and title in the caption). This numbering should be separate from that used in tables and figures appearing in the main printed article. Supplementary Note or Methods should not be numbered; titles for these are optional.

Refer to each piece of supplementary material at the appropriate point(s) in the main article. Be sure to include the word "Supplementary" each time one is mentioned.

Use the following samples as a guide (note: abbreviate "Figure" as "Fig" when in parentheses).

"Table 1 provides a selected subset of the most active compounds. The entire list of 96 compounds can be found as **Supplementary Table 1**."

"The biosynthetic pathway of L-ascorbic acid in animals involves inter mediates of the D-glucuronic acid pathway (see **Supplementary Fig. 2**). Figure 2 shows..."

Figure files should be submitted as web-ready files through *Nature Neuroscience's* [online submission system](#). Manuscripts will not be accepted for publication by *Nature Neuroscience* until supplementary information is received.

With the exception of spreadsheet, audio and video files, please submit the supplementary information as a single combined PDF if possible. If necessary, we can accept any of these formats:

.txt	Plain ASCII text
.gif	GIF image
.htm	HTML document
.doc	MS Word document
.jpg	JPEG image
.swf	Flash movie
.xls	MS Excel spreadsheet
.pdf	Adobe Acrobat file
.mov	QuickTime movie
.ppt	MS Power Point slide
.wav	Audio file

File sizes should be as small as possible, with a maximum size of 3 MB, so that they can be downloaded quickly. Images should be just large enough to view when the screen resolution is set to 640 × 480 pixels. Audio and video files should use a frame size no larger than 320 × 240 pixels. Remember to include a brief title and legend (incorporated into the file to appear near the image) as part of every electronic figure submitted, and a title as part of every table.

Further queries about submission and preparation of supplementary information should be directed to the editor handling the manuscript.

## MANUSCRIPT DECISIONS

### PRESUBMISSION INQUIRIES

Researchers may request informal feedback from the editors on the journal's interest in a particular manuscript under preparation. A short 'presubmission inquiry' can be sent through the [online submission system](#). Researchers should include a letter explaining the major question addressed by the work, the methodologies used to gather the data, the interest to a broad scientific readership, the new results and why they are significant. If an abstract is available, this should also be included. If authors have already written the manuscript, they are encouraged to submit it in its entirety via the [online submission system](#).

Editors can give authors a rapid judgment of whether a particular paper is likely to be of interest, but cannot promise that the paper will be reviewed until they have received the entire manuscript as a regular submission. In cases where editors decline a full submission, authors are still free to submit through our [online submission system](#) so that editors have an opportunity to evaluate the paper in full.

### INITIAL SUBMISSION

Papers should be submitted via the [online submission system](#). Each new submission is assigned to a primary editor, who reads the paper, consults with the other editors, and decides whether it should be sent for peer review. Many papers describing solid studies of interest to those in the field are nonetheless judged to be unlikely to compete successfully with the best work submitted to the journal.

Like other journals in the Nature family, *Nature Neuroscience* has no external editorial board. However, if a paper's importance within the field is unclear, an editor may request advice from outside experts in deciding whether to review it. The novelty of a submitted paper is considered to be compromised if it has significant conceptual overlap with a published paper or one accepted for publication by *Nature Neuroscience*. Preprint archives do not compromise novelty.

If a paper was previously reviewed at another Nature journal, the authors can use an automated manuscript transfer service to transfer the referees' reports to *Nature Neuroscience* via a link sent by the editor who handled the manuscript. In that case, the journal editors will take the previous reviews into account when making their decision, although in some cases the editors may choose to take advice from additional or alternative referees. Alternatively, authors may choose to request a fresh review, in which case they should not use the automated transfer link, and the editors will evaluate the paper without reference to the previous review process. However, this decision must be made at the time of initial submission and cannot be changed later. If the authors ask the editors to consider the previous reviews, they should include a note explaining the relationship between the submitted manuscript and the previous submission and (assuming it has been revised in light of the referees' criticisms) giving a point-by-point response to the referees. In cases where the work was felt to be of high quality, papers can sometimes be accepted without further review, but if there were serious criticisms, the editors will consider them in making the decision. In the event of publication, the received date is the date of submission to *Nature Neuroscience*. More details are available on the [manuscript transfer service](#) and on the [relationships between Nature titles](#).

### PEER REVIEW

The corresponding author is notified by e-mail when the editor decides to send a paper for review. Authors may indicate a limited number of scientists who should not review the paper. Excluded scientists must be identified by name. Authors may also suggest referees; these suggestions are often helpful, although they are not always followed. By policy, referees are not identified to the authors, except at the request of the referee.

