

# Instructions for Authors

## *Journal of Applied Biomechanics*

The *Journal of Applied Biomechanics (JAB)* disseminates the highest quality peer-reviewed studies that utilize biomechanical strategies to advance the study of human movement. Areas of interest include clinical biomechanics, gait and posture mechanics, musculoskeletal and neuromuscular biomechanics, sport mechanics, and biomechanical modeling. Studies of sport performance that explicitly generalize to broader activities, contribute substantially to fundamental understanding of human motion, or are in a sport that enjoys wide participation, are welcome. Also within the scope of *JAB* are studies using biomechanical strategies to investigate the structure, control, function, and state (health and disease) of animals.

### I. Types of Manuscripts

*JAB* accepts six types of manuscripts, which are described below. The word count limitations pertain to the Introduction section through the Discussion section.

**Original Research Article:** Presents the results of a hypothesis-driven study or, in some cases, a descriptive study, the results of which are considered novel and important. Original Research Articles should not exceed 4,000 words or include more than 8 figures/tables.

**Technical Note:** Presents a new or modified method or instrument, or an important experimental observation. Technical Notes should not exceed 2,000 words or include more than 4 figures/tables.

**Computational Model Article:** Presents novel and important model development and/or application. Authors are required to address issues of model validation, sensitivity, and limitations as appropriate. Supplemental information (e.g. equations, visualizations, and data) can be made available online. Computational Model Articles should not exceed 4,000 words or include more than 8 figures/tables.

**Review Article:** Presents a critical and inclusive overview of a topic of scientific and/or clinical importance in biomechanics. The role of Review Articles in *JAB* is to provide a stimulus for further systematic biomechanical inquiry. This requires that a presumably large body of accumulated literature is summarized so as to illuminate gaps in the state of knowledge. These gaps can be revealed by identifying conflicting evidence, problems borne of methodological disparities and/or inadequacies, the influence of invalid or unproven assumptions, and the potential for alternative interpretations. Collectively, these gaps should lead to establishing explicit and testable hypotheses. Such reviews should be forward looking and should not merely report the current state of the art. Please e-mail the Editor-in-Chief Michael Madigan ([mlm@vt.edu](mailto:mlm@vt.edu)) if you are interested in submitting a Review Article for consideration. This email should include an abstract and a brief statement of expertise of the author(s) on the topic of the review, which can simply be a list of publications on the topic. Review Articles should not exceed 6,000 words or include more than 8 figures/tables.

**Target Article:** Presents a summary of current scientific thought from the unique perspective of an experienced scientist on a matter of significance to the field of biomechanics. Invited responses to the Target Article and the author's rebuttal can be published along with the Target Article. Target Articles are designed to stimulate thinking and research ideas relating to the topic. Please e-mail Editor-in-Chief Michael Madigan ([mlm@vt.edu](mailto:mlm@vt.edu)) if you are interested in developing a Target Article.

**Book Review:** Please e-mail Editor-in-Chief Michael Madigan ([mlm@vt.edu](mailto:mlm@vt.edu)) if you are interested in submitting a book review for consideration. Book Reviews should not exceed 1,000 words.

Please note that JAB has a general policy of not accepting papers that have a primary focus on the reliability, validity, or accuracy of commercially-available products. We have found that such papers tend to be poorly cited and, hence, have at most a modest impact in the field.

## II. Cover Letter

A cover letter must accompany all submissions. The cover letter should include the following items:

- A. Manuscript title
- B. Type of manuscript
- C. A statement that all authors satisfy the criteria for authorship as outlined by the International Committee of Medical Journal Editors (available at [www.icmje.org](http://www.icmje.org)). Each author must meet all 4 criteria:
  1. Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work
  2. Drafting the work or revising it critically for important intellectual content
  3. Final approval of the version to be published
  4. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

\*Individuals who do not meet the above criteria may be listed in the acknowledgments section of the manuscript.
- D. A statement that the manuscript has not been published elsewhere, and is not under consideration for publication elsewhere.
- E. List of all authors. The corresponding author may sign on behalf of all authors.
- F. If the author(s) are submitting a Review Article, the cover letter should also include a brief statement of expertise within the topic of the review, which can simply be a list of publications on the topic.

