

## Article format guide: Methods Primer

Please follow the below specifications when writing a Methods Primer article for *Nature Reviews Methods Primers*.

Manuscript file		
File types	<input type="checkbox"/>	Preferred file format is Microsoft Word (.docx, .doc or .rtf); we cannot accept PDF.
Title	<input type="checkbox"/>	Ideally maximum 55 characters (2 lines) or 82 characters (3 lines), including spaces. Abbreviations and punctuation should be avoided.
Author names	<input type="checkbox"/>	First name, middle initials (if applicable), last name; please check spelling. You may also include your name in non-Roman alphabets in parentheses after your name in English. For example, 'Mina Razzak (مينا رزاق)'. Currently supported languages are: Arabic, Chinese, Hebrew, Hindi, Japanese, Korean, Persian and Russian.
Affiliations	<input type="checkbox"/>	Department, Institution, City, State/province (if applicable), Country/Region. Please limit the number of affiliations, where possible, and ensure affiliations are clearly linked to the correct author.
Corresponding author	<input type="checkbox"/>	Name and email of corresponding author.
Abstract	<input type="checkbox"/>	Unstructured abstract; ideally 200 words maximum.
Main text	<input type="checkbox"/>	Please follow word count recommendations as discussed with the editor.
	<input type="checkbox"/>	Three levels of headings are allowed: <ul style="list-style-type: none"> <li>• 1st heading: fixed heading covering the structure below.</li> <li>• 2nd heading: 48 characters (1 line), max. 96 characters (2 lines), including spaces.</li> <li>• 3rd heading: 110 characters (2 lines), max. 165 characters (3 lines), including spaces.</li> </ul>
	<input type="checkbox"/>	Level 1 headings are fixed and mandatory. Please ensure all the below sections are included in the outlined order <ol style="list-style-type: none"> <li>1. Introduction</li> <li>2. Experimentation</li> <li>3. Results</li> <li>4. Applications</li> <li>5. Reproducibility and data deposition</li> <li>6. Limitations and optimizations</li> <li>7. Outlook</li> </ol>
	<input type="checkbox"/>	Please add continuous line numbers.
References	<input type="checkbox"/>	Approximately 25 references per 1,000 words. Please use the <i>Nature Reviews</i> style described below and list references in following order: main text, tables, figures and then boxes.
Highlighted references	<input type="checkbox"/>	Select key references 5–10% of the total and provide a single sentence highlighting the significance for each.
Acknowledgements	<input type="checkbox"/>	Optional. You can find our guidelines <a href="#">here</a> .
Competing interests	<input type="checkbox"/>	Include in manuscript file; you will also be asked to complete this information during submission. You can find our policy <a href="#">here</a> .
Related links	<input type="checkbox"/>	Optional.
Display items		
At least 1 display item per section, cited in the main text in order in the format (FIG. 1). Original display items are preferred.		
Tables	<input type="checkbox"/>	All tables should have a short title; footnotes are allowed and all cells must have an entry. All abbreviations should be defined.
Figures	<input type="checkbox"/>	Schematics will be redrawn but all elements should be labelled; all common file formats are accepted. Unless you are showing trends, figures containing data such as graphs should be provided in vector format where possible: PDF, EPS, or AI. Photographs should have a resolution of $\geq 300$ dpi, ideally in CMYK colour format. Please provide native ChemDraw files (CDX) for chemical structures.
Figure legends	<input type="checkbox"/>	All figures need a brief legend (~200 words) consisting of a short title, description of all figure components and defining all abbreviations.
Boxes	<input type="checkbox"/>	All boxes should have a short title and should be no more than 300 words. Subheadings; bullet points, and an illustration, table or equation are allowed.
Videos	<input type="checkbox"/>	Files can be $\leq 2$ GB in size. Please check the section below for the allowed file types.
Supplementary information	<input type="checkbox"/>	Supplementary display information can be included at the editor's discretion. If agreed, supplementary information should be supplied as a single file and is not edited and is not redrawn.

## Manuscript elements

### Title

The title should be the name of the method being discussed, and can include optional context regarding the application.

### Affiliations

Our preference is to minimize the number of addresses per author where possible. Affiliations should be limited to primary addresses or those that must be cited for funding reasons. Additional affiliations and/or funding information can be added to the Acknowledgements section. Each address should be a separate affiliation. Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

### Abstract

The unstructured abstract should introduce the main themes of the article in a succinct, easily digestible way to engage a broad readership. All information mentioned in the abstract must be addressed in the main article. The abstract should contain minimal specialist details, no references and no display item citations.

