

## Preparing a Method Article

*This document provides information about writing a Method Article for Gates Open Research, including the key sections that must be present in the article and details of figure and table formats. Please also refer to Gates Open Research's [editorial policies](#).*

### Criteria

Gates Open Research publishes new methods for empirical data collection and analysis in any of the areas funded by the Gates Foundation, including global health and development, agriculture and education. This includes detailed descriptions of the rationale for, and development of, new experimental, observational or computational methods, tests or procedures in basic, translational or applied research.

New study methods, substantive modifications to existing methods or innovative applications of existing methods to new models or research questions are all encouraged, and we welcome technical articles that describe tools that facilitate the design or performance of experiments, provide data analysis features or assist medical treatment such as drug delivery devices.

The peer review focuses on whether the paper is scientifically sound and whether adequate detail has been provided to enable others to reproduce and use the method.

Submission to Gates Open Research is limited to Gates-funded researchers.

### Language

All articles must be written in good English. Please note that the article will not undergo editing by Gates Open Research before publication and a manuscript may be rejected during the initial checking process if it is deemed unintelligible and hence not suitable for peer review.

For authors whose first language is not English, it may be beneficial to have the manuscript read by a native English speaker with scientific expertise. There are many commercial editing services that can provide this service at a cost to the authors.

### Main Sections

#### 1. Authors

Please list all authors who played a significant role in developing the points presented in the article.

Please:

- provide full affiliation information (full institutional address and ZIP code, and e-mail address) for all authors, and
- indicate who is/are the corresponding author(s).

Criteria for authorship are based on [the Uniform Requirements for Manuscripts Submitted to Biomedical Journals](#). Being an author implies full responsibility for the article's content and that the work conforms to our [editorial policies](#). For large, multi-centre collaborations, the individuals who accept direct responsibility for the manuscript must be listed as authors.

Details of each author's contribution must be listed in the Author contributions section.

Anyone who has contributed but does not meet the criteria for authorship should be listed in the Acknowledgments section. The involvement of any professional medical writer assistance must be declared.

## 2. Title

Please provide a concise and specific title that clearly reflects the content of the article.

## 3. Abstract

Abstracts should be up to 300 words long and provide a succinct summary of the article.

Although the abstract should explain why the article might be interesting, the importance of the work should not be over-emphasized. Citations should not be used in the abstract. Abbreviations, if needed, should be spelled out.

## 4. Keywords

Authors should supply up to eight relevant keywords that describe the subject of their article. These will improve the visibility of your article.

## 5. Main Body

The format of the main body of the article is flexible: it should be concise, making it easy to read and referee, and presented in a format that is appropriate for the type of study presented.

For most Method Articles, the following standard format will be the most appropriate:

- Introduction
- Methods
- Results
- Conclusions/Discussion

Method articles in some areas of research, e.g. education, social sciences or economics, may benefit from a different structure, in which case a more flexible format is possible as long as the

authors ensure that they describe their methods and sources in sufficient detail for others to be able to repeat the research.

**Reproducibility:** Gates Open Research is committed to serving the research community by ensuring that all articles include sufficient information to allow others to reproduce the work. With this in mind, Methods sections should provide sufficient details of the materials and methods used so that the work can be repeated by others. The section should also include a brief discussion of allowances made (if any) for controlling bias or unwanted sources of variability. Any limitations of the datasets should be discussed.

When antibodies are used, the species in which the antibody was raised, the manufacturing company or source laboratory, the catalogue or reference number, and whether it is a polyclonal or monoclonal antibody should be included. In addition, if the antibody has been previously validated, a reference to the validation study should be included. If the antibody has not been validated, full details of the dilution and use of the antibody should be given in the Methods section.

We encourage authors to add Research Resource Identifiers (RRIDs) to their article in order to unambiguously identify the following types of resources: antibodies, genetically modified organisms, software tools, data, databases and services. More information on this project is available from the [Resource Identification Initiative](#) and RRIDs can be obtained from the [portal](#).

**Ethics policies:** All research must have been conducted within an appropriate ethical framework. For studies involving humans or animals, details of approval by the authors' institution or an ethics committee must be provided in the Methods section. Please refer to the detailed 'Ethics' section in our [editorial policies](#) for more information.

## 6. Data (and Software) Availability

All articles reporting new research findings must be accompanied by the underlying source data - see our [policies](#) for more information.

Please include details of how the data were analysed to produce the various results (tables, graphs etc.) shown (i.e. what statistical tests were used). If a piece of software code was used, please provide details of how to access this code (if not proprietary). See also our [Data Preparation guidelines](#) for further guidance on data presentation and formatting.