## III. Manuscript Preparation

All manuscripts must be written in English, with attention to concise language, a logical structure and flow of information, and correct grammar. We appreciate that some of our authors do not speak English as their first language and may need assistance to reach the standards required by the journal. In addition, some younger authors may not be experienced in scientific writing styles. Since manuscripts that fail to meet the journal's writing standards will not be sent out for

review, such authors should ensure that they seek assistance from native English speakers and/or experienced colleagues prior to submitting their paper. Many journals acknowledge the existence of companies that offer professional editing services. An example of such a service can be found at <http://www.aje.com/>. This information does not constitute endorsement of this service. Use of an editorial service is at the discretion and cost of the authors, and will not guarantee acceptance for publication in *JAB*.

The manuscript should be formatted and organized as described below, and as illustrated in the sample manuscript at the end of this document. If not specified here, questions about writing style should default to the 10th edition of the *AMA Manual of Style*. Failure to follow these guidelines may result in your manuscript being returned without review. Additional insight into how authors should compose their manuscript is freely available in the article referenced below.

Brand RA, Huiskes R. Structural outline of an archival paper for the *Journal of Biomechanics*. *J Biomech*. 2001;34(11):1371–1374. [http://www.jbiomech.com/article/S0021-9290\(01\)00104-X](http://www.jbiomech.com/article/S0021-9290(01)00104-X)

#### **A. Formatting**

Manuscripts should be submitted in Microsoft Word. Use Times New Roman 12-point font, 1-inch margins, full right/left justification, double-spacing, and continuous line numbers throughout the manuscript. Do not include page numbers because they will be automatically added when your submission is compiled into a PDF for peer review. Paragraphs should begin with an indentation by pressing the Tab key, with no blank line between paragraphs.

#### **B. Organization**

Please see the sample manuscript at the end of this document.

#### **C. Equations**

Whenever possible, we recommend Design Science’s MathType because it works well with Microsoft Word (.doc or docx), and because it is compatible with post acceptance journal production procedures. In ordinary text, please type in single variables and/or symbols by inserting characters from Word’s Symbol Standard font (eg,  $\alpha$ ,  $\omega$ , or  $\Delta_{vel}$ ). If these approaches are not possible, any program used to generate equations must render its equations in image format at a resolution of at least 300 pixels per inch.

#### **D. Numbers and Units**

Please use the International System of Units (SI) and its spacing rules for all numbers and units. For the correct abbreviations, see <http://www.bipm.org> or <http://physics.nist.gov/cuu/pdf/sp811.pdf>. Examples of correct usage are as follows:

1. N m or N·m for a newton meter; Pa s or Pa·s for a pascal second
2. m/s or m·s<sup>-1</sup> for a meter per second
3. L for a liter in all situations: mL, mmol/L, and similar
4. Always use a space to separate the number from the unit—as in “0.4 km·h; 0.995 W; and age, 27.7 ± 1.7 y”—even when used in a modifying context: “the

instrument applied a 2.5 MPa stress to the tissue” (no hyphen, or dash, between 2.5 and MPa).

5. Use the exponent style for multiple units, rather than the solidus (slash) style without parentheses: Use  $-21.25 \text{ J}\cdot\text{kg}^{-1}\cdot\text{m}^{-1}$  instead of  $-21.25 \text{ J/kg/m}$ .

