The Asia-Pacific Journal of Sports Medicine, Arthroscopy, Rehabilitation and Technology (AP-SMART) is the official peer-reviewed, open access journal of the Asia-Pacific Knee, Arthroscopy and Sports Medicine Society (APKASS) and the Japanese Orthopaedic Society of Knee, Arthroscopy and Sports Medicine (JOSKAS). It is published quarterly, in January, April, July and October, by Elsevier.

The mission of AP-SMART is to inspire clinicians, practitioners, scientists and engineers to work towards a common goal to improve quality of life in the international community. The Journal publishes original research, reviews, editorials, perspectives, and letters to the Editor.

Multidisciplinary research with collaboration amongst clinicians and scientists from different disciplines will be the trend in the coming decades. AP-SMART provides a platform for the exchange of new clinical and scientific information in the most precise and expeditious way to achieve timely dissemination of information and cross-fertilization of ideas.

The information presented aims to provide a scientific yet practical approach to these five areas: Sports medicine—itself a field with cross-disciplinary dimensions, including sports traumatology, cardiology, endocrinology, accident and emergency medicine, physiology, biochemistry and biomechanics. Whilst each of these fields serves a specific domain, they all contribute importantly to the overall care of athletes. Arthroscopy—recent advances in skills and technology have driven arthroscopy to the forefront of surgical development in minimally invasive interventions for sports traumatology. Rehabilitation—an integral part of the overall management of sports trauma, comprising a comprehensive program of treatment with allied health professionals, performance optimization, preventive measures and outcome evaluation Sports technology—of vital importance to biomechanical and biological research in arthroplasty and sports medicine, allowing new ideas to be tested, developed and applied in the field. We aim to establish strong links between engineers, scientists, biomechanists and administrators involved with sports and sports technology. Reconstructive surgery of the knee, shoulder and ankle—including osteotomy, total joint replacement, minimally invasive and computer-assisted surgery. The Journal's section on upper limb is devoted to the advancement of the science and management of upper limb disorders, with particular relevance to sport-related conditions.

Indexed in: DOAJ, Embase, ESCI (Emerging Sources Citation Index), ScienceDirect, Scopus
ABSTRACTING AND INDEXING

EMBASE
Scopus
Directory of Open Access Journals (DOAJ)

EDITORIAL BOARD

Editors-in-Chief
Kai-ming Chan, Department of Orthopaedics & Traumatology, Prince of Wales Hospital, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong
Masahiro Kurosaka, Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine, Kobe, Japan

Editorial Office
Asia-Pacific Journal of Sports Medicine, Arthroscopy, Rehabilitation and Technology, Asia Pacific Knee, Arthroscopy and Sports Medicine Society, Room 74029, 5/F, Lui Che Woo Clinical Sciences Building, Department of Orthopaedics and Traumatology, Prince of Wales Hospital, Shatin, New Territories, Hong Kong SAR.
Tel: (+852) 2646-4555 ; Fax: (+852) 2646-3020

Deputy Editor
Chih-Hwa Chen, Department of Orthopaedic Surgery, Taipei Medical University, Taipei, Taiwan

Associate Editors
Philippe Beaufils, Department of Orthopaedics & Traumatology, Centre Hospitalier de Versailles, Le Chesnay, France
Shi-Yi Chen, Department of Sports Medicine and Arthroscopic Surgery, Fudan University, Huashan Hospital, Shanghai, China
Mario Lamontagne, Faculty of Health Sciences, School of Human Kinetics, University of Ottawa, Ottawa, Ontario, Canada
Myung-Chul Lee, Department of Nuclear Medicine, Seoul National University College of Medicine, Seoul, The Republic of Korea
Mitsuo Ochi, Department of Orthopaedic Surgery, Hiroshima University, Hiroshima, Japan
Patrick S.H. Yung, Department of Orthopaedics and Traumatology, Faculty of Medicine, The Chinese University of Hong Kong, New Territories, Hong Kong

Section Editors
Sports Medicine
Robert Smigielski, Department of Orthopaedic Surgery, Traumatology and Sports Medicine, Carolina Medical Center, Warszawa, Poland
Carola van Eck, Department of Orthopaedic Surgery, University of Pittsburgh, Pittsburgh, Pennsylvania, USA

