



# THE SPINE JOURNAL

A Multidisciplinary Journal of Spinal Disorders

## AUTHOR INFORMATION PACK

### TABLE OF CONTENTS

●	<b>Description</b>	<b>p.1</b>
●	<b>Impact Factor</b>	<b>p.1</b>
●	<b>Editorial Board</b>	<b>p.1</b>
●	<b>Guide for Authors</b>	<b>p.4</b>



ISSN: 1529-9430

### DESCRIPTION

*The Spine Journal*, the official journal of the [North American Spine Society](#), is an international and multidisciplinary journal that publishes original, peer-reviewed articles on research and treatment related to the **spine** and **spine care**, including basic science and clinical investigations. It is a condition of publication that manuscripts submitted to *The Spine Journal* have not been published, and will not be simultaneously submitted or published elsewhere. *The Spine Journal* also publishes major reviews of specific topics by acknowledged authorities, technical notes, teaching editorials, and other special features, Letters to the Editor-in-Chief are encouraged.

*The Spine Journal* is ranked 4th of 63 journals in Orthopaedics category on the 2012 Journal Citation Reports®, published by Thomson Reuters, and has an Impact Factor of 3.220.

#### Benefits to authors

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

Please see our [Guide for Authors](#) for information on article submission. If you require any further information or help, please visit our [Support Center](#)

### IMPACT FACTOR

2017: 3.119 © Clarivate Analytics Journal Citation Reports 2018

### EDITORIAL BOARD

#### Editor-in-Chief:

**Christopher M. Bono, MD**, Boston, MA, USA

#### Deputy Editors:

**Michael D. Daubs, MD**, Las Vegas, NV

**Michael Heggeness, MD, PhD**, Wichita, KS, USA

**Daniel J. Hoh, MD**, Gainesville, FL.

**Daniel G. Kang, MD.**, Tacoma, WA

**D.J. Kennedy, MD**, Nashville, TN

**Brook Ian Martin, PhD, MPH**, Salt Lake City, UT

**Thomas Mroz, MD**, Cleveland, OH

**Jeffrey A. Rihn, MD**, Media, PA  
**Daniel Sciubba, MD**, Baltimore, MD  
**Francis Shen, MD**, Charlottesville, VA, USA  
**Michael P. Steinmetz, MD**, Cleveland, OH

***Managing Editor:***

**T. Bowen**

***Associate Board Members:***

**Owoicho Adogwa, MD\***, Chicago, IL  
**Ahmad F.A. Allam, MD, MRCS**, Minia, Egypt  
**Hoard S. An, MD**, Chicago, IL  
**Paul M. Arnold, MD**, Champaign, IL  
**Siddharth A. Badve, MD**, Hartsville, SC  
**Gordon R. Bell, MD**, Cleveland, OH  
**Edward C. Benzel, MD**, Cleveland, OH  
**Bikash Bose, MD**, Newark, NJ  
**Charles L. Branch, Jr, MD**, Winston-Salem, NC, USA  
**Jackson R. Bransford, MD**, Seattle, WA  
**Avery L. Buchholz, MD**, Charlottesville, VA  
**Allen. Carl, MD**, Albany, NY  
**Riccardo Cecchinato, MD\***, Milan, Italy  
**Jens Chapman, MD**, Seattle, WA  
**Kshitij Chaudhary, MD**, Mumbai, India  
**Yen-Jen Chen, MD\***, Taichung, Taiwan  
**John H. Chi, MD**, Boston, MA  
**Charles H.. Cho, MD**, Boston, MA  
**Ashley Antony Cole, BMedSci, FRCS (Tr and Orthop), DM**, Sheffield, United Kingdom  
**Francesco Costa, MD**, Rozzano, Italy  
**Simon Dagenais, DC, PhD\***, Winchester, MA  
**Robert M. Dimick, MD**, Milton, FL  
**Edward Dohring, MD**, Scottsdale, AZ  
**Angus S/ Don, MD**, Auckland, New Zealand  
**Nancy E. Epstein, MD**, New Hyde Park, NY  
**Aaron J. Fields, MD**, San Francisco, CA  
**John G. Finkenberg, MD**, San Diego, CA  
**Brett Freedman, MD**, Rochester, MN  
**Michael D. Freeman, MD**, Salem, OR  
**Robert Gatchel, PhD**, Arlington, TX  
**Rahul Gawri, MD**, Philadelphia, PA  
**Peter C. Gerszten, MD**, Pittsburgh, PA  
**Sandeep Gidvani, MD**, Fremont, CA  
**Paul A. Glazer, MD**, Boston, MA  
**Vijay K. Goel, MD**, Toledo, OH  
**Ziya L. Gokaslan, MD**, Baltimore, MD  
**Andrew J. Haig, MD**, Ann Arbor, MI  
**Scott Haldeman, DC, MD, PhD**, Santa Ana, CA  
**Robert F. Heary, MD**, Newark, NJ  
**Alan S. Hilibrand, MD**, Philadelphia, PA  
**Sheila Hogg-Johnson, PhD**, Toronto, ON, Canada  
**Louis G. Jenis, MD**, Boston, MA  
**Mark Kabins, MD**, Las Vegas, NV  
**Michael P. Kelly, MD**, St. Louis, MO  
**Partap S. Khalsa, PhD, DC**, Boston, MA  
**Seok Woo Kim, MD**, Seoul, S. Korea  
**Panagiotis Korovessis, MD\***  
**Frank P. Lagattuta, MD**, Santa Maria, CA  
**Lawrence Lenke, MD**, St. Louis Park, MO  
**Tae-Hong Lim, PhD**, Iowa City, IA  
**Ning Liu, MD**, Redwood City, CA  
**Jiayong Liu, MD**, Toledo, OH  
**Jeffrey C. Lotz, MD**, San Francisco, MD  
**William S. Marras, MD**, Columbus, OH  
**Tobias A. Mattei, MD**, Bangor, ME  
**Mike McCarthy**, Cardiff, United Kingdom  
**Zachary McCormick, MD**, Salt Lake City, UT  
**Charles T. Mehlman, DO, MPH**, Cincinnati, OH

