



# Journal of Clinical Anesthesia

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## About the journal

### Aims and scope

*The Journal of Clinical Anesthesia (JCA)* is an International Journal of Anesthesiology and Perioperative Medicine and the official journal of the [American Association of Clinical Directors](#).

The *Journal of Clinical Anesthesia (JCA)* addresses all aspects of **anesthesia practice**, including **anesthetic administration, pharmacokinetics, preoperative** and **postoperative** considerations, **coexisting disease** and other complicating factors, **cost** issues, and similar concerns anesthesiologists contend with daily. Exceptionally high standards of presentation and accuracy are maintained.

The core of the journal is original contributions on subjects relevant to clinical practice, and rigorously peer-reviewed. Highly respected international experts have joined together to form the [Editorial Board](#), sharing their years of experience and clinical expertise. Specialized section editors cover the various subspecialties within the field. To keep your practical clinical skills current, the journal bridges the gap between the laboratory and the clinical practice of anesthesiology and critical care to clarify how new insights can improve daily practice.

JCA is affiliated with the American Association of Clinical Directors ([AACD](#)).

## Article types

Please note that the journal no longer publishes case reports or case series.

### **Research Paper**

This article type is an original research investigation which is generally hypothesis-driven and includes an introduction, materials and methods, results, and discussion, along with the interpretation of the study findings. Both prospective and retrospective studies which describe new research findings can be submitted, including all types of research study designs. All articles must comply with the applicable EQUATOR and other Publishing Ethics guidelines. Clinical trials submissions require evidence of clinical trial registration, including the date and registration number.

*Requirements:* Abstract: up to 300 words; Length: up to 5000 words; Figures and/or Tables: up to 6 combined; References: up to 100. Online supplemental material can be provided, if necessary.

### **Review Article**

This article type can be a state-of-the-art, critical summary of existing published literature and can provide background information on a clinical topic, identify gaps in current knowledge, and formulate recommendations for future research. A Review article should not contain any original research data, but it can provide a comprehensive analysis of existing information guided by a thorough literature search.

Types of review articles that can be submitted include:

1. Narrative Literature Reviews
2. Systematic Reviews
3. Meta-Analyses

*Note:* All articles must comply with the applicable EQUATOR publishing guidelines. Systematic reviews/meta-analyses require a prior registration with PROSPERO or a similar registry, including date of registration and registration number.

*Requirements:* Abstract: up to 300 words; Length: up to 5000 words; Figures and/or Tables: up to 6 combined; References: up to 150. Online supplemental material can be provided, if necessary.

### **Editorial**

This article type can be a perspective piece or a focused scholarly review of fundamental concepts or prevalent ideas in anesthesiology, describing new advances or offering fresh insights. It may also offer a critical evaluation of a recently published paper in the *Journal of Clinical Anesthesia*, providing a wider, expert perspective on the topic.

*Note:* Since submissions in this category are generally invited by the Editorial Board, please contact the Editor prior to submission.

*Requirements:* Abstract: none; Length: up to 1500 words; Figures and/or Tables: 1; References: up to 10.

### **Feature Article**

This invited article type may highlight a novel topic or approach and provide a unique, evidence-based perspective, although it may not fit into any of the Journal's other Article type categories. Authors who wish to submit a Feature Article must consult the Editor prior to the submission of the manuscript.

*Requirements:* Abstract: up to 300 words; Length: up to 5000 words; combined number of Figures and/or Tables: up to 6; references: up to 150. Online supplemental material can be provided, if necessary.

### **Letter to the Editor**

This article type can be submitted in response to a recently published paper in the *Journal of Clinical Anesthesia* and can provide objective comments, criticisms, new insights or requests for a clarification. If accepted, the editor then may give the author of the paper in question an opportunity to reply to the submitted letter.

Note: The letter should be addressed "To the Editor."

*Requirements:* Abstract: none; Length: up to 800 words; Figures and/or Tables: 1; References: up to 5.

