DESCRIPTION

The *Journal of Arthroplasty* brings together the clinical and scientific foundations for *joint replacement*. This peer-reviewed journal publishes original research and manuscripts of the highest quality from all areas relating to joint replacement or the *treatment* of its complications, including those dealing with clinical series and experience, prosthetic design, biomechanics, biomaterials, metallurgy, biologic response to *arthroplasty* materials *in vivo* and *in vitro*.

**Benefits to authors**

We also provide many author benefits, such as free PDFs, a liberal copyright policy, special discounts on Elsevier publications and much more. Please click here for more information on our *author services*.

Please see our *Guide for Authors* for information on article submission. If you require any further information or help, please visit our *Support Center*.

IMPACT FACTOR

2018: 3.524 © Clarivate Analytics Journal Citation Reports 2019

ABSTRACTING AND INDEXING

Scopus

EDITORIAL BOARD

*Editor-in-Chief*

John J. Callaghan, The University of Iowa, Iowa City, Iowa, United States

*Assistant Editor-in-Chief*

Michael Mont, Lenox Hill Hospital, New York, New York, United States

*Deputy Editor*

Yan Wang, Chinese PLA General Hospital, Beijing, China

*Associate Editor for Social Media*

Chad Krueger
Associate Editors
David Backstein
James Browne
Mohamad J. Halawi
Viktor Krebs
J. Bohannon Mason

Emeritus Editors
George Bentley
W.J. Hozack
David S. Hungerford
Richard H. Rothman

Founding Members
Lawrence Dorr
Jorge Galante
David S. Hungerford
Amar S. Ranawat
Richard D. Scott

Editorial Board
Ayesha Abdeen
Nicholas Abidi
Muyibat Adelani
Edward Adler
Derek Amanatullah
Kevin Anbari
Lucas Anissian
John Antoniou
Mike Archibeck
Lucas Armstrong
William V. Arnold
Michael P. Ast
Michael D. Baratz
B.T. Barlow
C. Lowry Barnes
Nicholas Bedard
Scott Berkenblit
Hari Bezwada
Roberto Binazzi
Stefano A. Bini
James C. Binski
David Blaha
Thomas J. Blumenfeld
Dennis Bobyn
Richard Boiardo
Alberto Bolanos
Peter Bonutti
Allen D. Boyd, Jr.
John K. Bradway
Brandon Broome
Timothy S. Brown
Joseph E. Broyles
Lucas J. Burton
Thiago S. Busato
Allen Butler
Pat Campbell
Antonia F. Chen
Kim J. Chillag
George Chimento
Andrew Cobb
Maxwell Courtney
Ross Crawford
James Crutcher
John M. Cuckler
Quanjun Cui
Brian Curtis
Jason J. Davis
Marc M. DeHart
Gregory Deirmengian
Daniel John Del Gaizo
Ronald E. Delanois
Claudio Diaz-Ledezma
J.N. Duke
Stephen Duncan
Mark D. Earll
Orry Erez
Kace Ezzet
Theodore Firestone
Jared Foran
Rob Fraser
Jonathan Garino
Jeffrey Geller
Jeremy Gilillard
Nicholas Giori
Jeffrey M. Goldstein
Wayne M. Goldstein
Gregory J. Golladay
Stuart B. Goodman
Stuart Gordon
Kenneth A. Greene
A. Seth Greenwald
William L. Griffin
Allan E. Gross
Michael Gross
William Hamilton
Brian Hamlin
Paul Harvie
Steven F. Harwin
Masaru Higa
Carlos Higuera Rueda
Andrew Hodge
James Huddleston
Michael Huo
David A. Iacobelli
Yong In
Yukata Inaba
Bernardo Innocenti
Hiroshi Ito
David Jacofsky
Rajesh Jain
Rina Jain
Tetsuya Jinno
Lynne Jones
Harpal Khanuja
Kang-II Kim
Paul King
Tracy Kinsey
Brian Klett
Jih-Yang Ko
Kyung Hoi Koo
Matthew Kopplin
Paul Lachiewicz
Carlos J. Lavernia
Gwo-Chin Lee
Brett R. Levine
Roger N. Levy
Jay R. Lieberman
Adolph V. Lombardi, Jr.
William J. Long
Steven T. Lyons
James H. MacDonald
Robert Malinzak
Mitchell Maltenfort
David C. Markel
Bassam Masri
Tomoyuki Matsumoto
Andreas Mavrogenis
Benjamin A. McArthur
Harry A. McKellop
David Clinton McNabb
John B. Meding
Menachem Meller
Stuart Melvin
R. Michael Meneghini
William Mihalko
Wayne Moschetti
Thomas Myers
James Nace
Sumon Nandi
Justine Naylor
Fred Nelson
Scott Nodzo
W Trevor North
Kevin L. Ong
Eric M. Orenstein
Dionisio Ortiz III
Douglas Padgett
Michael Pagnotto
Thomas Parker Vail
Nirav Patel
Shaun Patel
Brett Perricelli
Philippe Piriou
Aidin Pour
Amir Pourmoghaddam
Ashok Rajgopal
Parthiv Rathod
Harold Rees
Karl Roberts
Samuel Rosas
Lee Eric Rubin
Hannes A. Rüdiger
Patrick Sadoghi
Arjun Saxena
Steven F. Schutzer
Benjamin Schwartz
Ran Schwarzkopf
Gareth Scott
Todd Sekundiak
Peter F. Sharkey
Bin Shen
Neil Sheth
Rafael J. Sierra
Mark J. Spangehl
Bryan D. Springer
Jeffery B. Stambough
Robert Sterling
Louis S. Stryker
Nobuhiko Sugano
Hiromasa Tanino
Michael Tanzer
Rupesh Tarwala
Tetsuya Tomita
Geoffrey Tompkins
Krishna R. Tripuraneni
Eleftherios Tsiridis
Creighton Tubb
Thomas R. Turgeon
Anthony Unger
Shrinand V. Vaidya
INTRODUCTION

