DESCRIPTION

Academic Radiology publishes original reports of clinical and laboratory investigations in diagnostic imaging, the diagnostic use of radioactive isotopes, computed tomography, positron emission tomography, magnetic resonance imaging, ultrasound, digital subtraction angiography, image-guided interventions and related techniques. It also includes brief technical reports describing original observations, techniques, and instrumental developments; state-of-the-art reports on clinical issues, new technology and other topics of current medical importance; meta-analyses; scientific studies and opinions on radiologic education; and letters to the Editor.

ABSTRACTING AND INDEXING

Scopus
PubMed/Medline
Embase
Web of Science
Research Alert
Current Contents - Clinical Medicine

EDITORIAL BOARD

Editor-in-Chief
N. Reed Dunnick, University of Michigan, Department of Radiology, 1500 E. Medical Center, 48109-5030, Ann Arbor, Michigan, United States of America

Editorial Coordinator
Flora F. Cauley

Editors Emeriti
Stanley Baum
Edmund A. I. H.A. Franken
Bruce J. B.J. Hillman
**Deputy Editors**

**Abdomen**
- Ravikanth Balaji
- Tara M. Catanzano
- Rajan Gupta
- Hero Hussain
- David Sarkany
- Yoshito Tsushima
- Ashish Wasnik
- Emily Webb
- Shane Wells
- Huadan Xue

**Administration**
- Jocelyn Chertoff
- Kristen DeStigter
- Christopher P. Hess
- M. Elizabeth Oates
- Michael Recht

**Biostatistics**
- Jennifer Bullen
- Sophie Paquerault

**Breast**
- Stamatia Destounis
- Lauren Green
- Sheryl Jordan
- Claudia R. Mello-Thoms
- Kitt Shaffer
- Monica Sheth

**Cardiac**
- Susan Hobbs
- Friedrich Knollmann
- Elsie Nguyen
- U. Joseph Schoepf
- Jadranka Stojanovska

**Education**
- Richard B. Gunderman
- Remy Lobo
- Mark Mullins
- David Naeger
- Jessica Robbins
- Mary Scanlon
- Priscilla Slanetz

**Emergency Radiology**
- Leonard Berliner
- Suzanne Chong

**Health Equity**
- Melissa A. Davis
- Carolynn DeBenedectis
- Saurabh Jha
- James V. Rawson

**Information Technology**
- William Auffermann
- Linda Chu
- Tessa Cook
- Paula M. Jacobs
- Andrew Smith
- Ronald Summers
- Srini Tridandapani
Interventional Radiology
Osman Ahmed
Minhaj Khaja
M. Victoria Marx

Medical Physics
Elizabeth A. Krupinski
Dariya Malyarenko
Ingrid Reiser
Alexey Surov

Musculoskeletal Radiology
Omer Awan
Qian Dong
Eric England
Linda Probyn
Christopher Straus

Neuroradiology
Aristides Capizzano
Colin Derdeyn
Allison Grayev
John Kim
Pina Sanelli
Bruce Wasserman

Nuclear Radiology
Brett Carter
Eric Rohren

Pediatric Radiology
Teresa Chapman
Aparna Joshi
Alexander J. Towbin

Pulmonary
Robert Brown, Jr.
Julianna M. Czum
Ritu Gill
Elizabeth Lee
Rahim Rizi
Baris Turkbey
Fu-Zong Wu

Ultrasound
Aya Kamaya
Mark Kliewer

Quality
Jonathan Kruskal
Cecilia Mercado

Editorial Executive Committee
Omer Awan
Jocelyn Chertoff
Tessa Cook
Richard Gunderman
Elizabeth A. Krupinski
James V. Rawson
Kitt Shaffer
Priscilla Slanetz
Christopher Straus
Shane Wells
GUIDE FOR AUTHORS

INTRODUCTION

Academic Radiology, the official journal of the Association of University Radiologists, the Society of Chairs of Academic Radiology Departments, the Association of Program Directors in Radiology, the American Alliance of Academic Chief Residents in Radiology, the Alliance of Medical Student Educators in Radiology, the Radiology Research Alliance, the Radiology Alliance for Health Services Research, and the Alliance of Clinician-Educators in Radiology, is a monthly publication devoted to contributions pertinent to academic radiology and the radiological sciences.