### Main headings

Primer articles follow a rigid structure, and must include all the major headings detailed below.

### Introduction

This section should introduce the topic and highlight some key features, laying the groundwork for the rest of the Primer to be understood. This section should include an explanation of the underlying scientific principles behind the method and key advances in the field. Include a statement guiding the reader, at the end of the section, explaining what will and will not be included.

### Experimentation

This section should describe the equipment and materials needed for experimental design, setting up equipment and/or code, preparing samples, and how to collect data. Any variations on the method setup should be discussed here. Please include ethical and safety information where necessary. This section must include at least one figure that illustrates the general method set-up.

### Results

This section should focus on how to analyse the data obtained using the method. Representative and/or expected results should be discussed, as well as the approaches used to correct data and statistical and error calculations. Key equations for fitting data should be included, and any useful software can be discussed. Important considerations for validating the results should be included where appropriate. Potential artefacts and unexpected results can be discussed here. This section must include at least one figure that demonstrates representative results.

### Applications

This section should discuss the range of applications that are possible with the method. Examples of successful utility of the method across fields and disciplines should be included. Any field-specific considerations for adopting the method should be

included where appropriate.

### Reproducibility and data deposition

This section should discuss factors affecting reproducibility and field standards in data deposition. Minimum reporting standards should be described. Appropriate repositories and entry requirements should be outlined.

### Limitations and optimizations

This section should describe the current limitations of the method in terms of applications and available equipment. These can include technical limitations, potential flaws or biases that may be introduced, and how these can be overcome.

### Outlook

This section should outline the key outstanding challenges in the field. On what will researchers focus their efforts both in using the method and in improving it in the next 5-10 years? Potential interdisciplinary applications of the method should also be discussed.

### References

Please keep the reference list as up to date as possible and avoid referring extensively to your own published work. Citations of personal communications should be kept to a minimum and not included in the reference list; written permission from the correspondent must be provided to the editor.

Papers in the numbered reference list must have been published or accepted for publication by a named publication or be available in a recognized preprint server. For in-press articles, embargo times must be considered, and an e-mail confirming acceptance from the editors of the original research journal may be required. Meeting abstracts and presentations should be avoided but may be included at the editor's discretion.

References should be included as superscript numbers and cited sequentially in the following order: main text, tables, figures and then boxes. The numbered references should be listed at the end of the article in the following format:

1. Author, A. B. Title of the article. *Nat. Struct. Mol. Biol.* **7**, 101–109 (2003).
2. Author, A. B. & Author, B. C. Title of the article. *Nat. Cell Biol.* **6**, 123–131 (2001).
3. Author, A. B., Author, Z. X. & Author, B. C. Title of the article. *EMBO J.* **25**, 3454–3461 (2006).
4. Author, A. B. in *Title of Book* (ed. Surname, I. N.) 75–98 (Publisher, 2000).

If a reference has six or more authors, only the first author should be listed followed by 'et al.'.

Clinical trials should be cited as a reference using the following format:

5. US National Library of Medicine. *ClinicalTrials.gov*  
<https://clinicaltrials.gov/ct2/show/NCT01939899> (2016).

General websites can be provided in a 'Related links' box, but specific online articles should be cited as a reference using the following format:

6. Author. Title of online article. *Website name* [http address](http://address) (2015).

Preprints can be cited using the following format:

7. Author, A. B., Author, Z. Y. & Author, B. C. Title of the preprint. Preprint at <http://arxiv.org/abs/quant-ph/XXXXX> (2002)
8. Author, A. B., Author, Z. Y. & Author, B. C. Title of the preprint. Preprint at [bioRxiv](https://doi.org/XXX) <https://doi.org/XXX> (2002)

The *Nature Reviews* style can be obtained for Endnote (see <http://www.endnote.com/support/enstyles.asp>).

### Highlighted references

Please select key references (5–10% of the total) and provide a single sentence for each, highlighting the significance of the work.

### Acknowledgements (optional)

The acknowledgement section can be used to thank anyone important in the publication of the work who does not qualify for authorship ([Authorship criteria here](#)) and to declare funders and grants if the publication is within the scope and directly arises from the grant. Please refer to the [Acknowledgment guidance](#) for more information.

### Author contributions

Authors are requested to declare their authorship contribution during the submission process. A statement of these contributions will be published in the final article.

### Competing interests

In the interests of transparency, any competing interests must be declared both within the text of the article and via our web-based Manuscript Tracking System upon submission. A detailed explanation can be found in the [Nature journals' policy on competing interests](#).

