



# RADIOTHERAPY & ONCOLOGY

Journal of the [European Society for Radiotherapy and Oncology](#) and affiliated to the [Canadian Association of Radiation Oncology](#).

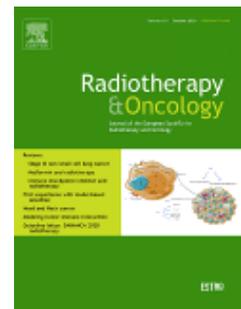
ELSEVIER

ESTRO members can access *Radiotherapy and Oncology* online via the members-only section of the ESTRO website: please go to <http://www.estro.org> and follow the links.

## AUTHOR INFORMATION PACK

### TABLE OF CONTENTS

●	<b>Description</b>	<b>p.1</b>
●	<b>Audience</b>	<b>p.1</b>
●	<b>Impact Factor</b>	<b>p.1</b>
●	<b>Abstracting and Indexing</b>	<b>p.1</b>
●	<b>Editorial Board</b>	<b>p.2</b>
●	<b>Guide for Authors</b>	<b>p.4</b>



ISSN: 0167-8140

### DESCRIPTION

*Radiotherapy and Oncology* publishes papers describing original research as well as review articles. It covers areas of interest relating to radiation oncology. This includes: clinical radiotherapy, combined modality treatment, translational studies, epidemiological outcomes, imaging, dosimetry, and radiation therapy planning, experimental work in radiobiology, chemobiology, hyperthermia and tumour biology, as well as data science in radiation oncology and physics aspects relevant to oncology. Papers on more general aspects of interest to the radiation oncologist including chemotherapy, surgery and immunology are also published.

Editorial Office:

Professor Michael Baumann, Editor-in-Chief, Radiotherapy and Oncology Editorial Office, Deutsches Krebsforschungszentrum (DKFZ), Im Neuenheimer Feld 280, 69120, Heidelberg, Germany (email: [RadioTherOncol@dkfz.de](mailto:RadioTherOncol@dkfz.de)).

### AUDIENCE

Radiotherapists, Clinical Cancer Researchers, Radiation Oncologists, Medical Physicists.

### IMPACT FACTOR

2019: 4.856 © Clarivate Analytics Journal Citation Reports 2020

### ABSTRACTING AND INDEXING

Chemical Abstracts  
Embase  
Current Contents - Clinical Medicine  
PubMed/Medline  
Elsevier BIOBASE  
Scopus