Submission checklist

You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:
- E-mail address
- Full postal address

All necessary files have been uploaded:

**Manuscript:**
- Include keywords
- All figures (include relevant captions)
- All tables (including titles, description, footnotes)
- Ensure all figure and table citations in the text match the files provided
- Figure and table legends should be included in the main manuscript file as a list, placed after the references (and not attached to figures and tables).
- Indicate clearly if color should be used for any figures in print

**Graphical Abstracts / Highlights files** (where applicable)

**Supplemental files** (where applicable)

Further considerations

- Manuscript has been 'spell checked' and 'grammar checked'
- All references mentioned in the Reference List are cited in the text, and vice versa
- Permission has been obtained for use of copyrighted material from other sources (including the Internet)
- A competing interests statement is provided, even if the authors have no competing interests to declare
- Journal policies detailed in this guide have been reviewed
- Referee suggestions and contact details provided, based on journal requirements

For further information, visit our Support Center.

BEFORE YOU BEGIN

**Ethics in publishing**

Please see our information on Ethics in publishing.

**Studies in humans and animals**

If the work involves the use of human subjects, the author should ensure that the work described has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans. The manuscript should be in line with the Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals and aim for the inclusion of representative human populations (sex, age and ethnicity) as per those recommendations. The terms sex and gender should be used correctly.

Authors should include a statement in the manuscript that informed consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed.
All animal experiments should comply with the ARRIVE guidelines and should be carried out in accordance with the U.K. Animals (Scientific Procedures) Act, 1986 and associated guidelines, EU Directive 2010/63/EU for animal experiments, or the National Research Council's Guide for the Care and Use of Laboratory Animals and the authors should clearly indicate in the manuscript that such guidelines have been followed. The sex of animals must be indicated, and where appropriate, the influence (or association) of sex on the results of the study.

Informed consent and patient details
Studies on patients or volunteers require ethics committee approval and informed consent, which should be documented in the paper. Appropriate consents, permissions and releases must be obtained where an author wishes to include case details or other personal information or images of patients and any other individuals in an Elsevier publication. Written consents must be retained by the author but copies should not be provided to the journal. Only if specifically requested by the journal in exceptional circumstances (for example if a legal issue arises) the author must provide copies of the consents or evidence that such consents have been obtained. For more information, please review the Elsevier Policy on the Use of Images or Personal Information of Patients or other Individuals. Unless you have written permission from the patient (or, where applicable, the next of kin), the personal details of any patient included in any part of the article and in any supplementary materials (including all illustrations and videos) must be removed before submission.

Declaration of competing interest
Corresponding authors, on behalf of all the authors of a submission, must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. All authors, including those without competing interests to declare, should provide the relevant information to the corresponding author (which, where relevant, may specify they have nothing to declare). Corresponding authors should then use this tool to create a shared statement and upload to the submission system at the Attach Files step. Please do not convert the .docx template to another file type. Author signatures are not required.

Declaration of generative AI in scientific writing
The below guidance only refers to the writing process, and not to the use of AI tools to analyse and draw insights from data as part of the research process.

Where authors use generative artificial intelligence (AI) and AI-assisted technologies in the writing process, authors should only use these technologies to improve readability and language. Applying the technology should be done with human oversight and control, and authors should carefully review and edit the result, as AI can generate authoritative-sounding output that can be incorrect, incomplete or biased. AI and AI-assisted technologies should not be listed as an author or co-author, or be cited as an author. Authorship implies responsibilities and tasks that can only be attributed to and performed by humans, as outlined in Elsevier's AI policy for authors.

Authors should disclose in their manuscript the use of AI and AI-assisted technologies in the writing process by following the instructions below. A statement will appear in the published work. Please note that authors are ultimately responsible and accountable for the contents of the work.

Disclosure instructions
Authors must disclose the use of generative AI and AI-assisted technologies in the writing process by adding a statement at the end of their manuscript in the core manuscript file, before the References list. The statement should be placed in a new section entitled ‘Declaration of Generative AI and AI-assisted technologies in the writing process’.

Statement: During the preparation of this work the author(s) used [NAME 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 publication.