Arthroscopy
Ryosuke Kuroda, Department of Orthopaedic Surgery, Kobe University Graduate School of Medicine, Kobe, Japan
Dinshaw Pardiwala, Centre for Sports Medicine, Kokilaben Dhirubhai Ambani Hospital and Medical Research Institute, Mumbai, India

Rehabilitation
Raymond Li, Department of Rehabilitation, The Chinese University of Hong Kong, Sha Tin, N.T., Hong Kong

Sports Technology
Kam-Ming Mok, Department of Orthopaedics & Traumatology, Prince of Wales Hospital, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong
Aleksandar Subic, Department of Sports Technology, RMIT University, Melbourne, Victoria, Australia

Reconstructive Surgery
David Parker, Department of Reconstructive Surgery, Sydney Orthopaedic Research Institute, Chatswood, New South Wales, Australia

Upper Limb
Eiji Itoi, School of Medicine, Department of Orthopaedic Surgery, Tohoku University, Sendai, Japan
INTRODUCTION
The Asia-Pacific Journal of Sports Medicine, Arthroscopy, Rehabilitation and Technology (AP-SMART) is the official peer-reviewed, open access publication of the Asia Pacific Knee, Arthroscopy and Sports Medicine Society (APKASS). This e-only journal is published quarterly by Elsevier in January, April, July and October. The journal aims to provide a multidisciplinary forum to facilitate the rapid transmission of knowledge amongst the sports medicine, arthroscopy, and knee surgery communities. Authors are welcome to submit original articles, review articles, editorials, perspectives, and letters to the editor for consideration. The Editorial Board requires authors to be in compliance with the Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals, which are compiled by the International Committee of Medical Journal Editors (ICMJE), and which are available at http://www.icmje.org. This Guide for Authors is revised periodically by the Editors as needed. Authors should visit the journal's homepage for the latest version of this guide. Authors are requested to ensure that submissions adhere exactly to the stated instructions and format. Any manuscript not prepared according to the instructions in this guide will be returned immediately to the author(s) without review.

Types of article
The categories of articles that are published in the journal are listed and described below. Please select the category that best describes your paper. If your paper does not fall into any of these categories, please contact the Editorial Office.

Original articles
These articles typically include randomized trials, intervention studies, studies of screening and diagnostic tests, laboratory and animal studies, cohort studies, cost-effectiveness analyses, case-control studies, and surveys with high response rates, which represent new and significant contributions to sports medicine. They should include an abstract and be structured as follows: Abstract, Introduction, Materials and Methods, Results, Discussion, Conflicts of Interest Statement, Funding/Support Statement, Acknowledgements (if any), References, Figures and Tables (if any), and Supplementary Material (if any).

The Introduction should provide a brief background to the subject of the paper, explain the importance of the study, and state a precise study question or purpose.

The Materials and Methods section should describe the study design and methods (including the study setting and dates, patients/participants with inclusion and exclusion criteria, patient samples or animal specimens used, the essential features of any interventions, the main outcome measures, the laboratory methods followed, or data sources and how these were selected for the study), and state the statistical procedures employed in the research.

The Results section should comprise the study results presented in a logical sequence, supplemented by tables and/or figures. Take care that the text does not repeat data that are presented in tables and/or figures. Only emphasize and summarize the essential features of the main results.

The Discussion section should be used to emphasize the new and important aspects of the study, placing the results in context with published literature, the implications of the findings, and the conclusions that follow from the study results.

Format guide
- Word limit of abstract: 500
- Up to 6 keywords
- Word limit of main text: 6000 (excluding references)
- References: 40 or less
- Tables/Figures: not more than 8

Review articles
Reviews should have a short pithy title and provide a balanced synthesis of current knowledge on areas such as sports medicine, arthroscopy, rehabilitation, sports technology, reconstructive surgery and upper limb.
Format guide
• Word limit of abstract: 100
• Up to 6 keywords
• Word limit of main text: 6000 (excluding references)
• References: 80 or less
• Tables/Figures: not more than 4

Editorials
These are usually written by invited authors or editorial board members and are comments on recent news or articles published in the journal.

Format guide
• No abstract
• No keywords
• Word limit of main text: 1000 (excluding references)
• References: 5 or less
• Tables/Figures: none
• Author photo and description required

Perspectives
Perspectives should have a concise title and discuss one or several papers recently published in AP-SMART or other journals that present key findings in the specific subject with views from both the basic and clinical perspectives and relevance to patient care.