If you have already deposited your datasets or used data that are already available online or elsewhere, please include a 'Data Availability' section, providing full details of how and where the data can be accessed. This should be done in the style of:

Repository: Dataset 1. Title, Dataset DOI.

Please also provide details of the license under which the data can be used.

If you are describing new software, please make the source code available on a Version Control System (VCS) such as GitHub, BitBucket or SourceForge, and provide details of the repository and the license under which the software can be used in the article.

The Gates Open Research team will assist with data and/or software deposition and help generate this section, where needed.

## 7. Consent

For articles involving patient/participant data or information (e.g. personal genomics articles, case reports, clinical trials, questionnaires, observations), authors must ensure that they have written informed consent from all the subjects involved (or their legal guardian for a minor, or next of kin if the subject is deceased). Please be ready to provide copies of such consent forms, if requested by the Gates Open Research team. For details, see our [editorial policies](#).

If applicable, please include a section entitled “Consent” and state ‘Written informed consent for publication of the participants/patients’ details and/or their images was obtained from the participants/patients/parents/guardian/relative of the participant/patient.’

## 8. Author Contributions

We are using the CRediT Taxonomy to capture author contributions as we believe that having more detail of who did what brings transparency, enables recognition for researchers, and provides greater accountability for all involved. For more information see: <http://docs.casrai.org/CRediT>.

You do not need to include an Author Contributions section in your manuscript: on submission, you will be asked for the contributions made by each author, to be selected from the list below. Anyone who has contributed but does not meet the criteria for authorship should be listed in the Acknowledgments section.

<b>Contributor Role</b>	<b>Role Definition</b>
Conceptualization	Ideas; formulation or evolution of overarching research goals and aims.
Data Curation	Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later reuse.
Formal Analysis	Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data.
Funding Acquisition	Acquisition of the financial support for the project leading to this publication.
Investigation	Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection.
Methodology	Development or design of methodology; creation of models.
Project Administration	Management and coordination responsibility for the research activity planning and execution.
Resources	Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools.

Contributor Role	Role Definition
Software	Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components.
Supervision	Oversight and leadership responsibility for the research activity planning and execution, including mentorship external to the core team.
Validation	Verification, whether as a part of the activity or separate, of the overall replication/reproducibility of results/experiments and other research outputs.
Visualization	Preparation, creation and/or presentation of the published work, specifically visualization/data presentation.
Writing – Original Draft Preparation	Creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation).
Writing – Review & Editing	Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre- or post-publication stages.

## 9. Competing Interests

Articles published in Gates Open Research must not contain content that could be perceived as ‘advertising’ and must include a Competing Interests section. Any financial, personal, or professional competing interests for any of the authors that could be construed to unduly influence the content of the article must be disclosed and will be displayed alongside the article.

More information on what might be construed as a competing interest is available in our [editorial policies](#).

If you do not have any competing interests, add the text ‘No competing interests were disclosed’.

## 10. Grant Information

Please provide details of the Gates Foundation grant(s) that supported the work presented in your article in the following example format:

Bill & Melinda Gates Foundation [OPP124589, OPP438721].

If applicable, please also list any other funders or employers who funded the work. For each funder, please state the funder’s name, the grant number where applicable and known, and the individual to whom the grant was assigned.

Please do not list funding that you have that is not relevant to this specific piece of research.

## 11. Acknowledgments

This section should acknowledge anyone who contributed to the research or the writing of the article but who does not qualify as an author; please clearly state how they contributed. Authors should obtain permission to include the name and affiliation, from all those mentioned in the Acknowledgments section. Please note that grant funding should not be listed here.

## 12. Supplementary Material

There are no figure or table limits for articles in Gates Open Research. Additional information that is not absolutely required in order to follow the study design and analysis of the results, e.g. questionnaires, extra or supporting images or tables, can be submitted as supplementary material; descriptions of the materials and methods should be in the main article.

If you have any supplementary files, please include a section entitled 'Supplementary Material' at the end of the manuscript and provide a title and short description for each file. Please also include citations to the supplementary files in the main body of the article.

The Gates Open Research editorial team will liaise with the authors to determine the most appropriate way to display this material.