This declaration does not apply to the use of basic tools for checking grammar, spelling, references etc. If there is nothing to disclose, there is no need to add a statement.
Author certify that the submitted article will not constitute "Redundant Publication". The Council of Science Editors defines redundant publication as "reporting (publishing or attempting to publish) substantially the same work more than once, without attribution of the original source(s): (CBE Views 1996;19(4):76-77). Characteristics of reports that are substantially similar include (a) "at least one of the authors must be common to all reports (if there are no common authors, it is more likely plagiarism than redundant publication)"; (b) "the subject or study populations are often the same or similar"; (c) "the methodology is typically identical or nearly so"; and (d) "the results and their interpretation generally vary little, if at all."

Submission declaration and verification
Submission of an article implies that the work described has not been published previously (except in the form of an abstract, a published lecture or academic thesis, see 'Multiple, redundant or concurrent publication' for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it 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, your article may be checked by Crossref Similarity Check and other originality or duplicate checking software.

Preprints
Please note that preprints can be shared anywhere at any time, in line with Elsevier's sharing policy. Sharing your preprints e.g. on a preprint server will not count as prior publication (see 'Multiple, redundant or concurrent publication' for more information).

Use of inclusive language
Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Content should make no assumptions about the beliefs or commitments of any reader; contain nothing which might imply that one individual is superior to another on the grounds of age, gender, race, ethnicity, culture, sexual orientation, disability or health condition; and use inclusive language throughout. Authors should ensure that writing is free from bias, stereotypes, slang, reference to dominant culture and/or cultural assumptions. We advise to seek gender neutrality by using plural nouns ("clinicians, patients/clients") as default/wherever possible to avoid using "he, she," or "he/she." We recommend avoiding the use of descriptors that refer to personal attributes such as age, gender, race, ethnicity, culture, sexual orientation, disability or health condition unless they are relevant and valid. When coding terminology is used, we recommend to avoid offensive or exclusionary terms such as "master", "slave", "blacklist" and "whitelist". We suggest using alternatives that are more appropriate and (self-) explanatory such as "primary", "secondary", "blocklist" and "allowlist". These guidelines are meant as a point of reference to help identify appropriate language but are by no means exhaustive or definitive.

Reporting sex- and gender-based analyses
Reporting guidance
For research involving or pertaining to humans, animals or eukaryotic cells, investigators should integrate sex and gender-based analyses (SGBA) into their research design according to funder/sponsor requirements and best practices within a field. Authors should address the sex and/or gender dimensions of their research in their article. In cases where they cannot, they should discuss this as a limitation to their research's generalizability. Importantly, authors should explicitly state what definitions of sex and/or gender they are applying to enhance the precision, rigor and reproducibility of their research and to avoid ambiguity or conflation of terms and the constructs to which they refer (see Definitions section below). Authors can refer to the Sex and Gender Equity in Research (SAGER) guidelines and the SAGER guidelines checklist. These offer systematic approaches to the use and editorial review of sex and gender information in study design, data analysis, outcome reporting and research interpretation - however, please note there is no single, universally agreed-upon set of guidelines for defining sex and gender.

Definitions
Sex generally refers to a set of biological attributes that are associated with physical and physiological features (e.g., chromosomal genotype, hormonal levels, internal and external anatomy). A binary sex categorization (male/female) is usually designated at birth ("sex assigned at birth"), most often based solely on the visible external anatomy of a newborn. 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. Sex and gender are often incorrectly portrayed as binary (female/male or woman/man) and unchanging whereas these constructs actually exist along a spectrum and include additional sex categorizations and gender identities such as people who are intersex/have differences of sex development (DSD) or identify as non-binary. Moreover, the terms "sex" and "gender" can be ambiguous—thus it is important for authors to define the manner in which they are used. In addition to this definition guidance and the SAGER guidelines, the resources on this page offer further insight around sex and gender in research studies.

**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.

One author must be designated as corresponding author to receive and handle all correspondence related to the submission. Similarly, the Journal does not designate co-first authorship. However, you may include a footnote indicating that two authors have contributed equally to the work. All affiliations should be correct at time of acceptance, or at the very latest when proofs are sent for checking, post-acceptance. Please be aware that once your paper is published in a print issue we can no longer make any late amendments to affiliations.

**Changes to authorship**

Authors are expected to consider carefully the list and order of authors before submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made only before the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the corresponding author: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed.

Only in exceptional circumstances will the Editor consider the addition, deletion or rearrangement of authors after the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum.