## EDITORIAL BOARD

---

### *Editor-in-Chief*

**Michael Baumann**, Heidelberg, Germany

### *Editor-in-Chief Emeritus*

**Jens Overgaard**, Aarhus, Denmark

### *Editors*

**Marianne Aznar**, København, Denmark

**Rob Coppes**, Groningen, Netherlands

**Eric Deutsch**, Villejuif, France

**Dietmar Georg**, Vienna, Austria

**Karin Haustermans**, Leuven, Belgium

**Peter Hoskin**, Northwood, United Kingdom

**Albert van der Kogel**, Wisconsin, United States

**Mechthild Krause**, Dresden, Germany

**Eric Lartigau**, Lille, France

**Birgitte Offersen**, Aarhus, Denmark

**David Thwaites**, Leeds, United Kingdom

**Vincenzo Valentini**, Milan, Italy

**Uulke Van der Heide**, Amsterdam, Netherlands

### *Editor, Biostatistics and Modelling*

**Steffen Löck**, Dresden, Germany

### *Editorial Board*

**vincent gregoire**, Lyon, France

**Raymond Abratt**, Cape Town, South Africa

**Markus Alber**, Aarhus, Denmark

**Michel Bolla**, Grenoble, France

**Thomas Bortfeld**, Massachusetts, United States

**Jean Bourhis**, Lausanne, Switzerland

**Michael Brada**, Wirral, United Kingdom

**Robert Bristow**, Toronto, Canada

**Wilfried Budach**, Dusseldorf, Germany

**Jan Bussink**, Nijmegen, Netherlands

**Rebecca Bütof**, Dresden, Germany

**Felipe Calvo**, Madrid, Spain

**Stephanie Combs**, Munich, Germany

**Nils Cordes**, Dresden, Germany

**Olav Dahl**, Bergen, Norway

**Dirk De Ruyscher**, Maastricht, Netherlands

**Jürgen Debus**, Heidelberg, Germany

**Jim Denham**, Waratah, Australia

**Gillian Duchesne**, Melbourne, Australia

**Avraham Eisbruch**, Michigan, United States

**Sara Faithfull**, Guildford, United Kingdom

**Claudio Fiorino**, Milano, Italy

**Jordi Giralt**, Barcelona, Spain

**D.R. Gomez**, Texas, United States

**Cai Grau**, Aarhus, Denmark

**Anca-Ligia Grosu**, Freiburg, Germany

**Matthias Guckenberger**, Zurich, Switzerland

**Xiashan Hao**, Tianjin, China

**Kevin Harrington**, London, United Kingdom

**B.J. Heijmen**, Rotterdam, Netherlands

**Masahiro Hiraoka**, Kyoto, Japan

**Johannes Kaanders**, Nijmegen, Netherlands

**Joanna Kazmierska**, Poznan, Poland

**Lucyna Kepka**, Olsztyn, Poland

**Tommy Knöös**, Lund, Sweden

**Tommy Kron**, Victoria, Australia

**Philippe Lambin**, Heerlen, Netherlands

**Johannes Langendijk**, Groningen, Netherlands

**Anne W.M. Lee**, Shenzhen, China

**Michelle Leech**, Dublin, Ireland

**Zhongxing Liao**, Madrid, Spain  
**Philippe Maingon**, Dijon, France  
**Ben Mijnheer**, Amsterdam, Netherlands  
**Ursula Nestle**, Freiburg, Germany  
**Dag Rune Olsen**, Oslo, Norway  
**Philip Poortmans**, Wilrijk-Antwerp, Belgium  
**Richard Pötter**, Vienna, Austria  
**Dirk Rades**, Lübeck, Germany  
**Hans Peter Rodemann**, Tuebingen, Germany  
**Francisco Sanchez-Doblado**, Seville, Spain  
**Herman Suit**, Massachusetts, United States  
**Howard Thames**, Texas, United States  
**Daniela Thorwarth**, Tübingen, Germany  
**Wolfgang Tome**, New York, United States  
**Conchita Vens**, Amsterdam, Netherlands  
**Marcel Verheij**, Nijmegen, Netherlands  
**Dirk Vordermark**, Halle (Saale), Germany  
**Henning Willers**, Massachusetts, United States  
**Bradly Wouters**, Ontario, Canada  
**Bo Xu**, Tianjin, China  
**Zhen Zhang**, Shanghai, China  
**Daniel Zips**, Munich, Germany

***Past Editors***

**Harry Bartelink**  
**Emmanuel van der Schueren**

## GUIDE FOR AUTHORS

---

### INTRODUCTION

*Radiotherapy and Oncology* (also known as The Green Journal) publishes papers describing original research as well as review articles. It covers areas of interest relating to radiation oncology. This includes: clinical radiotherapy, combined modality treatment, translational studies, epidemiological outcomes, imaging, dosimetry, and radiation planning, experimental work in radiobiology, chemobiology, hyperthermia and tumour biology, as well as physical aspects relevant to oncology. Papers on more general aspects of interest to the radiation oncologist including chemotherapy, surgery and immunology are also published.

#### **Types of article**

##### *1. Full length original articles (max. 3000 words, without references)*

Describe original scientific work in the field of radiation oncology or related areas. The content of the paper should be sufficient to reach valid conclusions. Full papers should include a structured abstract and be divided into sections (Introduction; Materials and Methods; Results; Discussion; References; Tables; Figures) and should not normally exceed 6 printed pages, including references and a maximum of 6 tables/figures. Additional material can be submitted as supplementary files.

##### *2. Short communications, technical notes and data science briefs (max. 2000 words, without references)*

Provide a brief but complete account of a particular piece of work, e.g. Phase I or II study, or a data science article focusing on recurring problems in the evaluation of radiation oncology studies. These articles should in total be no longer than 4 printed pages, normally including references and a maximum of 2 figures or tables. A summary of not more than 50 words should be included (not a structured abstract), but the manuscript can have fewer subheadings (e.g. short introduction; materials and methods; results and discussion). Authors are advised to see a recent issue of the journal for size and lay-out.