### **Correspondence**

This article type may contain a variety of topics, formats and approaches, including:

1. Discussion of a clinical dilemma or a controversial clinical topic, new approaches to care or any other topic that might be of interest to the Journal readers
2. Novel methods/approaches related to clinical care or research. This may include a brief description of a new methodology, experimental method, theoretical framework, test or procedure
3. Quality improvement or other innovative projects (manuscripts that contain any statistical analysis should instead be submitted as a "Research Paper")
4. Teaching tools and curriculum development
5. Image-based learning (i.e., ultrasound, echocardiography, monitoring, airway management)
6. Preliminary (pilot) data (manuscripts that contain any statistical analysis should instead be submitted as a Research Paper)
7. Meeting reports
8. Book and media reviews
9. Pro/Con clinical debates

*Important Instructions:*

- **Please note that the Journal no longer publishes Case Reports or Case Series.**
- Preliminary (pilot) data: Authors may submit articles as "Correspondence" that include a very limited amount of original pilot data and/or statistical analysis. However, the authors are strongly encouraged to submit such manuscripts as a full-length "Research Paper" instead.
- Manuscripts that contain any statistical analysis should be submitted as a full-length "Research Paper".
- All Correspondence that includes research data must comply with appropriate Publishing Ethics guidelines.
- Begin your letter by addressing it "To the Editor:"

*Requirements:* Abstract: none; Length: up to 1000 words; Figures and/or Tables: up to 2 combined; References: up to 10. Online supplemental data can be uploaded, if desired.

### **Images**

This section is reserved for Infographics created based on a recently published papers in the Journal of Clinical Anesthesia, summarizing each paper's main findings. Infographics can only be submitted at the invitation of the Editor. For all other image-based articles, submit as a "Correspondence" article (see above).

*Requirements:* Abstract: none; Length: up to 600 words; Figures and/or Tables: 1; References: 1.

### **Peer review**

This journal follows a single anonymized review process. Your submission will initially be assessed by our editors to determine suitability for publication in this journal. If your submission is deemed suitable, it will typically be sent to a minimum of two reviewers for an independent expert assessment of the scientific quality. The decision as to whether your article is accepted or rejected will be taken by our editors.

Read more about [peer review](#).

Our editors are not involved in making decisions about papers which:

- they have written themselves.
- have been written by family members or colleagues.
- relate to products or services in which they have an interest.

Any such submissions will be subject to the journal's usual procedures and peer review will be handled independently of the editor involved and their research group. Read more about [editor duties](#).

Authors may submit a formal appeal request to the editorial decision, provided it meets all the requirements and follows the procedure outlined in [Elsevier's Appeal Policy](#). Only one appeal per submission will be considered and the appeal decision will be final.

### **Special issues and article collections**

The peer review process for special issues and article collections follows the same process as outlined above for regular submissions, except, a guest editor may send the submissions out to the reviewers and may recommend a decision to the journal editor. The journal editor oversees the peer review process of all special issues and article collections to ensure the high standards of publishing ethics and responsiveness are respected and is responsible for the final decision regarding acceptance or rejection of articles.

## Open access

We refer you to our [open access information page](#) to learn about open access options for this journal.

## Ethics and policies

### Ethics in publishing

Authors must follow ethical guidelines stated in [Elsevier's Publishing Ethics Policy](#).

### Submission declaration

When authors submit an article to an Elsevier journal it is implied that:

- the work described has not been published previously except in the form of a preprint, an abstract, a published lecture, academic thesis or registered report. See our policy on [multiple, redundant or concurrent publication](#).
- the article is not under consideration for publication elsewhere.
- the article's publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out.
- if accepted, the article will not be published elsewhere in the same form, in English or in any other language, including electronically, without the written consent of the copyright-holder.

To verify compliance with our journal publishing policies, we may check your manuscript with our screening tools.

## Authorship

All authors should have made substantial contributions to all of the following:

1. The conception and design of the study, or acquisition of data, or analysis and interpretation of data.
2. Drafting the article or revising it critically for important intellectual content.
3. Final approval of the version to be submitted.

Authors should appoint a corresponding author to communicate with the journal during the editorial process. All authors should agree to be accountable for all aspects of the work to ensure that the questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

## Changes to authorship

The editors of this journal generally will not consider changes to authorship once a manuscript has been submitted. It is important that authors carefully consider the authorship list and order of authors and provide a definitive

author list at original submission.