**Clinical trial results**

In line with the position of the International Committee of Medical Journal Editors, the journal will not consider results posted in the same clinical trials registry in which primary registration resides to be prior publication if the results posted are presented in the form of a brief structured (less than 500 words) abstract or table. However, divulging results in other circumstances (e.g., investors' meetings) is discouraged and may jeopardise consideration of the manuscript. Authors should fully disclose all posting in registries of results of the same or closely related work.

**Reporting clinical trials**

Randomized controlled trials should be presented according to the CONSORT guidelines. At manuscript submission, authors must provide the CONSORT checklist accompanied by a flow diagram that illustrates the progress of patients through the trial, including recruitment, enrollment, randomization, withdrawal and completion, and a detailed description of the randomization procedure. The CONSORT checklist and template flow diagram are available online.

**Article transfer service**

This journal uses the Elsevier Article Transfer Service to find the best home for your manuscript. This means that if an editor feels your manuscript is more suitable for an alternative journal, you might be asked to consider transferring the manuscript to such a journal. The recommendation might be provided by a Journal Editor, a dedicated Scientific Managing Editor, a tool assisted recommendation, or a combination. If you agree, your manuscript will be transferred, though you will have the opportunity to make changes to the manuscript before the submission is complete. Please note that your manuscript will be independently reviewed by the new journal. More information.
Copyright
Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see more information on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.

Author rights
As an author you (or your employer or institution) have certain rights to reuse your work. More information.

Elsevier supports responsible sharing
Find out how you can share your research published in Elsevier journals.

Role of the funding source
You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement, it is recommended to state this.

Please note that the funding statement should be included in a separate 'acknowledgements' file when uploading your paper and not in the main manuscript file.

Open access
Please visit our Open Access page for more information.

Language (usage and editing services)
Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's Author Services.

Dorland's Illustrated Medical Dictionary and Merriam Webster's Collegiate Dictionary (10th edition) should be used as standard references. Style should be patterned after the American Medical Association Manual of Style (16th edition)

Submission
Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

Experiments on human subjects should be carried out in accordance with ethical standards of their institution and with the Helsinki Declaration of 1975, as revised in 1983.

Submit your article
Please submit your article via https://www.editorialmanager.com/arad/.

PREPARATION
Double-blind review
This journal uses double-blind review, which means that both the reviewer and author name(s) are not allowed to be revealed to one another for a manuscript under review. The identities of the authors are concealed from the reviewers, and vice versa. For more information please refer to https://www.elsevier.com/reviewers/peer-review. To facilitate this, please include the following separately:
Title page (with author details): This should include the title, authors' names and affiliations, and a complete address for the corresponding author including telephone and e-mail address. 

Blinded manuscript (no author details): The main body of the paper (including the references, figures, and tables) should not include any identifying information, such as the authors' names or affiliations.

Use of word processing software
It is important that the file be saved in the native format of the word processor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the word processor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). Note that source files of figures, tables and text graphics will be required whether or not you embed your figures in the text. See also the section on Electronic artwork.

To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

LaTeX
Files can be submitted in LaTeX format, provided that they are prepared in accordance with the Elsevier LaTeX package. Because LaTeX files must be converted for the Journal production process, authors whose articles are accepted are urged to check their article proofs carefully. If the LaTeX file is suitable, proofs will be produced without rekeying the text. The article should preferably be written using Elsevier's document class 'elsarticle', or alternatively any of the other recognized classes and formats supported in Elsevier's electronic submissions system, for further information visit our Support Center. The Elsevier 'elsarticle' LaTeX style file package (including detailed instructions for LaTeX preparation) can be obtained from the Quickguide: https://www.elsevier.com/latex. It consists of the file: elsarticle.cls, complete user documentation for the class file, bibliographic style files in various styles, and template files for a quick start.

Article structure

Original investigations, Whitley Award, Memorial Award, Diversity, RAHSR, Overdiagnosis, and Education manuscripts should contain discrete Introduction, Materials and Methods, Results, and Discussion sections and should not exceed 6,000 words, (excluding references, tables, and figure legends) 50 references, 8 figures and 4 tables.

Preliminary investigations, technical reports, Laboratory Investigations and Departmental Administration should contain discrete Introduction, Materials and Methods, Results, and Discussion sections and should not exceed 2,500 words, (excluding references, tables, and figure legends) 30 references, 6 figures and 2 tables.