Format guide
• Word limit of abstract: 50
• Up to 6 keywords
• Word limit of main text: 4000 (excluding references)
• References: 35 or less
• Tables/Figures: not more than 2
• Author photo and description optional

Letters to the Editor
Letters provide readers with an opportunity to raise issues of interest to the sports medicine community or to respond to an article previously published in AP-SMART. They should provide new information or a fresh perspective on the previously published articles. Letters are sent to the author(s) of the previously published article under discussion for their response.

Format guide
• No abstract
• No keywords
• Letter should begin with 'Dear Editor'
• Word limit of main text: 1000 (excluding references)
• References: 10 or less
• Tables/Figures: not more than 2

Technical Notes
Reporting preliminary observations, pilot test, protocol, new interpretations of old data, simple new techniques or devices. These should describe complete and original pieces of research whose length and/or importance do not justify a full-length paper.

Format guide
• Word limit of abstract: 100
• Up to 6 keywords
• Word limit of main text: 2500 (excluding references)
• References: 35 or less
• Tables/Figures: not more than 4

Case Reports:
These are short discussions of a case or case series with unique features not previously described that make an important teaching point or scientific observation. They may describe novel techniques or use of equipment, or new information on diseases of importance. The importance or specificity of the case should be restated when discussing the differential diagnoses. Suggest the prognosis of the disease and possibility of prevention.

Format guide
- Word limit of abstract: 100
- Up to 6 keywords
- Word limit of main text: 2500 (excluding references)
- References: 35 or less
- Tables/Figures: not more than 4

Contact details for submission
Manuscripts (meaning all submission items, including all text, tables, artwork, cover letter, conflicts of interest disclosures, and any other required documents/material) must be submitted online to AP-SMART through the Elsevier EVISE site. This site will guide authors stepwise through the submission process. If assistance is required, please refer to the tutorials for authors and/or customer support that are available on the EVISE site; you may also contact the Editorial Office. Please do not post, fax or e-mail your manuscripts to the Editorial Office.

Editorial Office
Asia-Pacific Journal of Sports Medicine, Arthroscopy, Rehabilitation and Technology
Room 74029, 5/F, Clinical Sciences Building
Department of Orthopaedics and Traumatology
Prince of Wales Hospital, Shatin, New Territories
Hong Kong SAR
Tel: (+852) 2646-4555
Fax: (+852) 2646-3020
E-mail: apsmarteditorial@ort.cuhk.edu.hk
Official website: http://www.ap-smart.com/

Page charges
Authors are required to pay an article processing charge of US$1000 (HK$7750) for all article categories except invited articles. Members of APKASS and the Japanese Orthopaedic Society of Knee, Arthroscopy and Sports Medicine (JOSKAS) can enjoy 20% off and pay US$800 (HK$6200).

BEFORE YOU BEGIN
Ethics in publishing
Please see our information pages on Ethics in publishing and Ethical guidelines for journal publication.

Human and animal rights
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; Uniform Requirements for manuscripts submitted to Biomedical journals. 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.

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. Authors must disclose any interests in two places: 1. A summary declaration of interest statement in the title page file (if double-blind) or the manuscript file
(if single-blind). If there are no interests to declare then please state this: 'Declarations of interest: none'. This summary statement will be ultimately published if the article is accepted. 2. Detailed disclosures as part of a separate Declaration of Interest form, which forms part of the journal’s official records. It is important for potential interests to be declared in both places and that the information matches. 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.

Authorship
All authors should have made substantial contributions to all of the following: (1) the conception and design of the study, or acquisition of data, or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, (3) final approval of the version to be submitted.

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

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

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

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

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' (for more information on this and copyright, see [http://www.elsevier.com/copyright](http://www.elsevier.com/copyright)). 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.

**Author rights**

As an author you (or your employer or institution) have certain rights to reuse your work. For more information on author rights please see [http://www.elsevier.com/copyright](http://www.elsevier.com/copyright).

**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.

**Funding body agreements and policies**

Elsevier has established a number of agreements with funding bodies which allow authors to comply with their funder's open access policies. Some funding bodies will reimburse the author for the Open Access Publication Fee. Details of existing agreements are available online.