Conceptually similar manuscripts are held to the same editorial standards as far as possible, and so they are often sent to the same referees. However, each of the cosubmitted manuscripts must meet the criteria for publication without reference to the other paper. Thus if one paper is substantially less complete or convincing than the other, it may be rejected, even if the papers reach the same conclusion.

### DECISION AFTER REVIEW AND REVISION

When making a decision after review, editors consider not only how good the paper is now, but also how good it might become after revision.

In cases where the referees have requested well-defined changes to the manuscript that do not appear to require extensive further experiments, editors may request a revised manuscript that addresses the referees' concerns. The revised version is normally sent back to some or all of the original referees for re-review. The decision letter will specify a deadline (typically a few weeks), and revisions that are returned within this period will retain their original submission date.

In cases where the referees' concerns are more wide-ranging, editors will normally reject the manuscript. If the editors feel the work is of potential interest to the journal, however, they may express interest in seeing a future resubmission. The resubmitted manuscript may be sent back to the original

referees or to new referees, at the editors' discretion. In such cases, revised manuscripts will not retain their earlier submission date.

In either case, the revised manuscript should be accompanied by a cover letter that includes a point-by-point response to referees' comments and an explanation of how the manuscript has been changed.

An invited revision should be submitted via the revision link to the [online submission system](#) provided in the decision letter, not as a new manuscript.

### FINAL SUBMISSION AND ACCEPTANCE

A request for final submission is sent when the paper is nearly ready to publish, possibly requiring some text changes but no revisions to the data or conclusions. These letters are accompanied by detailed comments on the paper's format from the copy editor. A high priority of *Nature Neuroscience* is that all papers be accessible to nonspecialists. Manuscripts are subject to substantial editing to achieve this goal. After acceptance, a copy editor may make further changes so that the text and figures are readable and clear to those outside the field, and so that papers conform to our style.

For the final revision, authors should use the revision link to the [online submission system](#) provided in the decision letter to upload a final version of the text with all the requested format changes. Electronic files of the final figures, at high resolution, should be sent separately on disk or via [ftp](#).

When all remaining editorial issues are resolved, the paper is formally accepted. The received date is the date on which the editors received the original (or if previously rejected, the resubmitted) manuscript. The accepted date is when the editor sends the acceptance letter.

Contributors are sent proofs and are welcome to discuss proposed changes with the editors, but *Nature Neuroscience* reserves the right to make the final decision about matters of style and the size of figures.

### APPEALS

Even in cases where editors did not invite resubmission, some authors ask the editors to reconsider a rejection decision. These are considered appeals, which, by policy, must take second place to the normal workload. In practice, this means that decisions on appeals often take several weeks.

Decisions are reversed on appeal only if the editors are convinced that the original decision was a serious mistake, not merely a borderline call that could have gone either way. Further consideration may be merited if a referee made substantial errors of fact or showed evidence of bias, but only if a reversal of that referee's opinion would have changed the original decision. Similarly, disputes on factual issues need not be resolved unless they were critical to the outcome. Thus, after careful consideration of the authors' points, most appeals are rejected by the editors.

If an appeal merits further consideration, the editors may send the authors' response or the revised paper to one or more referees, or they may ask one referee to comment on the concerns raised by another referee. On occasion, particularly if the editors feel that additional technical expertise is needed to make a decision, they may obtain advice from an additional referee.

## CONTACT THE JOURNAL

### GENERAL EDITORIAL INQUIRIES AND CORRESPONDENCE

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### SUBMISSIONS

Manuscripts should be submitted through our [online submission system](#). For more information, see our [general guide for manuscript preparation and submission](#). Please do not send complete manuscripts by e-mail unless specifically requested.

### PRESUBMISSION INQUIRIES

Please send inquiries via our [online submission system](#), designating them as presubmission inquiries as requested on the form.

### INQUIRIES ABOUT THE STATUS OF A MANUSCRIPT

Editorial Assistant, *Nature Neuroscience*  
[neurosci@natureny.com](mailto:neurosci@natureny.com)

Receipt of submitted manuscripts will be acknowledged by e-mail.

### REVIEWS OF MANUSCRIPTS

Please return referee comments to the URL included in the referee instruction letter sent to you after you agreed to review the manuscript. The review can also be returned by accessing the manuscript you are reviewing on your personal *Nature Neuroscience* homepage and, when on the manuscript's summary page, selecting the link 'Review Manuscript'. Alternatively, the review can be sent to [neurosci@natureny.com](mailto:neurosci@natureny.com), quoting the manuscript tracking number of the manuscript to which the review applies.

### CORRECTED PROOFS

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