The Journal of Arthroplasty brings together under one cover the clinical and scientific foundations for joint replacement of the hip and knee. The Journal solicits manuscripts of the highest quality from all areas of scientific endeavor that relate to joint replacement or the treatment of its complications, including those dealing with clinical series and experience, prosthetic design, biomechanics, biomaterials, metallurgy, biologic response to arthroplasty materials in vivo and in vitro that allow unique insight into any aspect of arthroplasty.

It is the purpose of the Journal to present material to practicing Orthopaedic surgeons that will keep them abreast of developments in the field, prove useful in the care of patients with major joint disability, and aid in understanding the scientific foundation of this subspecialty area of orthopaedics. The international members of the Editorial Board provide a worldwide perspective for the journal's area of interest. Their participation ensures that each issue of The Journal of Arthroplasty provides the reader with timely, peer-reviewed articles of the highest quality.

Types of paper

Original Research Articles

Abbreviated Clinical Follow-up Reports. This type of format should be utilized as a supplement to articles that originally were published in The Journal of Arthroplasty. The intent is to inform readers of the quality of clinical follow-up with a minimum of five additional years of study. The approximate length should be five manuscript pages.

The follow-up report should summarize the original study published in The Journal of Arthroplasty including patient population, type of reconstruction and type of series i.e., selected, unselected, consecutive. It is anticipated that the same assessment format would be utilized as in the previous report using generally accepted clinical grading systems for the knee and hip. Survivorship analysis is helpful and appropriate.

The follow-up report should include evolution of the population since the original study particularly in regard to patients lost for various reasons. At a minimum, the number and percentage of revisions should be included as well as additional complications. If survivorship analysis is utilized the follow-up report should include revisions for aseptic loosening, revisions for any cause, and radiographic loosening.

Brief Communications. Brief Communications are meant to be reports that promptly disseminate new ideas and observations. These ideas may not be sufficiently mature or evaluated to merit publication as a full manuscript and yet may be of interest and importance. An example would be the report of a group of catastrophic failures of a new implant design that would serve as an early warning to the readership. Brief Communications will be limited to 2 printed pages, including text, tables, figures, and references. This corresponds to 6 double-spaced standard manuscript pages, with 1 page of text eliminated for every figure or table added. References should be limited to less than 10. In addition, the standard complete format for papers—introduction, materials and methods, results, and discussion—may be eliminated; however, please include a brief abstract. Brief Communications will be reviewed as soon as possible and, when accepted, published in the next possible issue.

Review Articles. Review Articles are solicited by invitation of the Editors. Unsolicited Review Articles are not considered. However, prospective authors who wish to suggest a Review Article may send a one-page proposal to the Managing Editor at journalofarthroplasty@gmail.com for consideration by the Editors.