**Open access**

This is an open access journal: all articles will be immediately and permanently free for everyone to read and download. To provide open access, this journal has an open access fee (also known as an article publishing charge APC) which needs to be paid by the authors or on their behalf e.g. by their research funder or institution. Permitted third party (re)use is defined by the following Creative Commons user licenses:

*Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)*

For non-commercial purposes, lets others distribute and copy the article, and to include in a collective work (such as an anthology), as long as they credit the author(s) and provided they do not alter or modify the article.

The open access fee (or APC) for this journal is **US$1000 (HK$7750)** for all article categories except invited articles. Members of APKASS and the Japanese Orthopaedic Society of Knee, Arthroscopy and Sports Medicine (JOSKAS) can enjoy 20% off and pay **US$800 (HK$6200)**.

**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 (using British English spelling). 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 WebShop ([http://webshop.elsevier.com/languageediting/](http://webshop.elsevier.com/languageediting/)) or visit our customer support site ([http://support.elsevier.com](http://support.elsevier.com)) for more information.

**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 and copies of the consents or evidence that such consents have been obtained must be provided to
Elsevier on request. 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 at the journal's EVISE site.

**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.

**Additional information**

The following documents must be included in your submission. Items (1) and (2) are mandatory. Items (3), (4), (5) and (6) are required only if they are applicable to your manuscript.

1. **Cover Letter.** This must include the following information:
   - title of the manuscript
   - names (spelled out in full) of all the authors*, and the institutions with which they are affiliated; indicate all affiliations with a superscripted lowercase letter after the author's name and in front of the matching affiliation (* the name of each author should be written with the family name last, e.g., Yuen Lam Cheung)
   - corresponding author's details (name, email, mailing address, telephone and fax numbers)
   - a statement that the material contained in the manuscript has not been previously published and is not being concurrently submitted elsewhere.
   - persons who do not fulfill the requirements to be listed as authors but who nevertheless contributed to the manuscript (such as those who provided writing assistance, for example) should be disclosed
   - list of manuscripts that have been published, submitted, or are in press that are similar to the submission to AP-SMART (and include in your submission copies of those similar manuscripts so that AP-SMART Editors can be assured there is no overlap)
   - the signature of the corresponding author

2. **Authorship & Conflicts of Interest Statement.** Each author's contribution to the manuscript should be listed. Any and all potential and actual conflicts of interest should also be listed and the details of the conflict(s) described. Please use the AP-SMART Authorship & Conflicts of Interest Statement. Please ensure that the name of each author listed in your manuscript appears in either Section I or Section II on page 2 of the form (an author's name cannot appear in both Section I and Section II of the form). Your signature and those of ALL your coauthors must be included.

3. **Ethics Statement.** Articles covering the use of human or animal samples in research, or human or animal experiments must be accompanied by a letter of approval from the relevant review committee or authorities.

4. **Consolidated Standards of Reporting Trials (CONSORT) flowchart for randomized controlled trials submitted for publication.**

5. **Signed Statement of Informed Consent.** Articles where human patients can be identified in descriptions, photographs or pedigrees in the manuscript must be accompanied by a signed statement of informed consent to publish (in print and online) the descriptions, photographs and pedigrees from each patient who can be identified.
(6) Copyright Permission. If you have reproduced or adapted material from other copyrighted sources, the letter(s) of permission from the copyright holder(s) to reproduce or adapt the copyrighted sources must be supplied. Otherwise, such material must be removed from your manuscript.

PREPARATION

Peer review
This journal operates a double blind review process. All contributions are 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. 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: http://www.elsevier.com/guidepublication). 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.

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.

Results
Results should be clear and concise.

Discussion
This should explore the significance of the results of the work, not repeat them. Avoid extensive citations and discussion of published literature.

Conclusion
The main conclusions of the study may be presented in a short Conclusion section, which may stand alone or form a subsection of the 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
The title page should contain the following information (in order, from the top to bottom of the page):

- Article type.
- Article title. Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
- Author names* and affiliations. Where the family name may be ambiguous (e.g., a double name), please indicate this clearly. (*Author names should be spelled out in full, and the name of each author should be written with the family name last, e.g., Naomi Chung-Yan Cheung.) Present the authors' affiliations (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 affiliation. Provide the e-mail address, if available, of each author.
• **Corresponding author.** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. Ensure that phone numbers (with country and area code) are provided in addition to the e-mail address and the complete postal address. Contact details must be 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.