**Charles Milgrom, MD**, Jerusalem, Israel  
**Massiomo Miscusi, PhD, MD**, Rome, Italy  
**Issac L. Moss, MD**, Farmington, CT  
**Donald R. Murphy, DC**, Rochester, NY  
**Ahmad N. Nassr, MD**, Rochester, MN  
**Marc J. Nieuwenhuijse, MD**, Lieden, Netherlands  
**Pierce D. Nunley, MD**, Shreveport, LA  
**David R. O'Brien, MD**, Winston-Salem, NC  
**Donna Ohnmeiss, PhD\***, Plano, TX  
**R. Douglas Orr, MD**, Cleveland, OH  
**Claude Pierre-Jerome, MD, PhD**, Lorenskog, Norway  
**John M. Popovich Jr, PhD, DPT, ATC**, Lansing, MI  
**Jeffrey Alexander Quon, DC, MHSc, PhD, FCCSC**, Vancouver, BC, Canada  
**Raj D. Rao, MD**, Milwaukee, WI  
**Gilad Regev, MD**, Tel Aviv, Israel  
**Tom Reinsel, MD\***, Huntington, WV  
**Mitchell Reiter, MD\***, Summit, NJ  
**Charles Reitman, MD\***, Charleston, SC  
**Darren Roffey, PhD\***, Ottawa, ON, Canada  
**Jeffrey Sambough, MD, MBA**, Cincinnati, OH  
**Andrew Schoenfeld, MD\***, Boston, MA  
**Hideki Shigematsu, MD, PhD**, Kashiwara, Japan  
**Mohd M.A. Siddiqui, MBBS, MRCS, MMed, FRCS**, Singapore, China  
**Kern Singh, MD**, Chicago, IL  
**Volker K.H.. Sonntag, MD**, Phoenix, AZ  
**Jeffrey M. Spivak, MD**, New York, NY  
**Bryne Stainsby, DC**, Toronto, ON, Canada  
**Christopher Standaert, MD**, Seattle, WA  
**Bjorn Stromqvist, MD**, Lund, Sweden  
**Pradeep Suri, MD**, Seattle, WA  
**Akinobu Suzuki, MD**, Osaka, Japan  
**Karin R. Swartz, MD**, Milwaukee, WI  
**Rand S. Swenson, MD, PhD, DC**, Hanover, NH  
**Daryl R. Sybert, DO**, New Albany, NY  
**James B. Talmage, MD**, Cookeville, TN  
**Simon Tang, PhD**, St. Louis, MO  
**Khoi D. Than, MD**, Portland, OR  
**Frank J. Tomecek, MD**, Tulsa, OK  
**Julio Urratia, MD**, Santiago, Chile  
**Michael J. Vives, MD**, Newark, NJ  
**Eugene K. Wai, MD, MSc, FRCS(C)**, Ottawa, ON, Canada  
**Jeffrey C. Wang, MD.**, Santa Monica, CA  
**William C. Watters III, MD, MS**, Houston, TX  
**F. Todd Wetzel, MD**, Cooperstown, NY  
**David A. Wong, MD, MSc, FRCS(C)**, Denver, CO  
**Emily Jane Woo, PhD**, Silver Spring, MD  
**Qing Yue, PhD, MD**, Bloomsburg, PA  
**Elizabeth Yu, MD**, Columbus, OH

***Founding Editor:***

**T. G. Mayer, MD**, Dallas, TX, USA

## GUIDE FOR AUTHORS

---

### Introduction

*The Spine Journal*, the official journal of the North American Spine Society, is an international and multidisciplinary journal that publishes original, peer-reviewed articles on research and treatment related to the spine. *The Spine Journal (TSJ)* seeks to publish high-quality, ethical, evidence-based spine care, including basic science and clinical investigations. *TSJ* also publishes major reviews of specific topics as well as editorials. *TSJ* is not currently seeking case reports, technical reports, or small case series, with rare exceptions.

All submissions are accepted with the understanding that they have not been, and will not be, published elsewhere substantially in any format. Also, there should be no ethical concerns with the content or data collection. *TSJ* reserves the right to request any research materials on which the paper is based.

### Submission Fees

Beginning in January 2017, the Journal charges a submission fee for all unsolicited manuscripts. Submission Fees: \$50 for members of the North American Spine Society and \$125 for non-members

After online submission and check-in of your submission by the Journal staff, authors will be sent an email referring them to a payment page at the Elsevier Webshop. Manuscripts will be reviewed only after we have received confirmation of your payment.

### Article Types

#### Clinical Studies (See sub-categories below)

Clinical studies are previously unpublished manuscripts that include clinical investigations, clinical observations and clinically relevant trials. Abstracts for Clinical Studies are required to have all eight (8) structured subheadings: background context, purpose, design, patient sample, outcome measures, methods, results and conclusions.

*TSJ* has adopted guidelines designed to improve the reporting of clinical studies. By following these guidelines, many of which include checklists and flow charts, authors ensure that readers can assess the validity of their findings. Submissions to *TSJ* must adhere to the guideline that applies to their study, as specified below.

Clinical studies should be between 1500 and 4500 words (approx. 6 to 12 double-spaced pages).