The policy of this journal around authorship changes:

- All authors must be listed in the manuscript and their details entered into the submission system.
- Any addition, deletion or rearrangement of author names in the authorship list should only be made prior to acceptance, and only if approved by the journal editor.
- Requests to change authorship should be made by the corresponding author, who must provide the reason for the request to the journal editor with written confirmation from all authors, including any authors being added or removed, that they agree with the addition, removal or rearrangement.
- All requests to change authorship must be submitted using [this form](#). Requests which do not comply with the instructions outlined in the form will not be considered.
- Only in exceptional circumstances will the journal editor consider the addition, deletion or rearrangement of authors post acceptance.
- Publication of the manuscript may be paused while a change in authorship request is being considered.
- Any authorship change requests approved by the journal editor will result in a corrigendum if the manuscript has already been published.
- Any unauthorized authorship changes may result in the rejection of the article, or retraction, if the article has already been published.

### **Declaration of competing interests**

All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence or bias their work. Examples of potential competing interests include:

- Employment
- Consultancies
- Stock ownership
- Honoraria
- Paid expert testimony
- Patent applications or registrations
- Grants or any other funding
- Affiliation with the journal as an Editor or Advisory Board Member

The [declarations tool](#) should always be completed.

Authors with a journal affiliation to declare should enter the following text under “Other Activities” within the [declarations tool](#) and should inform the journal and publisher prior to completing the submission process: *Given their role as [insert journal role title], [insert your name] had no involvement in the peer-review of this article and has no access to information regarding its peer-review. Full responsibility for the editorial process for this article was delegated to another journal editor.*

Editorial disclosure statements will be included as a footnote and/or in the declaration of competing interest section of the article.

Authors with no competing interests to declare should select the option "I have nothing to declare".

The resulting Word document containing your declaration should be uploaded at the "attach/upload files" step in the submission process. It is important that the Word document is saved in the .doc/.docx file format. Author signatures are not required.

## Funding sources

Authors must disclose any funding sources who provided financial support for the conduct of the research and/or preparation of the article. The role of sponsors, if any, should be declared in relation to the study design, collection, analysis and interpretation of data, writing of the report and decision to submit the article for publication. If funding sources had no such involvement this should be stated in your submission.

List funding sources in this standard way to facilitate compliance to funder's requirements:

*Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].*

It is not necessary to include detailed descriptions on the program or type of grants, scholarships and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, it is recommended to include the following sentence:

*This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.*

## Declaration of generative AI use

Authors must declare the use of generative AI in the manuscript preparation process upon submission of the paper.

Elsevier recognizes the potential of generative AI and AI-assisted technologies (“AI Tools”), when used responsibly, to help researchers work efficiently, gain critical insights fast and achieve better outcomes. Increasingly, these tools, including AI agents and deep research tools, are helping researchers to synthesize complex literature, provide an overview of a field or research question, identify research gaps, generate ideas, and provide tailored support for tasks such as content organization and improving language and readability.

Authors preparing a manuscript for this journal can use AI Tools to support them. However, these tools must never be used as a substitute for human critical thinking, expertise and evaluation. AI technology should always be applied with human oversight and control.

Ultimately, authors are responsible and accountable for the contents of their work. This includes accountability for:

- Carefully reviewing and verifying the accuracy, comprehensiveness, and impartiality of all AI-generated output (including checking the sources, as AI-generated references can be incorrect or fabricated).
- Editing and adapting all material thoroughly to ensure the manuscript represents the author's authentic and original contribution and reflects their own analysis, interpretation, insights and ideas.
- Ensuring the use of any tools or sources, AI-based or otherwise, is made clear and transparent to readers. If AI Tools have been used, we require a disclosure statement upon submission; please see example below.
- Ensuring the manuscript is developed in a way that safeguards data privacy, intellectual property and other rights, by checking the terms and conditions of any AI tool that is used.

Finally, authors must not list or cite AI Tools as an author or co-author on the manuscript since authorship implies responsibilities and tasks that can only be attributed to, and performed by, humans.