#### **E. Additional Formatting Preferences**

1. Always use commas and semi-colons in a series to separate the items. The comma is the mandatory first-order separator, and the semi-colon is reserved to function only as the second-order separator, as in, “sports, exercise, and physical activity; randomized, double-blind, controlled trials; and enthusiasm, organization, and commitment. . . .” Always include the comma or semi-colon, as appropriate, before the conjunction word (and, or, but).
2. The semi-colon is used only to separate, and never to introduce.
3. The colon is used to introduce.
4. Capitalize only the very few kinds of words specified in the AMA style manual, such as persons’ names. If in doubt, use lowercase.
5. Use acronyms and abbreviations sparingly. Spell out a term at each instance if you use it only 2–3 times. Differentiate between abbreviations (usually lowercase letters) and acronyms (all capital letters). Always use the spelled-out form to begin a sentence. Once you introduce an acronym, keep using it and do not revert to use of the spelled-out term.
6. In the text, parentheses should always surround the brackets: ([ . . . ]).
7. In math, always use the multiplication sign ( $\times$ ) or centered dot ( $\cdot$ ), but never the asterisk. In text, type a space on both sides of all operators, or allow the math software to apply standard spacings. Separate the operations using brackets and parentheses: { . . . [ . . . ( . . . ) . . . ] . . . }
8. Leave no spaces before, between, and after any subscript or superscript.
9. Never use the Tab key except to indent the first line of a paragraph.

#### **IV. Review Criteria**

Manuscripts will initially be screened by the Editorial staff to determine whether it fits within the scope of *JAB*, has the potential for a positive review, and complies with the requested format and organization. Following this initial screening, *JAB* uses a single-blinded review process where the identity of the authors is revealed to the reviewers, but not vice versa. Manuscripts are peer-reviewed by the Editorial Board and reviewers according to the following general criteria:

- A. Significance or importance of the topic or problem to the field
- B. Originality of the research question(s) or goal(s) of the study
- C. Scientific quality of the methodology, results, and interpretation of the results
- D. Clarity and conciseness of the writing
- E. Potential impact on the field
- F. Interest to the readership

#### **V. Revised Manuscripts**

Following peer review, it is common for revisions to be requested. As part of the revision process, please create a document that provides a point-by-point response to the reviewer

comments. This document should alternate between each reviewer comment (pasted verbatim from the review), and your response to that comment. State specifically where in the manuscript you revised the text, table, and/or figure in response to the reviewer's concern, and underline added or changed text in the revised manuscript (do not use the track changes feature in Microsoft Word). If you choose not to revise the manuscript on a particular point, clearly state so and justify your decision.

During submission of your revised manuscript, upload your point-by-point response as a "Supplementary File", and update the order so that this file appears prior to the revised manuscript. This will ensure your response appears first in the PDF compiled by ScholarOne.

On the Title Page, write the *JAB* manuscript ID number followed by ".R1" for a first revision, ".R2" for a second revision, and so on.

1 **SAMPLE MANUSCRIPT**

2 **February 28, 2014**

3 **JAB\_2013\_0275.R1** *(Please include manuscript number if submission is a revision)*

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5 **Age differences in the required coefficient of friction during level walking do not exist when**  
6 **experimentally-controlling speed and step length**

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8 Dennis E. Anderson,<sup>1</sup> Christopher T. Franck,<sup>2</sup> Michael L. Madigan<sup>3</sup>

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10 <sup>2</sup>Department of Statistics, Virginia Polytechnic Institute and State University, Blacksburg, VA, USA

11 <sup>3</sup>Department of Biomedical Engineering, Texas A&M University, College Station, TX, USA

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13 **Conflict of Interest Disclosure:** None.

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23 **Running Title:** *(If desired, provide a brief title of no more than six words)*

24 *(Insert page break here)*

25 **Abstract**

26 The abstract should briefly describe your motivation, purpose, methods, results, and conclusions.

27 Do not use subheadings, and limit the length to 200 words.

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29 **Keywords:** Please include 3 to 5 keywords that help describe the general aspects of the manuscript.

30 These keywords should: *not* already appear in the title, be listed in all lowercase, and be separated

31 by commas (not semi-colons).

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33 **Word Count:** Please provide the word count for the Introduction through the Discussion.