#### **1. Controlled Trialsa) Randomized controlled trials (RCTs): a) Randomized controlled trials (RCTs): Complete CONSORT checklist and include flow diagram in article.**

Schulz KF, Altman DG, Moher D, for the CONSORT Group. CONSORT 2010 Statement: updated guidelines for reporting parallel group randomised trials. *Ann Int Med* 2010;152 (11):726-32. PMID: 20335313.

Moher D, Hopewell S, Schulz KF, Montori V, Gtzsche PC, Devereaux PJ, Elbourne D, Egger M, Altman DG, for the CONSORT Group. CONSORT 2010 Explanation and Elaboration: updated guidelines for reporting parallel group randomised trial. *BMJ* 2010;340:c869. PMID: 20332511.

Ioannidis JPA, Evans SJW, Gotzsche PC, O'Neill RT, Altman DG, Schulz K, Moher D, for the CONSORT Group\*. Better Reporting of Harms in Randomized Trials: An Extension of the CONSORT Statement. *Ann Intern Med* 2004; 141(10):781-788. PMID: 15545678.

Website: <http://www.consort-statement.org/>

CONSORT extensions may apply to specific study types:

#### *i. Non-inferiority and Equivalence RCTs:*

Piaggio G, Elbourne DR, Altman DG, Pocock SJ, Evans SJW, for the CONSORT Group. Reporting of Noninferiority and Equivalence Randomized Trials: An Extension of the CONSORT Statement. *JAMA: The Journal of the American Medical Association* 2006; 295(10):1152-1160. PMID: 16522836.

#### *ii. Cluster RCTs:*

Campbell MK, Elbourne DR, Altman DG. CONSORT statement: extension to cluster randomised trials. *BMJ* 2004; 328(7441):702-708. PMID: 15031246.

*iii. Non-pharmacological treatment interventions:*

Boutron I, Moher D, Altman DG, Schulz K, Ravaud P, for the CONSORT group. Methods and Processes of the CONSORT Group: Example of an Extension for Trials Assessing Nonpharmacologic Treatments. *Ann Intern Med*. 2008;W60-W67. PMID: 18283201; Boutron I, Moher D, Altman DG, Schulz KF, Ravaud P. Extending the CONSORT statement to randomized trials of nonpharmacologic treatment: explanation and elaboration. *Ann Intern Med* 2008 Feb 19;148(4):295-309. PMID: 18283207.

*iv. Health-Related Quality of Life Studies:*

Calvert M, Blazeby J, Recicki D, Moher D, Brundage M. Reporting quality of life in clinical trials: a CONSORT extension. *The Lancet* 2011;378(9804):1684-1685.

*v. RCTs with Patient-Reported Outcomes:*

Calvert M, Blazeby J, Altman DG, Revicki DA, Moher D, Brundage MD, for the CONSORT PRO Group. Reporting of Patient-Reported Outcomes in Randomized Trials: The CONSORT PRO Extension. *JAMA* 2013;309(8):814-822. <https://doi.org/10.1001/jama2013.879>.

**b) Non-randomized controlled trials:** Complete TREND checklist and include flow diagram in article.

Des Jarlais DC, Lyles C, Crepaz N, and the TREND Group. Improving the reporting quality of nonrandomized evaluations of behavioral and public health interventions: The TREND statement. *Am J Public Health*. 2004;94:361-366.

Website: <http://www.cdc.gov/trendstatement/>

A controlled trial is defined by the ICMJE as any research project that prospectively assigns human subjects to intervention and comparison groups to study the cause-and-effect relationship between a medical intervention and a health outcome. A controlled trial, whether randomized or not, must be registered in a public registry meeting ICMJE requirements prior to submission to *TSJ*.

## 2. Observational Studies

*Cohort, case-control, and cross-sectional studies:* **Complete the STROBE checklist and include flow diagram (if applicable) in article.**

von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies. *Ann Intern Med* 2007; 147(8):573-577. PMID: 17938396.

Website: <http://www.strobe-statement.org/>

## 3. Diagnostic Test Studies

**Complete STARD checklist and include flow diagram in article.**

Bossuyt PM, Reitsma JB, Bruns DE, Gatsonis CA, Glasziou PP, Irwig LM, Lijmer JG, Moher D, Rennie D, de Vet HC. Towards complete and accurate reporting of studies of diagnostic accuracy: the STARD initiative. Standards for Reporting of Diagnostic Accuracy. *BMJ* 2003; 326(7379):41-4. PMID: 12511463.

Bossuyt PM, Reitsma JB, Bruns DE, Gatsonis CA, Glasziou PP, Irwig LM, et al. The STARD statement for reporting studies of diagnostic accuracy: explanation and elaboration. *Ann Intern Med* 2003; 138(1):W1-12. PMID: 12513067.

Website: <http://www.stard-statement.org/>

## 4. Reliability and agreement Studies

Authors should read the following report and include the recommended elements in the article.

Kottner J, Audig L, Brorson S, Donner A, Gajewski BJ, Hrbjartsson A, Robersts C, Shoukri M, Streiner DL. Guidelines for reporting reliability and agreement studies (GRRAS) were proposed. *J of Clin Epid* 2011; 64(1):96-106 PMID: 21130355.

## 5. Cost-Effectiveness Studies

Authors should read the following report and include the recommended elements in the article.

Ramsey S, Willke R, Briggs A, Brown R, Buxton M, Chawla A, Cook J, Glick H, Liljas B, Petitti D, Reed S. Good research practices for cost-effectiveness analysis alongside clinical trials: the ISPOR RCT-CEA Task Force report. *Value Health*. 2005 Sep-Oct;8(5):521-33. Review. PubMed PMID: 16176491.

## 6. Systematic reviews and meta-analyses

### a) *Reviews of RCTs*: **Complete PRISMA checklist and include flow diagram in article.**

Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *BMJ* 2009; 339:b2535. PMID: 19622551.