##### *3. Review articles (max. 6000 words, without references)*

Rigorous critical assessment of clinical and/or laboratory research in a field of interest to the journal and its subscribers. Reviews are normally solicited by the Editors, and it is suggested that authors wishing to contribute a review article contact the Editor-in-Chief. Reviews should follow the overall structure of full length articles but can be slightly longer (up to 8 printed pages, including references and a maximum of 6 figures or tables,) and should have an unstructured abstract.

##### *4. First in Human - translational innovations in radiation oncology (max. 2000 words, without references)*

This section is for significant innovations which paved the way from the biology or physics laboratory to the clinic, and which will change future clinical research. Only the most important work will be considered by the Editors and fast-track peer-review will be offered to manuscripts of exceptional significance. First-in-Human papers follow the guidelines for Full-Length-Papers.

##### *5. Editorials and commentaries*

Editorials and commentaries relate to articles in the journal or to issues of relevance for the readership. This type of communication is normally solicited by the Editors. Instructions will then be provided separately.

##### *6. Letters to the Editor (max. 500 words, without references)*

On topics of current interest or commenting upon recent material previously or simultaneously published in the journal. They should be limited to 1 printed page, should not have an abstract and may include 1 table or figure.

##### *7. Announcements*

The inclusion of announcements, etc. is at the discretion of the Editors and the Publisher and subject to space availability. Request for inclusion of a meeting announcement should be sent to the ESTRO secretariat (see address in journal).

**NOTE:** *The instructions to authors **must be followed strictly**, and manuscripts not adhering to the instructions may be delayed or omitted from editorial handling. Typical errors are related to the number, quality and format of figures and tables, incorrect list of references (MUST be in order of appearance), or insufficient description and reporting of endpoints and statistical analysis.*

These guidelines generally follow the Uniform Requirements for Manuscripts Submitted to Biomedical Journals. The complete document appears at <http://www.icmje.org>

The full contact details for the Editorial Office are shown below:

**Professor Michael Baumann, Editor-in-Chief, Radiotherapy and Oncology Editorial Office, Deutsches Krebsforschungszentrum (DKFZ), Im Neuenheimer Feld 280, 69120, Heidelberg, Germany (E-mail: [RadioTherOncol@dkfz.de](mailto:RadioTherOncol@dkfz.de))**

In a covering letter, please identify the person responsible for editorial correspondence (address, telephone and fax numbers and email address). The covering letter must be signed by the corresponding author on behalf of all authors. 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. Also include details of any previous submission.

### **Submission Checklist**

Please 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.

**Title page** - Includes all authors and affiliations, the corresponding author clearly indicated with e-mail address and full postal address. **Highlights** Three to five bullet points which convey the core findings of your manuscript. **Abstract** For original research articles this should be structured using sub-headings: Background and purpose, Materials and methods, Results, Conclusion. The abstract should not exceed 250 words. **Manuscript** - Should adhere to structure and the length of pages (including figures and tables) as stated per article type in these instructions. Ensure that language and spelling has been checked. **Figures** - One file per figure (figures with panels must have each panel supplied in a separate file). Supply captions separately. Survival-curves should include the number of patients at risk beneath the figure. Figures should be referred to in the sequence in which they appear. Lines and lettering must be large enough to remain legible after the figure is reduced to fit the 2-column layout of the journal in print (9 cm for one-column, 19 cm for two-columns). Preferred formats are TIFF (for line art, grey scale and colour halftone images using pixels), EPS (for vector line drawings), JPEG (for greyscale and colour halftone images such as photographs or micrographs) or Adobe Acrobat PDF. Please embed all fonts and ensure they are large enough to be read clearly. The minimum required resolution is 300 dpi for photographs and 1000 dpi for line drawings. Click [here](#) for an example of a survival curve. **Table** - One file per complete table. Tables must be submitted as editable text and numbered consecutively. Supply a brief title. Do not use vertical rules, color or shading in tables. **References** Every reference must be cited in the text and numbered consecutively. Please pay special attention to citing recent publications incl. unpublished material. **Uploads** - Please make sure that all necessary files have been uploaded (manuscript, cover letter, conflict of interest statements, figures, tables, supplementary material). **Color** - Please note that color figures are free online, but authors assume all costs for color reproduction in print. If you do not wish to pay for color in print, it is advisable that you submit your figures additionally in half-tone for the printed journal to ensure good quality reproduction. **Permissions** All permissions have been obtained for use of copyrighted material from other sources (including the Internet). **Revised papers** Changes must be marked or highlighted in the revised document, and the reviewers comments must be addressed in a point-by-point response letter. Revisions must be returned within 90 days for full papers and reviews and within 30 days for editorials, commentaries and letters.