**Abstract**

A concise and factual abstract is required for the following article categories: Original Articles, Review Articles and Perspectives. The word count limits for abstracts should follow the requirements listed in the ‘Types of article’ section at the beginning of this Guide for Authors. Structured abstracts are required for Original Articles (use the subheadings 'Background/objective', 'Methods', 'Results' and 'Conclusion'). Unstructured abstracts (i.e., in one single paragraph with no subheadings) are required for Review Articles and Perspectives.

In general, the abstract should provide the context or background for the research and should state its purpose, basic procedures (selection of study participants, observational and analytical methods), main findings (giving specific effect sizes and their statistical significance, if possible), and principal conclusions. It should emphasize new and important aspects of the study or observations. 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.

No abstract is required for Editorials and Letters to the Editor.

**Keywords**

Immediately after the abstract, provide a maximum of 6 keywords in alphabetical order, using British spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). If possible, keywords should be selected from the Medical Subject Headings (MeSH) list of Index Medicus (http://www.nlm.nih.gov/mesh/meshhome.html). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes. No keywords are required for Editorials and Letters to the Editor.

**Abbreviations**

Where a term/definition will be continually referred to, it must be written in full when it first appears in the text, followed by the subsequent abbreviation in parentheses (even if it was previously defined in the abstract). Thereafter, the abbreviation may be used. An abbreviation should not be first defined in any section heading; if an abbreviation has previously been defined in the text, then the abbreviation may be used in a subsequent section heading. Restrict the number of abbreviations to those that are absolutely necessary and ensure consistency of abbreviations throughout the article. Ensure that an abbreviation so defined does actually appear later in the text (excluding in figures/tables), otherwise, it should be deleted.

**Acknowledgements**

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title 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. Blood pressure values are to be reported in mmHg. Use the metric system for the expression of length, area, mass, and volume. Temperatures are to be given in degrees Celsius.

**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).

**Numbers**

Numbers that begin a sentence or those that are less than 10 should be spelled out using letters. Centuries and decades should be spelled out, e.g., the Eighties or nineteenth century. Laboratory parameters, time, temperature, length, area, mass, and volume should be expressed using digits.

**Names of drugs, devices and other products**

Use the Recommended International Nonproprietary Name (rINN) for medicinal substances, unless the specific trade name of a drug is directly relevant to the discussion. Generic drug names should appear in lowercase letters in the text. If a specific proprietary drug needs to be identified, the brand name may appear only once in the manuscript in parentheses following the generic name the first time the drug is mentioned in the text. When proprietary (brand) names of drugs, implants and instruments, etc. are necessary, complete manufacturing details including the name of the company, city, state and country should be provided the first time the product is mentioned in the text, for example, "...IBM SPSS Statistics 21.0 was used (IBM Corp., Armonk, NY, USA)". Thereafter, the generic term (if appropriate) should be used.

**Gene nomenclature**

Current standard international nomenclature for genes should be adhered to. For human genes, use genetic notation and symbols approved by the HUGO Gene Nomenclature Committee (www.genenames.org). You may also refer to the resources available on PubMed at www.ncbi.nlm.nih.gov/guide/genes-expression. The Human Genome Variation Society has a useful site that provides guidance in naming mutations at www.hgvs.org/mutnomen/index.html. In your manuscript, genes should be typed in italic font and include the accession number.

**Statistical requirements**

Statistical analysis is essential for all research papers. Use correct nomenclature for statistical methods (e.g., two sample t test, not unpaired t test). Descriptive statistics should follow the scales used in data description. Inferential statistics are important for interpreting results and should be described in detail. All p values should be presented to the third decimal place for accuracy. The smallest p value that should be expressed is p < 0.001 since additional zeros do not convey useful information; the largest p value that should be expressed is p > 0.99.

**Conflicts of interest statement**

Since it is difficult to distinguish between an actual conflict of interest and a perceived conflict of interest, AP-SMART requires authors to disclose all and any potential conflicts of interest and let readers judge for themselves. Therefore, please ensure that you provide information about any potential financial and non-financial conflicts of interest in a concise paragraph after the main text. If none, then state, "The author(s) have no conflicts of interest relevant to this article".