Liberati A, Altman DG, Tetzlaff J, Mulrow C, Gtzsche PC, et al. The PRISMA Statement for Reporting Systematic Reviews and Meta-Analyses of Studies That Evaluate Health Care Interventions: Explanation and Elaboration. *BMJ* 2009; 339:b2700. PMID: 19622552.

Website: <http://prisma-statement.org/>

### b) *Reviews of observational studies*:

Stroup DF, Berlin JA, Morton SC, Olkin I, Williamson GD, Rennie D, Moher D, Becker BJ, Sipe TA, Thacker SB. Meta-analysis of observational studies in epidemiology: a proposal for reporting. Meta-analysis Of Observational Studies in Epidemiology (MOOSE) group. *JAMA* 2000; 283(15):2008-2012. PMID: 10789670.

## 7. Uncontrolled Case Series

Authors should read the following report and include the recommended elements in the article.

Kempen JH. Appropriate use and reporting of uncontrolled case series in the medical literature. *Am J Ophthalmol*. 2011;151(1):7-10.e1. PMID: 21163373.

Many clinical studies published in TSJ will include a text box, compiled by the Journal editors, that provides an evidence-based critique of the study. The one-column breakout box is meant to facilitate inquiry and spark discussion on the most important topics of a given paper.

## Basic Science Papers

Basic science papers are previously unpublished manuscripts that include laboratory work in areas ranging from basic lab work, cadaver studies, cellular mechanisms, molecular biology, growth factor work, preclinical animal studies and novel imaging (as related to the basic sciences rather than clinical imaging). A structured abstract is required. Abstracts for Basic Science Studies are required to have the following structured subheadings: background context, purpose, study design, methods, results, conclusions, and *clinical significance*. *Important*: Each basic science paper should have a paragraph describing the potential clinical relevance of their research in the "Discussion" section.

## Research Letters

This is a new article type. Research Letters are an abbreviated report of original research that should be no more than 700 words. No abstract is necessary, and no abstract will appear with its citation, if published. The references list should have 10 citations or less. Only 1 or 2 figures/tables should be included. A maximum of six authors will be allowed for Research Letters. Because of its brevity, only a short introduction will be necessary. Thus, the background and intent of the research should be relatively self-evident and not require a lengthy introduction.

## **Narrative Review Articles**

Usually invited, the manuscript should cover an established but controversial area of multidisciplinary spine care with the goal of updating and consolidating knowledge and the conceptual framework. It should include a minimum of 50 references with 20-30 pages of double-spaced text, 3-5 explanatory tables, and appropriate artwork. An unstructured abstract is required.

## **Letters to the Editor (correspondence)**

These are strongly encouraged to foster open dialogue between our readers, authors and editors. These should be addressed "To the Editor" and submitted with the understanding that the material may be shortened or otherwise edited. Letters should be kept to 500 words. Letters that address material previously published in The Spine Journal may be followed by responses from the author of the work being discussed and/or the Editor. All reasonable efforts will be made to ensure the original manuscript authors are given an opportunity to reply to any comments expressed about their work. Replies to letters to the editor must also be less than 500 words.

## **Commentaries**

These are solicited pieces, the material for which would reference current topics in spine care, or a concurrently published article. Unlike Letters to the Editor, these pieces will typically be about 1500 words (excluding tables, figures and references) and provide more in-depth discussion on the research in the accompanied manuscript or a topic suggested by the Executive Editorial Board. These manuscripts are composed as stand-alone articles, with appropriate tables, figures and references (limited to 30).

## **Perspectives**

These are solicited and unsolicited editorial pieces about a topic in spine care, extending beyond a letter to the editor - which usually discuss a previously published TSJ article - but that don't quite meet the criteria for a Review Article. Unlike an Editorial, an article type that is generally reserved for members of the TSJ Editorial Board, Perspectives give a voice to anyone who wishes to express an opinion on a wide range of discussion topics.

## **Online Manuscript Submission & Tracking**

TSJ exclusively uses an electronic submission and tracking system, the Elsevier Electronic System, or EES. Authors may submit their articles by simply registering, logging in and uploading. After registering and submitting, authors may also track their manuscript's progress through the editorial and review process.

Detailed instructions on the use of the online submission system are available on the **EES site**, <https://www.elsevier.com/journals/the-spine-journal/1529-9430/guide-for-authors> under "Guide for Authors." Please read the helpful "Hints" for information on how to register, and review the "Tutorial for Authors" for an overview of the submission process. If you need further help, please visit our [Support Center](#).

On the EES front page, click the "Register" link to input your demographics and set up your account. After your registration is complete, a notice will be sent to your e-mail address indicating your username and password. Use this information to log in to the system as an author by choosing the "Login" link on the toolbar and select "Submit New Manuscript." Follow the prompts to complete your submission according to TSJ guidelines listed in these instructions. You are welcome to contact the TSJ Editorial Office if you have any problems or questions. To update any personal information including your physical or e-mail address click on the "Change Details" icon at the top of your screen.

Abstract, Manuscript, Figures and Tables, Disclosure information and Affirmation of Authorship form, must be prepared as SEPARATE files; the system requires that each of these files be uploaded separately and blocks incomplete manuscripts from being submitted to the office. Authors should use only those formats that are acceptable to the publisher, Elsevier, in order to ensure proper publication in the print issues. Please refer to the following individual sections for specific file requirements for text, tables, and figures. Each uploaded file must have a corresponding file extension (such as .doc, .tif). Adherence to the guidelines is essential, and non-compliant manuscripts will be returned to authors for correction before peer-review.