## **BEFORE YOU BEGIN**

### **Ethics in publishing**

Please see our information pages on [Ethics in publishing](#) and [Ethical guidelines for journal publication](#).

### **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 Institutes of Health guide for the care and use of Laboratory animals (NIH Publications No. 8023, revised 1978) 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.

### **Declaration of interest**

All authors 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. If there are no conflicts of interest then please state this: Conflicts of interest: none. [More information](#).

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

### **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.

### *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.

### *Reporting radiotherapy technique*

Radiotherapy techniques and dose fractionation schedules should be reported in sufficient detail to allow the reader to evaluate if they are appropriate. The description should include the following: tumour dose definition, permitted dose variation, target volume description, permitted dose to critical normal tissues. For the specification of doses and target volumes the authors are strongly encouraged to follow the ICRU recommendations. Dose-planning, simulation, verification and quality assurance procedures should be described. Dose-fractionation details should include total dose, dose per fraction, overall treatment time, interval between fractions in multiple-fractions-per-day schedules. Dose-rate should be stated when relevant. Biological equivalent dose units (e.g. BED or other derived quantities) should not be reported instead of these details of the fractionation schedule.

### *Reporting of treatment outcome*

All clinical endpoints should be clearly and explicitly defined. Endpoints requiring prolonged observation of the patient, e.g. local control, late toxicity or survival, should be estimated using actuarial methods and the starting date and the date of an event or censoring should be defined. The pattern of follow-up should be stated and the specific diagnostic procedures, for example to detect a relapse, should be described. Any report of the outcome of cancer treatment should include data on both treatment effect and treatment-related toxicity. It is strongly recommended that toxicity be recorded and reported using a standard system developed for radiotherapy. Late sequelae should be reported as actuarial estimates, preferably at five years or more of follow-up. Quality-of-life (QOL) measures should not be reported as surrogate endpoints for toxicity. It is recommended that QOL be evaluated using a validated and standardized scale.

### *Statistics*

The description of statistical procedures should be included in the section of 'Material and Methods' under a separate sub-heading. Statistical methods should be clearly identified and described in sufficient detail for a knowledgeable reader to reproduce the analysis if s/he had access to the raw data. The choice of method should be motivated. When relevant, the statistical software used and its version number should be stated. The term 'significant' should be reserved for findings that are statistically significant at the 5% level. It should be stated whether P-values are from one- or two-sided tests. The journal encourages the reporting of 95% confidence intervals rather than simple P-values whenever relevant. A special concern is the statistical power of analyses showing that a parameter is not significantly associated with the outcome, despite previous reports of a significant association. Here, a confidence interval should be estimated for the effect of this parameter as an indication of the statistical strength of the reported non-significance. Multivariate analyses should be reported with a clear indication of the criteria for selection of parameters to be tested in the model, and how these parameters were represented ('scored') in the model. This applies both for parameters significantly associated with the outcome parameter and parameters for which this is not so.

### *Microarray data*

The data should be made available to our readers/reviewers through a MIAME compliant online database or at least a website address.

### *Biomarkers*

Submissions which report biomarkers must comply with the REMARK Guidelines (McShane L, Altman DG, Sauerbrei W, Taube SE, Gion M, Clark GM for the Statistics Subcommittee of the NCI-EORTC Working Group on Cancer diagnostics. Reporting recommendations for tumor MARKer prognostic studies (REMARK), *Eur J Cancer*, 2005, 41, 1690-1696.)