Systematic reviews and meta-analyses should be submitted as article type "Original Research Article" and follow all formatting requirements accordingly. No pre-submission approval is required, but the Editors reserve the right to decline peer review of systematic reviews and meta-analysis submissions that they deem as not suitable for the Journal. If systematic reviews and meta-analysis submissions are peer reviewed, they will be treated as original articles, not review articles.
**Case Reports.** Case Reports are no longer published in The Journal of Arthroplasty. JOA’s sister publication, Arthroplasty Today, welcomes such submissions ([http://ees.elsevier.com/artd/](http://ees.elsevier.com/artd/)).

**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:**
- Ensure the text is fully blinded
- Include the abstract
- Include keywords after the abstract
- Continuous line numbers
- Page numbers (lower right corner)
- 1.5 or double line spacing
- All figures (include relevant captions); please do NOT place figures mid-text
- All tables (including titles, description, footnotes); please do NOT place tables mid-text
- Ensure all figure and table citations in the text match the files provided
- Indicate clearly if color should be used for any figures in print

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 pages on Ethics in publishing and Ethical guidelines for journal publication.

**IRB Approval**
Manuscripts describing research involving human subjects must have Institutional Review Board (IRB) approval prior to any review process. Please note the approval in the cover letter or on a separate piece of paper. IRB documentation should be available upon request.

**Conflict of Interest**
* All authors are required to disclose any actual or potential conflict of interest including any financial, personal or other relationships with other people or organizations within three years of beginning the submitted work that could inappropriately influence, or be perceived to influence, their work. Two Conflict of Interest Statements are required: one individual disclosure submitted by each author, signed (signature or typed), and dated; and one combined, blinded form submitted without author names but with all authors' disclosure information on one form. The individual Conflict of Interest form can be found [here](#). The combined (blinded) Conflict of Interest form can be found [here](#).

**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 originality, your article may be checked by the originality detection service Crossref Similarity Check.

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. Articles should make no assumptions about the beliefs or commitments of any reader, should contain nothing which might imply that one individual is superior to another on the grounds of race, sex, culture or any other characteristic, and should use inclusive language throughout. Authors should ensure that writing is free from bias, for instance by using 'he or she', 'his/her' instead of 'he' or 'his', and by making use of job titles that are free of stereotyping (e.g. 'chairperson' instead of 'chairman' and 'flight attendant' instead of 'stewardess').

Guidelines for Authorship
Each author is responsible for the content and accuracy of the entire manuscript, with the exception of students, residents, and fellows. Each author should participate in the content and design of the study, the preparation of the manuscript and its revisions, and final approval. "Gift authors" and "ghostwriters" should be excluded. A maximum of 6 authors will be allowed. Other individuals who contribute effort to the process should be identified as "contributors" and acknowledged at the end of the manuscript together with their contribution. The order and inclusion should be decided by consensus among the authors themselves and acknowledged in writing. Authors of manuscripts representing a multi-center study who wish to exceed The Journal's limit of six authors can be listed as a "writing Committee", all of whom assume responsibility for the overall content and integrity of the article. Members of the writing committee are listed in the footnote on the title page of the published article and their affiliations are listed in an appendix. In-text citations should include the first and second authors. The authors should clearly indicate the predominant surgeon or surgeons who have contributed patients. Contributing patients is not sufficient in and of itself to merit authorship.

Changes to Authorship
After submission, authors may not add, remove or change authors of the manuscript unless, on appeal to the Editor an exclusion is made.

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.

Registration of clinical trials
Registration in a public trials registry is a condition for publication of clinical trials in this journal in accordance with International Committee of Medical Journal Editors recommendations. Trials must register at or before the onset of patient enrolment. The clinical trial registration number should be included at the end of the abstract of the article. A clinical trial is defined as any research study that prospectively assigns human participants or groups of humans to one or more health-related interventions to evaluate the effects of health outcomes. Health-related interventions include any intervention used to modify a biomedical or health-related outcome (for example drugs, surgical procedures, devices, behavioural treatments, dietary interventions, and process-of-care changes). Health outcomes include any biomedical or health-related measures obtained in patients or
participants, including pharmacokinetic measures and adverse events. Purely observational studies (those in which the assignment of the medical intervention is not at the discretion of the investigator) will not require registration.

**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.

For gold open access articles: Upon acceptance of an article, authors will be asked to complete an "Exclusive License Agreement" ([more information](#)). Permitted third party reuse of gold open access articles is determined by the author's choice of [user license](#).

**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 then this should be stated.

**Open access**

Please visit our Open Access page from the Journal Homepage for more information.