## Submission Checklist

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

### Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:

- E-mail address
- Full postal address

All necessary files have been uploaded:

*Manuscript:*

- Ensure the text is fully blinded
- Include keywords
- Include the abstract
- Line numbers (each page starts with 1)
- Page numbers (lower right corner)
- 1.5 or double line spacing
- All figures (include relevant captions)
- All tables (including titles, description, footnotes)
- Ensure all figure and table citations in the text match the files provided
- Indicate clearly if color should be used for any figures in print

*Graphical Abstracts / Highlights files* (where applicable)

*Supplemental files* (where applicable)

Further considerations

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

For further information, visit our [Support Center](#).

### CHECKLIST FOR TSJ SUBMISSION

Below is a checklist of items required by TSJ for evaluation of a submission. These items should be included in each submission. Please be sure that you have thoroughly read the instructions for preparation of your manuscript before approving it for submission.

- [ICMJE-TSJ Disclosure Form](#) ((each author must complete this form, and every page of every form must be uploaded by the submitting author). It is important that authors use the TSJ/NASS-specific Disclosure Form; not the generic ICMJE form.
- [Affirmation of Authorship Form](#) (completed and uploaded)
- [FDA Device/Drug Approval Status Form](#) (completed and uploaded)
- [Level of Evidence Form for Clinical Studies](#) (completed and uploaded)
- Checklists and flow diagrams as specified above in ARTICLE TYPES.
- Permission for reprinted figures, tables, materials or photographs
- One copy of the manuscript, blinded, and formatted according to the instructions.
- Title page including:

Title;

Each author's complete name and academic or scientific affiliation.

Corresponding Author's complete and correct address, phone number, and e-mail address.

- Structured abstract
- Line numbers (each page starts with 1)
- Page numbers (lower right corner).
- 1.5 or double line spacing
- References (properly formatted)
- Figure Captions (in the manuscript file, following the references section).
- Tables (optional).
- Figures (optional) properly formatted and labeled according to the instructions



- Appendices (optional) uploaded as "Supplemental File (Text and Figures in .jpg, .tif, .eps, or MS Word format ONLY)."
- Additional figures and tables for online publication only (optional) uploaded as "Supplemental File (Text and Figures in .jpg, .tif, .eps, or MS Word format ONLY)."
- Video for online presentation (optional) uploaded as "Supplemental File (VIDEO ONLY)"

## PERMISSIONS

The author is responsible for obtaining, in writing, the permission of the publisher and/or copyright holder to reprint in *TSJ* any previously published material, such as figures, tables, and images. The author is responsible for any associated reprint fee. Quotations must be accurate and full credit given to their source. Reference to personal communication must be included in the text using the following form (name, degrees of the person(s) with whom the author has communicated, written or oral communication, month and year). Reference to unpublished data should follow a similar format (name, degree, unpublished data, month, year). The author **MUST** obtain written permission from the source to use such information and copies **MUST** be submitted with the manuscript.

All requests to reproduce or make available anything from *TSJ* - in whole or in part, in electronic or in any other format, including translation - must be sent to:

**Global Rights Department, Elsevier Ltd** PO Box 800 Oxford OX5 1DX, UK Tel: (+44) 1865 843830 (UK) or (+1) 215 239 3804 (US) Fax: (+44) 1865 853333

Requests may also be completed online via the Elsevier site (<https://www.elsevier.com/authors/obtaining-permission-to-re-use-elsevier-material>).

### **Ethics in publishing**

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

### **Use of Animals in Biomed Research**

*The Spine Journal* condemns unethical treatment of subjects in laboratory research, human and animal. *TSJ* expects that authors submitting their work do so with the utmost care to ensure that all research was approved by their Institutional Review Board or Animal Research Committee.

### **Financial and FDA Disclosure**

All analysis of data, manuscript preparation and presentation will be free of commercial input, influence or bias. It will be the work solely of authors and colleagues. Authors will be forthright about disclosing all relevant data. All relevant findings regarding benefits, risks, complications and related issues will be disclosed in all prepared materials.

The North American Spine Society has adopted a uniform disclosure policy for all **office holders, committee members, authors and presenters**. As the official journal of NASS, *The Spine Journal* adheres to this uniform policy. NASS recognizes that professional relationships with industry are essential for development of new spinal technologies and medical advancement. These relationships do not in any way reflect negatively on the character of an individual. The intent of this policy is to encourage disclosure of situations in which there is even the potential for bias without any implications regarding actual bias.

As a sponsor accredited with commendation by the ACCME, the North American Spine Society must ensure balance, independence, objectivity and scientific rigor in all its individually or jointly sponsored educational activities. All those participating in a sponsored activity are expected to disclose to the activity audience all financial interests or other relationships with industry that they have. The intent of this disclosure is to ensure that all conflicts of interest, if any, have been identified and have been resolved prior to the speaker's presentation. By doing so, NASS has determined that the speaker's or author's interests or relationships have not influenced the presentation with regard to exposition or conclusion; nor does NASS view the existence of these interests or commitments as necessarily implying bias or decreasing the value of the presentation.

All grants and/or research funding must state full name of donor and include grant number(s). FDA approval status is required for any devices and/or drugs identified as an important component within the manuscript.

Elsevier and the *TSJ* Editors believe it is useful to outline our expectations of authors and procedures that the journal will employ in the event of questions concerning author conduct. Procedures and guidelines with respect to such queries and investigations are outlined in the Elsevier position on [Ethical Guidelines for Journal Publication](#) and should be reviewed by authors.

### **Submission declaration and verification**

Submission of an article implies that the work described has not been published previously (except in the form of an abstract, a published lecture or academic thesis, see '[Multiple, redundant or concurrent publication](#)' for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. To verify originality, your article may be checked by the originality detection service [Crossref Similarity Check](#).