The use of AI Tools in the manuscript preparation process must be declared by adding a statement at the end of the manuscript when the paper is first submitted. The statement will appear in the published work and should be placed in a new section before the references list.

An example:

- Title of new section: *Declaration of generative AI and AI-assisted technologies in the manuscript preparation process.*
- Statement: *During the preparation of this work the author(s) used [NAME OF TOOL / SERVICE] in order to [REASON]. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the published article.*

The declaration does not apply to the use of basic tools, such as tools used to check grammar, spelling and references. If you have nothing to disclose, you do not need to add a statement.

Please read Elsevier's author policy on the use of generative AI and AI-assisted technologies, which can be found in [the generative AI policies for journals](#).

Please note: to protect authors' rights and the confidentiality of their research, this journal does not currently allow the use of generative AI or AI-assisted technologies such as ChatGPT or similar services by reviewers or editors in the peer review and manuscript evaluation process, as is stated in [Elsevier's generative AI policies for journals](#). Elsevier is actively evaluating compliant AI Tools and may revise this policy in the future.

## Preprints

### Preprint sharing

Authors may share preprints in line with Elsevier's [article sharing policy](#). Sharing preprints, such as on a preprint server, will not count as prior publication.

We advise you to read our policy on [multiple, redundant or concurrent publication](#).

### Use of inclusive language

Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Authors should ensure their work uses inclusive language throughout and contains nothing which might imply one individual is superior to another on the grounds of:

- age
- gender
- race
- ethnicity
- culture
- sexual orientation
- disability or health condition

We recommend avoiding the use of descriptors about personal attributes unless they are relevant and valid. Write for gender neutrality with the use of plural nouns ("clinicians, patients/clients") as default. Wherever possible, avoid using "he, she," or "he/she."

No assumptions should be made about the beliefs of readers and writing should be free from bias, stereotypes, slang, reference to dominant culture and/or cultural assumptions.

These guidelines are meant as a point of reference to help you identify appropriate language but are by no means exhaustive or definitive.

### Reporting sex- and gender-based analyses

There is no single, universally agreed-upon set of guidelines for defining sex and gender. We offer the following guidance:

- Sex and gender-based analyses (SGBA) should be integrated into research design when research involves or pertains to humans, animals or eukaryotic cells. This should be done in accordance with any requirements set by funders or sponsors and best practices within a field.
- Sex and/or gender dimensions of the research should be addressed within the article or declared as a limitation to the generalizability of the research.

- Definitions of sex and/or gender applied should be explicitly stated to enhance the precision, rigor and reproducibility of the research and to avoid ambiguity or conflation of terms and the constructs to which they refer.

We advise you to read the [Sex and Gender Equity in Research \(SAGER\) guidelines](#) and the [SAGER checklist \(PDF\)](#) on the EASE website, which offer systematic approaches to the use of sex and gender information in study design, data analysis, outcome reporting and research interpretation.

For further information we suggest reading the rationale behind and recommended [use of the SAGER guidelines](#).

## Definitions of sex and/or gender

We ask authors to define how sex and gender have been used in their research and publication. Some guidance:

- Sex generally refers to a set of biological attributes that are associated with physical and physiological features such as chromosomal genotype, hormonal levels, internal and external anatomy. A binary sex categorization (male/female) is usually designated at birth ("sex assigned at birth") and is in most cases based solely on the visible external anatomy of a newborn. In reality, sex categorizations include people who are intersex/have differences of sex development (DSD).
- Gender generally refers to socially constructed roles, behaviors and identities of women, men and gender-diverse people that occur in a historical and cultural context and may vary across societies and over time. Gender influences how people view themselves and each other, how they behave and interact and how power is distributed in society.

Depending on the focus of a paper, sex and/or gender may or may not be relevant to the content of the paper. We recognize that beliefs, attitudes, and laws relating to sex and gender may vary. These articles do not attempt to dictate author beliefs but rather require that, where relevant to an author's research or paper, the author must provide clear explanations of how the paper and research define and use sex and gender.