**Special note to reviewers**

Reviewers form the cornerstone of the peer-review process, and their evaluations ensure the quality of published research. Therefore, the Editors seek reviewers for AP-SMART who do not have conflicts of interest with the reported research in the manuscripts.
**Funding/support statement**

All grants, financial and material support for the research, work, writing and editorial assistance from internal or external agencies, including commercial companies, should be clearly and completely identified in a funding/support statement. Please refer to the "Formatting of funding sources" section in this Guide for Authors for details on how to list funding sources in a standardized way in order to facilitate compliance with funders' requirements. If there was no support, then state, "This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors, and no material support of any kind was received."

**Artwork**

**General guidelines**

The number of illustrations should be restricted to the minimum necessary to support the textual material. Ensure that each illustration is numbered consecutively in accordance with their appearance in the text and 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 at the end of the caption. Items requiring explanatory footnotes should be denoted using superscripted lowercase letters (a, b, c, etc.), with the footnotes in alphabetical order at the end of the caption. Asterisks (*, **) are used only to indicate the probability level of tests of significance. Abbreviations used must be defined and placed after the footnotes in alphabetical order. If you have included or adapted the figure from another source, whether published or unpublished, you must acknowledge the original source in the caption (and have documentary evidence to show that you have been granted permission to use or adapt the figure should you be asked for such evidence.

**Privacy of research participants**

Unless you have written permission from the patient (or, where applicable, the next of kin), identifying information (e.g., names, initials, hospital numbers, date of birth) of the patient must be removed. Informed consent should be obtained if there is any doubt that anonymity can be maintained. For example, masking the eye region in photographs of patients is inadequate protection of anonymity. If identifying characteristics are de-identified, authors should provide assurance, and editors should so note, that such changes do not distort scientific meaning. For further information, see www.elsevier.com/patientphotographs.

**Image manipulation**

Whilst it is accepted that authors sometimes need to manipulate images for clarity, manipulation for purposes of deception or fraud will be seen as scientific ethical abuse and will be dealt with accordingly. For graphical images, this journal is applying the following policy: no specific feature within an image may be enhanced, obscured, moved, removed, or introduced. Adjustments of brightness, contrast, or colour balance are acceptable if and as long as they do not obscure or eliminate any information present in the original. Nonlinear adjustments (e.g. changes to gamma settings) must be disclosed in the figure legend.

**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.

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): Colour or greyscale 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): Combination of bitmapped line/half-tone (colour or greyscale), 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 colours; Supply files that are too low in resolution; Submit graphics that are disproportionately large for the content.

Colour 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. As AP-SMART is an e-only journal, if, together with your accepted article, you submit usable colour figures, then Elsevier will ensure, at no additional charge, that these figures will appear in colour on the Web (e.g., ScienceDirect and other sites). For further information on the preparation of electronic artwork, please see http://www.elsevier.com/artworkinstructions.

Illustration services
Elsevier's WebShop (http://webshop.elsevier.com/illustrationservices) 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.

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. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Tables should have a concise table heading, be self-explanatory, and numbered consecutively in accordance with their appearance in the text. Items requiring explanatory footnotes should be denoted using superscripted lowercase letters (a, b, c, etc.), with the footnotes arranged below the table body in alphabetical order. Asterisks (*, **) are used only to indicate the probability level of tests of significance. Abbreviations used in the table must be defined and placed after the footnotes in alphabetical order. Please avoid using vertical rules. If you include a block of data or table from another source, whether published or unpublished, you must acknowledge the original source at the end of the table footnotes (and have documentary evidence to show that you have been granted permission to use the material should you be asked for such evidence).

References
Citation in text
Please ensure that every reference cited in the text is also present in the reference list (and vice versa). References should not be cited in the abstract, but if it cannot be avoided, then provide the full details of the reference. Unpublished results and personal communications cannot be included in the references list but may be described in the text. The author(s) must give the full name and highest academic degree of the person, the date of the communication, and indicate whether it was in oral or written (letter, fax, e-mail) form. A signed statement of permission should be included from each person identified as a source of information in a personal communication or as a source for unpublished data. 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 encouraged.

A DOI can be used to cite and link to electronic articles where an article is in-press and full citation details are not yet known, but the article is available online. 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.

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 and Zotero, as well as EndNote. Using the word processor 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.

Reference style
Text: Indicate references by (consecutive) superscript Arabic numerals in the order in which they appear in the text. The numerals are to be used outside periods and commas, and inside colons and semicolons. For further details and examples you are referred to the AMA Manual of Style, A Guide for Authors and Editors, Tenth Edition, ISBN 0-978-0-19-517633-9 (see http://www.amanualofstyle.com).