#### *Preprints*

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

### **Use of inclusive language**

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

### **Authorship**

Every person listed as an author should qualify for authorship. Each author must affirm that they participated and contributed sufficiently to the work to take public responsibility for the appropriateness of the experimental design and method, and the collection, analysis and interpretation of the data and that this final version has been reviewed and approved for submission and/or publication.

Authors listed on the required *TSJ* Affirmation of Authorship form should be in the order in which they are meant to appear. All authors must agree on this order. Once a manuscript has been submitted, the order of authorship (including adding or removing authors) should remain unchanged. Exceptions must be approved by the *TSJ* editorial office. The corresponding author is responsible for assuring all the involved authors agree with the change.

In multicenter trials, the writing group authors should be listed along with the group name (e.g., Jameson RK, Smith MS, on behalf of the \*group name\*). Other group members should be listed in an appendix before the references.

### **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.

## 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.

## Financial Disclosure

In accordance with the North American Spine Society's (NASS) [Universal Disclosure Policy](#) and manuscript submission guidelines recommended by the [International Committee of Medical Journal Editors](#) (ICMJE), you will be asked to provide a comprehensive and universal disclosure form during the online submission process. EACH author must provide a universal disclosure, including dollar amounts in ranges for each financial relationship, using the new ICMJE form. The corresponding author is responsible for sending a blank form (or link to form) to each author, and then collecting all completed forms to upload to the list of submission files.

Financial associations relevant to the specific article being submitted should be included in the "Methods" section of the article abstract, and presented in the "Discussion" section of the article. Both should include the magnitude of the financial association (ie, specific dollar amounts within ranges).

Authors of controlled and randomized trials are expected to comply with Consolidated Standards of Reporting Trials (CONSORT) guidelines. Reports of noncontrolled trials and other clinical studies submitted to *TSJ* must follow the CONSORT guidelines for reporting harms (adverse events and complications).

*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 gold open access publication fee. Details of [existing agreements](#) are available online.

After acceptance, open access papers will be published under a noncommercial license. For authors requiring a commercial CC BY license, you can apply after your manuscript is accepted for publication.

## Open access

This journal offers authors a choice in publishing their research:

### Subscription

- Articles are made available to subscribers as well as developing countries and patient groups through our [universal access programs](#).
- No open access publication fee payable by authors.
- The Author is entitled to post the [accepted manuscript](#) in their institution's repository and make this public after an embargo period (known as green Open Access). The [published journal article](#) cannot be shared publicly, for example on ResearchGate or Academia.edu, to ensure the sustainability of peer-reviewed research in journal publications. The embargo period for this journal can be found below.

### Gold open access

- Articles are freely available to both subscribers and the wider public with permitted reuse.

- A gold open access publication fee is payable by authors or on their behalf, e.g. by their research funder or institution.

Regardless of how you choose to publish your article, the journal will apply the same peer review criteria and acceptance standards.

For gold open access articles, 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 gold open access publication fee for this journal is **USD 3150**, excluding taxes. Learn more about Elsevier's pricing policy: <https://www.elsevier.com/openaccesspricing>.

*Green open access*

Authors can share their research in a variety of different ways and Elsevier has a number of green open access options available. We recommend authors see our [open access page](#) for further information. Authors can also self-archive their manuscripts immediately and enable public access from their institution's repository after an embargo period. This is the version that has been accepted for publication and which typically includes author-incorporated changes suggested during submission, peer review and in editor-author communications. Embargo period: For subscription articles, an appropriate amount of time is needed for journals to deliver value to subscribing customers before an article becomes freely available to the public. This is the embargo period and it begins from the date the article is formally published online in its final and fully citable form. [Find out more](#).

This journal has an embargo period of 12 months.

*Elsevier Researcher Academy*

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

*Language (usage and editing services)*

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

### **Submission**

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

*Submit your article*

Please submit your article via <https://ees.elsevier.com/spinee/default.asp>.

### **General Manuscript Formatting**

The following separate components are required (except as noted when optional):

1. Abstract (structured as outlined below. Methods section must include detailed relevant disclosure)
2. Keywords (6-10)
3. Classifications
4. Title Page (separate from manuscript) with all authors, affiliations and corresponding author's full contact information
5. Revision notes (revision stage only)
6. Manuscript document (blinded - no author names, headers, acknowledgements)
7. Tables (optional)
8. Figures (optional)
9. [ICMJE-TSJ Author Disclosure form](#)

10. [Affirmation of Authorship form](#)
11. [FDA drug/device approval status form](#)
12. [Level of Evidence form](#) (Clinical Studies only)
13. Appropriate checklists and flow diagrams as specified below in ARTICLE TYPES.

### Cover Letter

Manuscripts may be accompanied by a cover letter, to include information on the manuscript's prior publication or previous rejection by another journal. It is also meant to give the author(s) the chance to speak to the originality of the work being presented, as well as any other information the author(s) wish to convey to the editorial office staff and Editor-in-Chief. If the paper has been rejected previously by another journal, the author(s) should describe specifically how it has been improved since being rejected.

The Cover letter should be pasted into the box at the "Enter Comments" step, just prior to the "Attach files" section.

The First or Corresponding author of a manuscript should confirm that he/she "had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis as well as the decision to submit for publication."

A separate cover letter, called a "Revision Notes" file, is required for revised manuscripts, and must respond to all comments made by the reviewers and editors. Even if the authors decide not to alter a part of the manuscript based on a particular revision request, a response should be included for said comment.