## Jurisdictional claims

Elsevier respects the decisions taken by its authors as to how they choose to designate territories and identify their affiliations in their published content. Elsevier's policy is to take a neutral position with respect to territorial disputes or jurisdictional claims, including, but not limited to, maps and institutional affiliations. For journals that Elsevier publishes on behalf of a third party owner, the owner may set its own policy on these issues.

- Maps: Readers should be able to locate any study areas shown within maps using common mapping platforms. Maps should only show the area actually studied and authors should not include a location map which displays a larger area than the bounding box of the study area. Authors should add a note clearly stating that "*map lines delineate study areas and do not necessarily depict accepted national boundaries*". During the review process, Elsevier's editors may request authors to change maps if these guidelines are not followed.
- Institutional affiliations: Authors should use either the full, standard title of their institution or the standard abbreviation of the institutional name so that the institutional name can be independently verified for research integrity purposes.

## Informed consent and patient details

Authors must document in the manuscript that ethics committee approval and informed consent have been obtained for studies involving patients or volunteers (including organ/tissue donors). Key guidelines:

- Appropriate consents, permissions and releases must be obtained if case details, personal information and images of patients or any other individuals are included in a publication, even if anonymized.
- Patient and research subjects' names, initials, hospital or social security numbers, dates of birth or any other personal or identifying information should never be used, even where consent has been provided.

Written consents must be retained. They should not be provided to this journal unless this is specifically requested in exceptional circumstances, for example, when a legal issue arises. Only then should you provide copies of the consents, or evidence that all relevant consents were obtained.

Personal details of any patient must only be included in your article or in any supplementary materials (including all images and videos) in cases where written permission has been given by the patient (or, where applicable, the next of kin).

We advise you to review [Elsevier's policy on patient consent](#) prior to preparing your manuscript.

## Delayed publication

If you need to delay the publication of your article for any reason, please contact the editorial office of the journal or our [Journal Article Publishing Support Center](#) at the earliest possible opportunity. While we will try to ensure that your article is not published before a certain date if you make your request on a timely basis, we cannot guarantee this. Please also note that once the agreed period of delay has expired the article may be published at any time thereafter.

## Writing and formatting

### File format

We ask you to provide editable source files for your entire submission (including figures, tables and text graphics). Some guidelines:

- Save files in an editable format, using the extension .doc/.docx for Word files and .tex for LaTeX files. A PDF is not an acceptable source file.
- Format Word files in a single-column layout. Double-column formatting is only permitted for LaTeX submissions.
- Remove any strikethrough and underlined text from your manuscript, unless it has scientific significance related to your article.
- Use spell-check and grammar-check functions to avoid errors.

We advise you to read our [Step-by-step guide to publishing with Elsevier](#).

### Title page

You are required to include the following details in the title page information:

- Article title. Article titles should be concise and informative. Please avoid abbreviations and formulae, where possible, unless they are established and widely understood, e.g. DNA.
- Author names. Provide the given name(s) and family name(s) of each author. The order of authors should match the order in the submission system. Carefully check that all names are accurately spelled. If needed, you can add your name between parentheses in your own script after the English transliteration.
- Affiliations. Add affiliation addresses, referring to where the work was carried out, below the author names. Indicate affiliations using a lower-case superscript letter immediately after the author's name and in front of the corresponding address. Ensure that you provide the full postal address of each affiliation, including the country name and, if available, the email address of each author.
- Corresponding author. Clearly indicate who will handle correspondence for your article at all stages of the refereeing and publication process and also post-publication. This responsibility includes answering any future queries about your results, data, methodology and materials. It is important that the email address and contact details of your corresponding author are kept up to date during the submission and publication process.
- Present/permanent address. If an author has moved since the work described in your article was carried out, or the author was visiting during that time, a "present address" (or "permanent address") can be indicated by a footnote to the author's name. The address where the author carried out the work must be retained as their main affiliation address. Use superscript Arabic numerals for such footnotes.

## Abstract

You are required to provide a concise and factual abstract which does not exceed 250 words. The abstract should briefly state the purpose of your research, principal results and major conclusions. Some guidelines:

- Abstracts must be able to stand alone as abstracts are often presented separately from the article.
- Avoid references. If any are essential to include, ensure that you cite the author(s) and year(s).
- Avoid non-standard or uncommon abbreviations. If any are essential to include, ensure they are defined within your abstract at first mention.