Review articles and Special Reports should not exceed 7,500 words, (excluding references, tables, and figure legends) 125 references, 24 figures and 4 tables.

Perspectives should not exceed 2500 words (excluding references, tables, and figure legends), 35 references and no figures or tables.

Point/Counterpoint should not exceed 2500 words (excluding references, tables, and figure legends), 35 references and 8 figures and 1 table.

Guest Editorials should not exceed 1,800 words (excluding references, tables, and figure legends), references and no figures or tables.

Letters to the Editor should not exceed 700 words (excluding references, tables, and figure legends), 8 references and no figures or tables.

Manuscripts submitted for special or focused issues should follow the guidelines for the specific classification of the submissions (i.e. ORI or Review paper).
**Subdivision - unnumbered sections**
Divide your article into clearly defined sections. Each subsection is given a brief heading. Each heading should appear on its own separate line. Subsections should be used as much as possible when cross-referencing text: refer to the subsection by heading as opposed to simply 'the text'.

**Introduction**
State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

**Material and methods**
Provide sufficient details to allow the work to be reproduced by an independent researcher. Methods that are already published should be summarized, and indicated by a reference. If quoting directly from a previously published method, use quotation marks and also cite the source. Any modifications to existing methods should also be described.

**Results**
Results should be clear and concise.

**Discussion**
This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

**Conclusions**
The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

**Appendices**
If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

**Essential title page information**
- **Title.** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
- **Author names and affiliations.** Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. You can add your name between parentheses in your own script behind the English transliteration. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lowercase superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.
- **Corresponding author.** Only one author may be designated as corresponding author to receive and handle all correspondence related to the submission. Similarly, the Journal does not designate co-first authorship. However, you may include a footnote indicating that two authors have contributed equally to the work. The responsibility of the single corresponding author includes answering any future queries about Methodology and Materials. **Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.**
    - **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

**Structured abstract**
A structured abstract, by means of appropriate headings, should provide the context or background for the research and should state its purpose, basic procedures (selection of study subjects or laboratory animals, observational and analytical methods), main findings (giving specific effect sizes and their statistical significance, if possible), and principal conclusions. It should emphasize new and important aspects of the study or observations.

Original investigations, preliminary investigations, and technical reports require a structured abstract as the second page of the manuscript. The abstract (of no more than 250 words) should be organized into four separate paragraphs titled **Rationale and Objectives, Materials and Methods, Results,** and **Conclusion.** Three to five Keywords that are suitable for indexing the manuscript should follow.
**Abbreviations**
Please submit a list of abbreviations used in your article, to appear in a callout box alongside the text. All abbreviations and acronyms must be defined at first mention in the text and should be used a minimum of three times throughout the article text. Write out the full term for each abbreviation, followed by its definition in parentheses. Abbreviations appearing in figures and in table text should be defined in their respective figure captions and table footnotes in alphabetical order.

**Acknowledgements**
Acknowledgements are to be uploaded as a separate submission item that will not be seen by the reviewers. Do not include them on the title page, as a footnote to the title or otherwise in the text. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

**Drug Names/Instrumentation Names**
Scientific (generic) names of drugs should be used when first cited, followed by (in parentheses) the trade (proprietary) name and the manufacturer and location (city/state/country) of the product. In subsequent mention in the article, the generic name should be used. Names of instruments should be followed by the manufacturer's name and location (city/state/country) in parentheses. In subsequent mention, only the name of the instrument should be used. In subsequent mention in the article, the generic name should be used.

**Formatting of funding sources**
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 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.

**Units**
Follow internationally accepted rules and conventions: use the international system of units (SI). If other units are mentioned, please give their equivalent in SI.

**Math formulae**
Please submit math equations as editable text and not as images. Present simple formulae in line with normal text where possible and use the solidus (/) instead of a horizontal line for small fractional terms, e.g., X/Y. In principle, variables are to be presented in italics. Powers of e are often more conveniently denoted by exp. Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text).

**Footnotes**
Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors can build footnotes into the text, and this feature may be used. Otherwise, please indicate the position of footnotes in the text and list the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

**Artwork**
**Electronic artwork**
**General points**
- Make sure you use uniform lettering and sizing of your original artwork.
- Embed the used fonts if the application provides that option.
- Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
• Size the illustrations close to the desired dimensions of the published version.
• Submit each illustration as a separate file.
• Ensure that color images are accessible to all, including those with impaired color vision.