### Style

Keep to the guidelines of style, terminology, measurement and quantization as prescribed in the *American Medical Association Manual of Style* (10th ed. Oxford University Press, NY, 2007). *TSJ* can accept text files in most standard word processing formats but Microsoft Word is preferred. Manuscripts must be blind (no author names, headers, acknowledgements, imbedded comments) keyed.

**Manuscript pages and text lines should be numbered. When numbering the lines of text, begin the first line on each page with 1.**

Distinguish between capital letter O and number 0, as well as capital letter I, lowercase letter l and number 1. However, authors should not attempt to determine the visual presentation of the article. All design considerations regarding typeface, page layout, artwork, etc. will be handled by the publisher; do not use any special formatting. All text should be flush left. Do not indent paragraphs. Double hard return between paragraphs and between list items. Do not use hard returns within a paragraph or list item. Tabs should not be used, except in Tables, where they should be used to align columns. Do not use your word processor's hyphenation capabilities.

### Peer Review Process

Full-length articles, Technical Reports, and Review Articles are peer-reviewed. The managing editor is the first-look editor for all manuscripts, evaluating text and general submission format. The managing editor makes sure all manuscripts meet *TSJ's* guidelines as prescribed in these author instructions. Once a manuscript has been initially evaluated, the managing editor will assign a set of appropriately chosen peer reviewers to evaluate and make comments on the manuscript. The invited reviewers are knowledgeable about the field of study being discussed, and as such are able to comment on the research and any subsequent conclusions made.

For most manuscripts *TSJ* is a double-blind journal. Great care is taken not to reveal the identity of the reviewers or the author(s).

In most cases a deputy editor will evaluate the reviewers' comments and make a recommendation to the Editor-in-Chief regarding publication. **THE EDITOR-IN-CHIEF HAS FINAL SAY ABOUT THE FATE OF ALL MANUSCRIPTS.** If the editors feel the manuscript could be eligible for publication following author revision -- be it minor or major -- the submission will be sent back to the corresponding author. The corresponding author should consider making any changes suggested by



the reviewers and editors and return the research back to the editorial office. The managing editor will again send the manuscript out for a second round of reviews. Whenever possible, the reviewers from the first round will be invited again, so as to encourage continuity of 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](#)) 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**

The following separate components are required (except as noted when optional):

1. Abstract (structured as outlined below. Methods section must include detailed relevant disclosure)
2. Keywords (6-10)
3. Classifications
4. Title Page (separate from manuscript) with all authors, affiliations and corresponding author's full contact information
5. Revision notes (revision stage only)
6. Manuscript document (blinded - no author names, headers, acknowledgements)
7. Tables (optional)
8. Figures (optional)
9. [ICMJE-TSJ Author Disclosure form](#)
10. [Affirmation of Authorship form](#)
11. [FDA drug/device approval status form](#)
12. [Level of Evidence form](#) (Clinical Studies only)
13. Appropriate checklists and flow diagrams as specified below in ARTICLE TYPES.

#### **Cover Letter**

Manuscripts may be accompanied by a cover letter, to include information on the manuscript's prior publication or previous rejection by another journal. It is also meant to give the author(s) the chance to speak to the originality of the work being presented, as well as any other information the author(s) wish to convey to the editorial office staff and Editor-in-Chief. If the paper has been rejected previously by another journal, the author(s) should describe specifically how it has been improved since being rejected.

The Cover letter should be pasted into the box at the "Enter Comments" step, just prior to the "Attach files" section.

The First or Corresponding author of a manuscript should confirm that he/she "had full access to all the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis as well as the decision to submit for publication."

A separate cover letter, called a "Revision Notes" file, is required for revised manuscripts, and must respond to all comments made by the reviewers and editors. Even if the authors decide not to alter a part of the manuscript based on a particular revision request, a response should be included for said comment.

#### **Style**

Keep to the guidelines of style, terminology, measurement and quantization as prescribed in the *American Medical Association Manual of Style* (10th ed. Oxford University Press, NY, 2007). *TSJ* can accept text files in most standard word processing formats but Microsoft Word is preferred. Manuscripts must be blind (no author names, headers, acknowledgements, imbedded comments) keyed.

**Manuscript pages and text lines should be numbered. When numbering your text, begin the first line on each page with 1.**

Distinguish between capital letter O and number 0, as well as capital letter I, lowercase letter l and number 1. However, authors should not attempt to determine the visual presentation of the article. All design considerations regarding typeface, page layout, artwork, etc. will be handled by the publisher; do not use any special formatting. All text should be flush left. Do not indent paragraphs. Double hard return between paragraphs and between list items. Do not use hard returns within a paragraph or list item. Tabs should not be used, except in Tables, where they should be used to align columns. Do not use your word processor's hyphenation capabilities.

#### *Subdivision - unnumbered sections*

Divide your article into clearly defined sections. Each subsection is given a brief heading. Each heading should appear on its own separate line. Subsections should be used as much as possible when cross-referencing text: refer to the subsection by heading as opposed to simply 'the text'.

#### *Introduction*

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

#### *Material and methods*

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

#### *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.

#### *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.

### **Abstract**

A structured abstract must be included with all article-types and must use the following subheadings in the order shown (Subheadings may not be combined):

- Background Context
- Purpose
- Study Design/Setting
- Patient Sample (MUST be included in Clinical Studies)
- Outcome Measures (MUST be included in Clinical Studies)
- Methods
- Results
- Conclusions

\* The METHODS section of the abstract MUST incorporate both study funding sources and a study-specific appraisal of potential conflict of interest-associated biases in the text of the manuscript. All applicable financial relationships will include magnitude of financial association - specific dollar amounts within ranges. It will be expected that authors will discuss these potential sources of study bias in the "Discussion" section of their article as a matter of routine, similar to discussions of other biases and limitations usually addressed. For more information, please see the editorial in the August 2011 issue of *The Spine Journal*, "**Future directions for The Spine Journal: managing and reporting conflict of interest issues.**"

\* The OUTCOME MEASURES subheading must provide information on one or more of the following categories, listed in the following order:

- Self-report Measures, eg, validated pain rating scale, disability questionnaire, etc.
- Physiologic Measures, eg, imaging or electrodiagnostic tests, aerobic capacity, range of motion or strength, etc.
- Functional Measures, eg, work status, health utilization, activities of daily living assessment, etc.