## Keywords

You are required to provide 1 to 7 keywords for indexing purposes. Keywords should be written in English. Please try to avoid keywords consisting of multiple words (using "and" or "of").

We recommend that you only use abbreviations in keywords if they are firmly established in the field.

## Highlights

You are required to provide article highlights at submission.

Highlights are a short collection of bullet points that should capture the novel results of your research as well as any new methods used during your study. Highlights will help increase the discoverability of your article via search engines. Some guidelines:

- Submit highlights as a separate editable file in the online submission system with the word "highlights" included in the file name.
- Highlights should consist of 3 to 5 bullet points, each a maximum of 85 characters, including spaces.

We encourage you to view example [article highlights](#) and read about the benefits of their inclusion.

## Graphical abstract

You are encouraged to provide a graphical abstract at submission.

The graphical abstract summarizes the contents of your article in a concise, pictorial, professional form, highlighting important aspects of the research. It is designed to appeal to an interdisciplinary audience, and draw more attention to your online article. Some guidelines:

- Ensure you have obtained the necessary permission to include any third party owned material in a graphical abstract.
- Use of generative AI or AI-assisted tools in the production of graphical abstracts must align with Elsevier's [GenAI Policies for Journals](#).
- Submit your graphical abstract as a separate file in the online submission system.
- Ensure the image is 531 x 1328 pixels (h x w) or proportionally more, and is readable at a size of 5 x 13 cm.
- Preferred file types for graphical abstracts are TIFF, EPS, PDF or MS Office files.

More information, examples and a template can be found in the [graphical abstract guidelines](#).

## Units, classifications codes and nomenclature

### Units

This journal requires you to use the international system of units (SI) which follows internationally accepted rules and conventions. If other units are mentioned within your article, you should provide the equivalent unit in SI.

### Math formulae

- Submit math equations as editable text, not as images.
- Present simple formulae in line with normal text, where possible.
- Use the solidus (/) instead of a horizontal line for small fractional terms such as X/Y.
- Present variables in italics.
- Denote powers of e by exp.

- Display equations separately from your text, numbering them consecutively in the order they are referred to within your text.

## Tables

Tables must be submitted as editable text, not as images. Some guidelines:

- Place tables next to the relevant text or on a separate page(s) at the end of your article.
- Cite all tables in the manuscript text.
- Number tables consecutively according to their appearance in the text.
- Please provide captions along with the tables.
- Place any table notes below the table body.
- Avoid vertical rules and shading within table cells.

We recommend that you use tables sparingly, ensuring that any data presented in tables is not duplicating results described elsewhere in the article.

## Figures, images and artwork

Figures, images, artwork, diagrams and other graphical media must be supplied as separate files along with the manuscript. We recommend that you read our detailed [artwork and media instructions](#). Some excerpts:

When submitting artwork:

- Cite all images in the manuscript text.
- Number images according to the sequence they appear within your article.
- Submit each image as a separate file using a logical naming convention for your files (for example, Figure\_1, Figure\_2 etc).
- Text graphics may be embedded in the text at the appropriate position. If you are working with LaTeX, text graphics may also be embedded in the file.

## Figure captions

All images must have a caption. A caption should consist of a brief title (not displayed on the figure itself) and a description of the image. We advise you to keep the amount of text in any image to a minimum, though any symbols and abbreviations used should be explained.

Read how to add captions to your submission [here](#).

## Artwork formats

When your artwork is finalized, "save as" or convert your electronic artwork to the formats listed below taking into account the given resolution requirements for line drawings, halftones, and line/halftone combinations:

- Vector drawings: Save as EPS or PDF files embedding the font or saving the text as "graphics."
- Color or grayscale photographs (halftones): Save as TIFF, JPG or PNG files using a minimum of 300 dpi (for single column width: min. 1063 pixels, full page width: 2244 pixels).
- Bitmapped line drawings: Save as TIFF, JPG or PNG files, using a minimum of 1000 dpi (for single column width: min. 3543 pixels, full page width: 7480 pixels).
- Combinations bitmapped line/halftones (color or grayscale): Save as TIFF, JPG or PNG files using a minimum of 500 dpi (for single column: min. 1772 pixels, full page width: 3740 pixels).