## 13. References

References can be listed in any standard referencing style as long as it is consistent between references within a given article. However, basic requirements include:

- Journal abbreviations should follow the Index Medicus/MEDLINE abbreviation approach.
- Preprints can be cited and listed in the reference list.
- Only articles, books and book chapters, datasets and abstracts that have been published or are in press, or are available through public e-print/preprint servers/data repositories, may be cited. Unpublished abstracts, papers that have been submitted to a journal but not yet accepted, and personal communications should instead be included in the text; they should be referred to as 'personal communications' or 'unpublished reports' and the researchers involved should be named. Authors are responsible for getting permission to quote any personal communications from the cited individuals.
- Web links, URLs, and links to the authors' own websites should be included as hyperlinks within the main body of the article, and not as references.
- References to trials on a clinical trial database should be as follows: [Authors/name of group], [title of the trial], In: ClinicalTrials.gov [cited year month date], Available from [URL of the link from ClinicalTrials.gov].

Example: Kovacs Foundation, The Effect of Ozone Therapy for Lumbar Herniated Disc. In: ClinicalTrials.gov [cited 2012 Aug 30], Available from <http://clinicaltrials.gov/ct2/show/NCT00566007>.

- Datasets published or deposited elsewhere (for example, in figshare, Dryad, etc.) should be listed in the "References" section and the citation to the dataset should follow [one of these examples](#).

## 14. Figures and Tables

All figures and tables should be cited and discussed in the article text. **Figure legends and tables should be added at the end of the manuscript.** Tables should be formatted using the 'insert table' function in Word, or provided as an Excel file. For larger tables or spreadsheets of data, please see our [Data Preparation guidelines](#). Files for figures are usually best uploaded as separate files through the submission system (see below for information on formats).

Any photographs must be accompanied by written consent to publish from the individuals involved. Any distinguishing features, including medical record numbers or codes in the case of clinical images that could be used to identify the patient or participant concerned must be removed from the images.

**Titles and legends:** Each figure or table should have a concise title of no more than 15 words. A legend for each figure and table should also be provided that briefly describes the key points and explains any symbols and abbreviations used. The legend should be sufficiently detailed so that the figure or table can stand alone from the main text.

**Permissions:** If reusing a figure or table from a previous publication, the authors are responsible for obtaining permission from the copyright holder and for the payment of any fees (if applicable). Please include a note in the legend to state that: 'This figure/table has been reproduced with permission from [*include original publication citation*]'.

**Figure formats:** For all figures, the color mode should be RGB or grayscale.

**Line art:** Examples of line art include graphs, diagrams, flow charts and phylogenetic trees. Please make sure that text is at least 8pt, the lines are thick enough to be clearly seen at the size the image will likely be displayed (between 75-150 mm width, which converts to one or two columns width, respectively), and that the font size and type is consistent between images. Figures should be created using a white background to ensure that they display correctly online.

If you submit a graph, please export the graph as an EPS file using the program you used to create the graph (e.g. SPSS). If this is not possible, please send us the original file in which the graph was created (e.g. if you created the graph in Excel, send us the Excel file with the embedded graph).

If you submit other forms of line art such as flow charts, diagrams or text to be displayed as an image, please export the image as an EPS file (e.g. if creating phylogenetic trees with specialized programs), or send us the original file that was used to create the image (e.g. EPS or AI files if Adobe Illustrator was used, or a DOC, DOCX, PPT, PPTX or equivalent file if Word or PowerPoint was used).

If none of the above options is possible then we also accept uncompressed TIFFs with a resolution of at least 600dpi at the size they are likely to be displayed at (see above).

**Photographs and microscopy images:** Photographs and microscopy images should be submitted as uncompressed TIFFs with a resolution of at least 300dpi at the size they are likely to be displayed (see above).

**Mixed images:** Images that are a mix of half-tone images and line art (e.g. annotated gels or images with scale bars) should be submitted as TIFF files at a resolution of 500dpi or vector files

(e.g. EPS or Adobe Illustrator files). Please ensure that the text size is at least 8pt and lines are thick enough to be clearly visible at the size the image will be displayed.

**Images to be used as data:** If you are submitting photographic images as part of your raw dataset, please submit them as uncompressed TIFF files.

**Electronic manipulation of images:** The clarity of figures may be improved using image-editing software, but this must be done transparently and without misrepresenting the data (and the original, unaltered source data must be provided with the article). Brightness, contrasts or color balance may be used to enhance electronic images, but such changes must be applied to the whole image; any non-linear adjustments must be made explicit in the figure legend. Specific features within an image must not be added or changed (e.g. amplified, removed or obscured); and if figures are composed from images that have come from different sources, such as different gels, or from different parts of the same source, this must be made clear on the figure (e.g. by adding dividing lines).