## 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](#) 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.

*Article transfer service*

This journal is part of our Article Transfer Service. This means that if the Editor feels your article is more suitable in one of our other participating journals, then you may be asked to consider transferring the article to one of those. If you agree, your article will be transferred automatically on your behalf with no need to reformat. Please note that your article will be reviewed again by the new journal. [More information](#).

*Submission*

Please submit your article via <http://www.editorialmanager.com/radonc>.

*Referees*

Please submit the names and institutional e-mail addresses of several potential referees. For more details, visit our [Support site](#). Note that the editor retains the sole right to decide whether or not the suggested reviewers are used.

## PREPARATION

### Peer review

This journal operates a single anonymized review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then typically sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final. Editors are not involved in decisions about papers which they have written themselves or have been written by family members or colleagues or which relate to products or services in which the editor has an

interest. Any such submission is subject to all of the journal's usual procedures, with peer review handled independently of the relevant editor and their research groups. [More information on types of peer review.](#)

#### *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**

#### *Introduction*

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

#### *Materials and methods*

Provide sufficient detail to allow the work to be reproduced. Methods already published should be indicated by a reference: only relevant modifications should be described.

#### *Theory/calculation*

A Theory section should extend, not repeat, the background to the article already dealt with in the Introduction and lay the foundation for further work. In contrast, a Calculation section represents a practical development from a theoretical basis.

#### *Results*

Results should be clear and concise. Please avoid using sub-headings in this section.

#### *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.

The title page should also include details of sources of support in the form of grants, equipment, and drugs.

### **Highlights**

Highlights are mandatory for this journal as they help 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*

The second page should start with the abstract, which should be up to a maximum of 250 words and must include the aim of the study, a brief summary of the methods, results and a concluding statement.

### *Graphical abstract*

Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. You can view [Example Graphical Abstracts](#) on our information site.

Authors can make use of Elsevier's [Illustration Services](#) to ensure the best presentation of their images and in accordance with all technical requirements.

### *Keywords*

Include up to 10 key words from the Medical Subject Headings from *Index Medicus*.

### *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*

All contributors who do not meet the criteria for authorship as defined by the ICMJE should be listed in an acknowledgments section at the end of the article before the references. Examples of those who might be acknowledged include a person who provided purely technical help, writing assistance, or a department chair who provided only general support. Authors should disclose whether they had any writing assistance and identify the entity that paid for this assistance.

### *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. Absorbed dose should be given in Gray (Gy).

### *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. If you do not want to reproduce the figures in color in the printed version, we strongly recommend that you submit high-quality half-tone figures in addition to the color versions. 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 can be placed either next to the relevant text in the article, or on separate page(s) at the end. 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 and shading in table cells.

## 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](#).

### *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:

Note shortened form for last page number. e.g., 519, 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;277:92734) (see also Samples of Formatted References).

#### *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:

[1] Van der Geer J, Hanraads JAJ, Lupton RA. The art of writing a scientific article. J Sci Commun 2010;163:51–9. <https://doi.org/10.1016/j.Sc.2010.00372>.

Reference to a journal publication with an article number:

[2] Van der Geer J, Hanraads JAJ, Lupton RA. The art of writing a scientific article. Heliyon. 2018;19:e00205. <https://doi.org/10.1016/j.heliyon.2018.e00205>

Reference to a book:

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

Reference to a chapter in an edited book:

[4] Mettam GR, Adams LB. How to prepare an electronic version of your article. In: Jones BS, Smith RZ, editors. Introduction to the electronic age, New York: E-Publishing Inc; 2009, p. 281–304.

Reference to a website:

[5] Cancer Research UK. Cancer statistics reports for the UK, <http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/>; 2003 [accessed 13 March 2003].

Reference to a dataset:

[dataset] [6] Oguro M, Imahiro S, Saito S, Nakashizuka T. Mortality data for Japanese oak wilt disease and surrounding forest compositions, Mendeley Data, v1; 2015. <https://doi.org/10.17632/xwj98nb39r.1>.

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 will, at no cost, receive a customized [Share Link](#) providing 50 days free access to the final published version of the article on [ScienceDirect](#). The Share Link can be used for sharing the article via any communication channel, including email and social media. 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](#). Corresponding authors who have published their article gold open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.

### **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>