Please do not submit:

- Files that are too low in resolution.
- Disproportionally large images compared to font size, as text may become unreadable.

## Color artwork

If you submit usable color figures with your accepted article, we will ensure that they appear in color online.

Please ensure that color images are accessible to all, including those with impaired color vision. Learn more about [color and web accessibility](#).

## Generative AI and Figures, images and artwork

Please read our policy on the use of generative AI and AI-assisted tools in figures, images and artwork, which can be found in Elsevier's [GenAI Policies for Journals](#). This policy states:

- We do not permit the use of Generative AI or AI-assisted tools to create or alter images in submitted manuscripts.
- The only exception is if the use of AI or AI-assisted tools is part of the research design or methods (for example, in the field of biomedical imaging). If this is the case, such use must be described in a reproducible manner in the methods section, including the name of the model or tool, version and extension numbers, and manufacturer.
- The use of generative AI or AI-assisted tools in the production of artwork such as for graphical abstracts is not permitted. The use of generative AI in the production of cover art may in some cases be allowed, if the author obtains prior permission from the journal editor and publisher, can demonstrate that all necessary rights have been cleared for the use of the relevant material, and ensures that there is correct content attribution.

## Supplementary material

We encourage the use of supplementary materials such as applications, images and sound clips to enhance research. Some guidelines:

- Supplementary material should be accurate and relevant to the research.
- Cite all supplementary files in the manuscript text.
- Submit all supplementary materials at the same time as your manuscript.
- Include a concise, descriptive caption for each supplementary file, describing its content.
- After submission supplementary files can only be added or replaced in the revision stage of the editorial process.
- Be aware that all supplementary materials provided will appear online in the exact same way as received. These files will not be checked, formatted or typeset by the production team.

## Video

This journal accepts video material and animation sequences to support and enhance your scientific research. We encourage you to include links to video or animation files within articles. Some guidelines:

- When including video or animation file links within your article, refer to the video or animation content by adding a note in your text where the file should be placed.
- Clearly label files ensuring the given file name is directly related to the file content.
- Provide files in one of our [recommended file formats](#). Files should be within our preferred maximum file size of 150 MB per file, 1 GB in total.
- Provide "stills" for each of your files. These will be used as standard icons to personalize the link to your video data. You can choose any frame from your video or animation or make a separate image.
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Research data refers to the results of observations or experimentation that validate research findings, which may also include software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Please read our guidelines on [sharing research data](#) for more information on depositing, sharing and using research data and other relevant research materials.

### **Research data deposit, citation and linking**

For this journal, **Option B** instructions from our [research data guidelines](#) apply. This means that you are **encouraged** to:

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Examples:

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[2] Van der Geer J, Hanraads JA, Lupton RA. The art of writing a scientific article. Heliyon. 2022;19:e00205. <https://doi.org/10.1016/j.heliyon.2022.e00205>.

**Reference to a book:**

[3] Strunk Jr W, White EB. The elements of style. 4th ed. New York: Longman; 2000.

**Reference to a chapter in a book:**

[4] Mettam GR, Adams LB. How to prepare an electronic version of your article. In: Jones BS, Smith RZ, editors. Introduction to the electronic age, New York: E-Publishing Inc; 2023, p. 281-304.

**Reference to a website:**

[5] Cancer Research UK. Cancer statistics reports for the UK, <http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/>; 2023 [accessed 13 March 2023].

**Reference to a dataset:**

[6] Oguro M, Imahiro S, Saito S, Nakashizuka T. Mortality data for Japanese oak wilt disease and surrounding forest compositions [dataset]. Mendeley Data. 2015. <https://doi.org/10.17632/xwj98nb39r.1>.

**Reference to software:**

[7] Coon E, Berndt M, Jan A, Svyatsky D, Atchley A, Kikinon E, et al. Advanced Terrestrial Simulator (ATS). Version 0.88 [software]. Zenodo; 2020 Mar 25. <https://doi.org/10.5281/zenodo.3727209>.

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