### **Keywords**

Immediately after the abstract, provide 6-10 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

### **Abbreviations**

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

### **Acknowledgements**

Collate acknowledgements and place them on the title page. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

### **Units**

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

### *Math formulae*

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

### *Footnotes*

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

## **Artwork**

### *Electronic artwork*

#### *General points*

- Make sure you use uniform lettering and sizing of your original artwork.
- Embed the used fonts if the application provides that option.
- Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
- Size the illustrations close to the desired dimensions of the published version.
- Submit each illustration as a separate file.

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) in addition to color reproduction in print. [Further information on the preparation of electronic artwork.](#)

#### *Illustration services*

[Elsevier's WebShop](#) 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.

## Graphics and Figures

*The Spine Journal* can now publish all figures in full color at no cost to the authors. Preferred formats are TIFF, JPEG or EPS with resolutions of 300 DPI and a minimum width of 3.5 inches wide. However, figures created in Microsoft Word or Excel (charts, graphs, etc.) can be presented in Word without concern for resolution or size. For further information on the preparation of electronic artwork, please refer to Elsevier's [Author Artwork Instructions](#).

Figures should be consecutively numbered (Arabic) as they appear in the text and accompanied by legends. Do not embed your labels/titles in the figures; Use the "Description" lines provided with each file at the "Attach Files" step to label. (eg, Figure 1, Figure 2, Figure 3a, etc.).

*Figures must not be embedded within or attached to the manuscript;* they are submitted separately, one-at-a-time, under FIGURES.

*TSJ* has an Artwork Quality checking system, provided through the EES system. At the time of submission, the system evaluates each figure for file type, resolution, size (width) and color scheme. The authors must confirm that the figures "pass" this verification system. Authors should understand, however, that our journal standards for art may exceed the artwork quality check tool. Certain figures will be given a "pass with warning" designation, suggesting that the publisher can work with the file despite its minor flaws. *TSJ*, however, will rarely accept figures with such a designation. Please be sure that your figures are the appropriate format, size and resolution before attaching them to your submission. If the authors are not able to provide sufficient digital figures, they will have to submit one 5 x 7-inch, high-quality print of each figure, labeled only on the back, in a separate protected envelope. Once received, the editorial office will scan the figures at the appropriate size and resolution, and upload them to your submission. Please bear in mind that this will dramatically slow the progress of your manuscript. As such, we highly recommend you utilize your institution's Information Technologies department to reformat any figures that do not meet *TSJ* standards.

The editor-in-chief reserves the right to withdraw a previously accepted manuscript if the author cannot produce high-quality figures in a timely manner to accompany the text.

Figures that have been previously published must be submitted with a letter of permission to reprint from the original publisher.

## Figure Legends

Legends should be double-spaced, numbered corresponding to the Figures. The Legend must appear within the main manuscript, immediately following the References. Please use lowercase letters to label multipart figures. When symbols, arrows, numbers or letters are used for identification, each should be explained clearly in the Legend. For microphotographs, internal scale marks should be defined and the method of staining given. If the figure has been previously published, a credit line should be included and a Letter of Permission from the previous publisher must accompany manuscript submission.

## Tables

All Tables should be typed, double-spaced and be numbered consecutively with descriptive titles. Do not place table titles and descriptions on your Figure Captions page, or any other separate legend page. All abbreviations used must be defined in footnotes at the bottom of the Table. Acknowledgement of previously published material should be given in a footnote to the Table, and the source should be included in the Reference list. Footnotes should be ordered as they appear in the Table with superscript Arabic numerals.

Tables must not be imbedded within or attached to the manuscript; they are submitted separately, one-at-a-time, under TABLES.

## 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.

#### *Reference management software*

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

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:

<http://open.mendeley.com/use-citation-style/the-spine-journal>

When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

#### *Reference formatting*

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

#### *Reference style*

**Text:** Indicate references by number(s) in square brackets in line with the text. The actual authors can be referred to, but the reference number(s) must always be given.

**List:** Number the references (numbers in square brackets) in the list in the order in which they appear in the text.

#### *Examples:*

Reference to a journal publication:

[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.

## 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](#).

### **Corresponding Author**

For all submissions, the corresponding author will be responsible for all questions about the manuscript and for reprint requests. Only one author can be designated as "corresponding author." The title holds no special authority or responsibility regarding contents and is rather an administrative designation for the editorial office to have consistent communication with the team of authors. As such, the first/principle author does not need to be designated as the corresponding author. Select an author who will be located at the same address for an extended period, and can respond to post-publication correspondence.

### *Revisions*

Revisions should be submitted to the TSJ Editorial Office as soon as possible. The standing deadline is 21 days. It is the corresponding author's responsibility to request more time if necessary, and to keep the editorial office abreast of the manuscript's progress. If after six months we do not hear from the corresponding author, the submission in question will be scheduled for deletion from the system. A final disposition of "withdrawn" will be given to the manuscript.

### **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.

*Author Inquiries*

If you have any general questions, please contact: Taylor Bowen, Managing Editor; e-mail: [tbowen@spine.org](mailto:tbowen@spine.org); phone (434) 218-3366.

If you have questions related to the electronic submission process or uploading your files, please visit our [Support Center](#).

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