A detailed guide on electronic artwork is available.

You are urged to visit this site; some excerpts from the detailed information are given here.

**Formats**
If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.

Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please 'Save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

- EPS (or PDF): Vector drawings, embed all used fonts.
- TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.
- TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.
- TIFF (or JPEG): Combinations bitmapped line/half-tone (color or grayscale), keep to a minimum of 500 dpi.

**Please do not:**
• Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
• Supply files that are too low in resolution;
• Submit graphics that are disproportionately large for the content.

**Color artwork**
Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF), or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color online (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. **For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article.** Please indicate your preference for color: in print or online only. Further information on the preparation of electronic artwork.

**Figure captions**
Ensure that each illustration has a caption. Supply captions in the text as a list following the references, not attached to the figure. A caption should comprise a brief title (**not** on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

**Text graphics**
Text graphics may be embedded in the text at the appropriate position. If you are working with LaTeX and have such features embedded in the text, these can be left. See further under Electronic artwork.

**Tables**
Tables should be submitted in Word in separate files from the manuscript file. **Tables submitted in .tif, .jpeg, .bmp, .pdf, or PowerPoint format are unacceptable for publication.** Tables must be numbered and cited in the text in numerical order. Table titles should be placed above each of their respective tables. Please use *, †, ‡, etc., in the table text to indicate the corresponding table footnotes below the table. Each table should be typed on its own separate page. Previously published tables must be accompanied by written permission to reprint from the publisher and authors, with sources cited in the text.

**References**

**Citation in Text**
Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. Citation of a reference as 'in press' implies that the item has been accepted for publication.

**Reference links**
Increased discoverability of research and high quality peer review are ensured by online links to the sources cited. In order to allow us to create links to abstracting and indexing services, such as Scopus, Crossref and PubMed, please ensure that data provided in the references are correct. Please note that
incorrect surnames, journal/book titles, publication year and pagination may prevent link creation. When copying references, please be careful as they may already contain errors. Use of the DOI is highly encouraged.

A DOI is guaranteed never to change, so you can use it as a permanent link to any electronic article. An example of a citation using DOI for an article not yet in an issue is: VanDecar J.C., Russo R.M., James D.E., Ambhe W.B., Franke M. (2003). Aseismic continuation of the Lesser Antilles slab beneath northeastern Venezuela. Journal of Geophysical Research, https://doi.org/10.1029/2001JB000884. Please note the format of such citations should be in the same style as all other references in the paper.

Data references
This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

Preprint references
Where a preprint has subsequently become available as a peer-reviewed publication, the formal publication should be used as the reference. If there are preprints that are central to your work or that cover crucial developments in the topic, but are not yet formally published, these may be referenced. Preprints should be clearly marked as such, for example by including the word preprint, or the name of the preprint server, as part of the reference. The preprint DOI should also be provided.

Reference formatting
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct. If you do wish to format the references yourself they should be arranged according to the following examples:

References must be cited in the text in numerical order. Unpublished data and personal communications (written or oral) are to be cited only in the text in parentheses (eg, Wallace PS, unpublished data, 1993).

Journal article

Book

Chapter in a book

Website

Journal abbreviations source
Journal names should be abbreviated according to the List of Title Word Abbreviations.

Supplementary data
Elsevier accepts electronic supplementary material to support and enhance your scientific research. Supplementary files offer the author additional possibilities to publish videos, supporting applications, high-resolution images, background datasets, sound clips and more. Supplementary files supplied will be published online alongside the electronic version of your article in Elsevier Web products, including ScienceDirect: http://www.sciencedirect.com. In order to ensure that your submitted material is directly usable, please provide the data in one of our recommended file formats. Authors should submit the material in electronic format together with the article and supply a concise and descriptive caption for each file. For more detailed instructions please visit our artwork instruction pages at https://www.elsevier.com/artworkinstructions.
AFTER ACCEPTANCE

Online proof correction

To ensure a fast publication process of the article, we kindly ask authors to provide us with their proof corrections within two days. Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors.

If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.

We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.

AUTHOR INQUIRIES

Visit the Elsevier Support Center to find the answers you need. Here you will find everything from Frequently Asked Questions to ways to get in touch.

You can also check the status of your submitted article or find out when your accepted article will be published.

© Copyright 2018 Elsevier | https://www.elsevier.com