*Elsevier Researcher Academy*

Researcher Academy is a free e-learning platform designed to support early and mid-career researchers throughout their research journey. The "Learn" environment at Researcher Academy offers several interactive modules, webinars, downloadable guides and resources to guide you through the process of writing for research and going through peer review. Feel free to use these free resources to improve your submission and navigate the publication process with ease.

*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.

*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.
**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.

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

**PREPARATION**

**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.

**Article structure**

**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 lower-
case 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.** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. This responsibility 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.

**Highlights**

Highlights are optional yet highly encouraged for this journal, as they increase the discoverability of your article via search engines. They consist of a short collection of bullet points that capture the novel results of your research as well as new methods that were used during the study (if any). Please have a look at the examples here: example Highlights.

Highlights should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point).

**Abstract**

A structured abstract is required and should use the following headings: Background Methods Results Conclusion

An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

Abstracts may not exceed 250 words.

**Keywords**

Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

**Abbreviations**

Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

**Acknowledgements**

Collate acknowledgements in a separate file and upload as "Acknowledgement Page" file type at submission. Do not include acknowledgements on the title page, in the blinded manuscript file, as a footnote to the title page or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

**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, please 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.
**Illustration services**

*Elsevier's Author Services* offers Illustration Services to authors preparing to submit a manuscript but concerned about the quality of the images accompanying their article. Elsevier's expert illustrators can produce scientific, technical and medical-style images, as well as a full range of charts, tables and graphs. Image 'polishing' is also available, where our illustrators take your image(s) and improve them to a professional standard. Please visit the website to find out more.

**Figure captions**

Ensure that each illustration has a caption. Supply captions separately, 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.

**Tables**

Please submit tables as editable text and not as images. Tables may be inserted in the manuscript text file or uploaded as separate "Table" files. Tables that are incorporated into the manuscript text file should be placed at the end of the manuscript text, not mid-text. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules.

**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. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. 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., Ambeh 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.

**Web references**

As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

**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.

**References in a special issue**

Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.
Reference management software
Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support Citation Style Language styles, such as Mendeley. Using citation plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal’s style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide. If you use reference management software, please ensure that you remove all field codes before submitting the electronic manuscript. More information on how to remove field codes from different reference management software.

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:
http://open.mendeley.com/use-citation-style/the-journal-of-arthroplasty
When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

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:

Reference style
Text: Indicate references by number(s) in square brackets in line with the text. The actual authors can be referred to, but the reference number(s) must always be given.
List: Number the references (numbers in square brackets) in the list in the order in which they appear in the text.
Examples:
Reference to a journal publication:
Reference to a journal publication with an article number:
Reference to a book:
Reference to a chapter in an edited book:
Reference to a website:
Reference to a dataset:
Note shortened form for last page number. e.g., 51–9, and that for more than 6 authors the first 6 should be listed followed by 'et al.' For further details you are referred to 'Uniform Requirements for Manuscripts submitted to Biomedical Journals' (J Am Med Assoc 1997;277:927–34) (see also Samples of Formatted References).

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

Video
Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body
text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the file in one of our recommended file formats with a preferred maximum size of 150 MB per file, 1 GB in total. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect. Please supply 'stills' with your files; you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

**Data visualization**

Include interactive data visualizations in your publication and let your readers interact and engage more closely with your research. Follow the instructions [here](#) to find out about available data visualization options and how to include them with your article.

**Supplementary material**

Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

**Research data**

This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings. To facilitate reproducibility and data reuse, this journal also encourages you to share your software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.

**Data linking**

If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the [database linking page](#).

For [supported data repositories](#) a repository banner will automatically appear next to your published article on ScienceDirect.

In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

**Mendeley Data**

This journal supports Mendeley Data, enabling you to deposit any research data (including raw and processed data, video, code, software, algorithms, protocols, and methods) associated with your manuscript in a free-to-use, open access repository. During the submission process, after uploading your manuscript, you will have the opportunity to upload your relevant datasets directly to Mendeley Data. The datasets will be listed and directly accessible to readers next to your published article online.

For more information, visit the [Mendeley Data for journals page](#).
**Data statement**
To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the Data Statement page.

**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.

**Offprints**
The corresponding author, at no cost, will be provided with a PDF file of the article via e-mail (the PDF file is a watermarked version of the published article and includes a cover sheet with the journal cover image and a disclaimer outlining the terms and conditions of use). For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's Author Services.

**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