List: Number the references in the list in the order in which they appear in the text. References should include, in order, author surnames and initials, article title, abbreviated journal name, year, volume and inclusive page numbers. The last names and initials of all the authors up to 6 should be included, but when authors number 7 or more, list the first 3 authors only followed by 'et al'.

Examples of the most common reference types are provided below. Please pay particular attention to the formatting, word capitalization, spacing and style.

Reference to a standard journal article:

Reference to a journal supplement:

Reference to a journal article not in English but with English abstract:

Reference to a book with edition:

Reference to a book with editors:
Reference to a book chapter in a book with editor and edition:

Reference to a book series with editors:

Reference to a bulletin:

Reference to electronic publications:

Reference to items presented at a meeting but not yet published:

Reference to an item presented at a meeting and published:

Reference to material accepted for publication but not yet published:

Reference to theses and dissertations:

Reference to a website:

**Journal abbreviations source**
Journal names should be abbreviated according to the List of Title Word Abbreviations: http://www.issn.org/services/online-services/access-to-the-itwa/

**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.

**AudioSlides**
The journal encourages authors to create an AudioSlides presentation with their published article. AudioSlides are brief, webinar-style presentations that are shown next to the online article on ScienceDirect. This gives authors the opportunity to summarize their research in their own words and to help readers understand what the paper is about. More information and examples are available. Authors of this journal will automatically receive an invitation e-mail to create an AudioSlides presentation after acceptance of their paper.

**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.
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.

Submission checklist
The following list will be useful during the final checking of an article prior to sending it to the journal for review. Please consult this Guide for Authors for further details of any item.

Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:
• Email address
• Full postal address
• Phone numbers

All necessary files have been uploaded, and contain:
• Keywords
• All figure captions
• All tables (including title, description, footnotes)

Further considerations:
• Manuscript has been 'spell-checked' and 'grammar-checked'
• References are in the correct format for this journal
• 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 Web)

For any further information please visit our Support Centre.

Additional information
The editorial and peer review process
As a general rule, the receipt of a manuscript will be acknowledged within 2 weeks of submission, and authors will be provided with a manuscript reference number for future correspondence. If such an acknowledgement is not received in a reasonable period of time, the author should contact the Editorial Office.

Submissions are reviewed by the Editorial Office to ensure that it contains all parts. Submissions will be rejected if the author has not supplied all the material and documents as outlined in this Guide for Authors.

Manuscripts are then forwarded to the Editor-in-Chief, who makes an initial assessment of it. If the manuscript does not appear to be of sufficient merit or is not appropriate for the journal, then the manuscript will be rejected without review.

Manuscripts that appear meritorious and appropriate for the journal are reviewed by at least two Editorial Board members or expert consultants assigned by the Editor-in-Chief. AP-SMART follows a double-blind peer review process. Authors may submit a list in their cover letter of reviewers who they wish to review or not to review their manuscript. However, the actual peer reviewers invited will remain anonymous and may or may not be the reviewers suggested by the authors as the selection of reviewers is at the sole discretion of AP-SMART Editors. The editors will not disclose any information about a manuscript or its review to anyone except the manuscript’s corresponding author. The Editor-in-Chief reserves the right to make the final decision regarding the acceptance or rejection of manuscripts.
The corresponding author will usually be notified within 10 weeks of whether the submitted article is accepted for publication, rejected, or subject to revision before acceptance (however, do note that delays are sometimes unavoidable). If revisions are required, authors are asked to return a revised manuscript to the Editorial Office via the journal's EVISE site within 30 days. Please notify the Editorial Office in advance if additional time is needed or if you choose not to submit a revised manuscript.

**Preparation for publication**

Once a manuscript has been accepted for publication, authors should submit the final version of their manuscript (and final versions of all tables/figures as applicable) via the journal's EVISE site. Accepted manuscripts are copyedited according to the journal's style and corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. Authors are responsible for all statements made in their work, including changes made by the copyeditor.

**AFTER ACCEPTANCE**

**Online proof correction**

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 be notified and receive a link to the published version of the open access article on ScienceDirect. This link is in the form of an article DOI link which can be shared via email and social networks. 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 Webshop. Authors requiring printed copies of multiple articles may use Elsevier Webshop's 'Create Your Own Book' service to collate multiple articles within a single cover.

**Forms**
- Authorship and Conflicts of Interest Statement

**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