Authors can decline to disclose their competing interests if they are bound by confidentiality agreements, but we will publish the fact that they have declined to provide information. At the *Nature Reviews* journals, competing interests will be disclosed to referees and will be published online and/or in print.

### Related links (optional)

The article text can be linked to a number of online resources where appropriate. Online resources can provide further information on the development of the method. You may also wish to link to protocols available online. Please provide links to any particular resources that would increase the usefulness of your article.

### Supplementary information (optional)

Supplementary display items can be included at the editor's discretion if they add substantial value to the article. Supplementary items are not edited and supplementary figures are not redrawn by the journal, so authors are asked to ensure that they are accurately, clearly and succinctly presented. Supplementary items must be referred to in the main text, in the format Supplementary <Figure, Box, Table, Data or Video> <number>. For example, '(Supplementary Figure 1)' or '(Supplementary video 1)'. They should be submitted in a single document (with a single reference list that is distinct from that in the main text) where possible, and appear in the order of citation in the main text. Large spreadsheets and videos can be supplied separately.

### File types

Please submit the text of your manuscript as a Microsoft Word file (.docx, .doc or .rtf) or LaTeX file, but not as a PDF. See 'Figures' section for more information on acceptable file formats for display items.

### Display items

Display items (Tables, Figures or Boxes) are used to help explain specific points made in the main text or to explain the background science. These items must be cited in the correct order within the main text in the format (FIG. 1). We prefer to avoid reproducing material from other publications, unless it is exceptionally informative.

### Tables

Tables should be provided as part of the article document. These display items should be clear and as simple as possible, have a short title, no legend (but footnotes are allowed), contain at least three columns of data and preferably fit on one portrait-oriented A4 page. We recommend maximum 7 columns if cells contain text and 11 columns if cells contain data. All cells must have an entry, footnotes may be used and definitions of all abbreviations must be provided. Please provide separate image files for tables which contain graphical content (for example, chemical structures).

### Figures

Figures can include drawn schematics, photographs, histology slides, medical imaging scans, graphs models, and/or chemical structures. Each figure must be fully labelled, have a short title and have a concise legend that guides the reader through each component of the figure. All abbreviations must be defined in the legend.

Schematics will be redrawn and developed by our in-house team of art editors in consultation with the editor after the article has been peer reviewed. Multiple panels (designated a, b, c, and so on) can be included in a single figure. Please bear in mind the following when drafting your figures: be clear in what the figure is meant to show; avoid unnecessary imagery; have a logical flow of information; use colour consistently; and provide additional reference material if necessary. Please refer to [our style guide for conceptual figures](#) for more information.

Photographs should be supplied in at least 300 dpi resolution at their final published size. Ideally, please also provide clean versions of the photos without overlaying annotation in CMYK in the following image formats: JPEG, TIFF, PSD and EPS. We will need to obtain consent to use photographs in which individuals can be identified; please discuss this with the editor. Sensitive images will be included in the PDF and print versions of the article only (not the HTML version).

Unless you are showing trends, figures containing data (such as complex graphs) or anything classed as industry standard (including 3D-rendered elements) should be provided in vector format where possible: PDF, EPS or AI. Please discuss with your editor if you don't have vector files for these figures.

Chemical structures should be provided as native ChemDraw files (CDX). Please refer to our [Style guide for chemical structures](#) and [download the ChemDraw template](#).

Please refer to our [guide to help you develop your schematics](#) and [guide to help you submit high quality data figures](#) for more information.

### Boxes

Boxes should be provided as part of the article document. These display items can be useful for explaining basic concepts or for providing peripheral discussions of interest. Boxes must have a short title, can contain a maximum of 300 words and may include an illustration, a table or equations. Subheadings and bullet points are also permitted. Footnotes may be used sparingly.

### Videos

Videos can be included as supplementary information online. We support the following video formats: 3gp, asf, avi, flv, m1v, m2p, m2ts, m2v, m4a, m4v, mov, mp2, mp3, mp4, mpeg, mpg, mts, mxf, ogv, swf, wav, webm, wmv. The maximum file size supported is 2 GB.

### Editorial summary

Each Primer is accompanied by an editorial summary article, entitled 'PrimeView'. The PrimeView is an illustrated summary based on the Primer and is written by the journal editors and designed by the Nature Reviews art editors. The PrimeView is published under its own doi, distinct from the doi of the Primer, but each PrimeView refers to its accompanying Primer and both are bidirectionally linked in the 'Associated content' section on our websites. PrimeViews are promotional tools and are therefore not indexed in the major scholarly indexing services. In addition, no authorship is assigned to PrimeView articles and the copyright is owned by Springer Nature Limited.