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## Introduction

50 Provide background information on the significance of the problem or issues addressed by  
51 the work, making sure to adequately motivate the need for the study. In text citations should appear  
52 as superscript numerals,<sup>1</sup> and should be numbered in the order of appearance.

53 The last paragraph of the Introduction should explicitly state the purpose of the study, and  
54 hypotheses if appropriate. In general, Original Research Articles must include hypotheses. Other  
55 types of manuscript listed above do not have this requirement.

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## Methods

58 Begin with a description of your subjects. Studies involving humans must include a statement  
59 regarding institutional approval of protocol and informed consent. Studies involving animals  
60 must include a statement regarding institutional approval and compliance with government  
61 regulations on animal welfare. Then provide an overview of your Methods (including a  
62 description of your experimental design), and a detailed description of the Methods. If you  
63 proposed a question or hypothesis in the Introduction, conclude this section a description of your  
64 statistical analysis.

65 Subheadings: Subheadings are acceptable within the Methods section if formatted as  
66 shown here, but should not be used as a substitute for clear topic sentences that lead each  
67 paragraph.

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## Results

70 Begin each paragraph with a topic sentence that states a key result. Each topic sentence  
71 should correspond to a specific question asked or a hypothesis posed. The text following the topic

72 sentence provides the substantiating information. Subheadings should not be used in the Results  
73 section.

74 To report  $p$  values (note that  $p$  should be lowercase and italicized), use 3 decimal places  
75 for exact values, without a leading zero. For  $p$  values less than .001, use  $p < .001$ . References to  
76 Figures (Figure 1) and Tables (Table 1) in the text should be given parenthetically.

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## 78 **Discussion**

79 Begin by reiterating the purpose of the study or the important questions/hypotheses, and  
80 then the primary findings. Next, it is typically best to describe the important limitations of the  
81 study. The remaining Discussion should include: (1) interpretation (what happened and why?); (2)  
82 integration (how do the current results compare/support/diverge from existing evidence or  
83 theories?); and (3) implications (what does the current work suggest regarding practice in this or  
84 related fields?). End this section with a summary of your findings. Do not use “Conclusions” as a  
85 subheading, and do not provide any comments directed toward future research.

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## 87 **Acknowledgments**

88 Include sources of funding, and any other contributors to the work presented in the manuscript.

89

## 90 **References**

91 References should be numbered, and be listed in the same order as they appear in the manuscript.

92 References must follow the *American Medical Association (AMA) Manual of Style*, 10th edition.

93 This is the same format as used by the *Journal of the American Medical Association*, for which

94 output style files are available for most reference management software. References should be for

95 published materials (ideally, peer-reviewed), and preferably not sources that are not generally  
96 available to readers. References do not need to be double-spaced. Samples include:

- 97 1. Brand RA, Huiskes R. Structural outline of an archival paper for the Journal of  
98 Biomechanics. *J Biomech.* 2001;34(11):1371–1374. **[journal article]**  
99 2. Crisco JJ, Wilcox BJ, Machan JT, et al. Magnitude of head impact exposures in individual  
100 collegiate football players. *J Appl Biomech.* In press. **[in press journal article]**  
101 3. Lewinsohn P. Depression in adolescents. In: Gottlib IH, Hammen CL, eds. *Handbook of*  
102 *Depression.* New York, NY: Guilford Press; 2002:541–553. **[chapter in a book]**  
103 4. Iverson C, Christiansen S, Flanagan A, et al. *AMA Manual of Style: A Guide for Authors and*  
104 *Editors.* 10th ed. New York, NY: Oxford University Press; 2007. **[entire book]**  
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## Tables

Tables must be formatted using Microsoft Word's table-building functions, with rows, columns, and cells, and not with tabs, spaces, and paragraph breaks. Tables must be concise and no larger than approximately 15 cm (6 inches) wide by 23 cm (9 inches) tall, including the title and footnotes, if intended to fit on a single printed page. Tables should not be double-spaced. Each table must be numbered, have a brief title, and be mentioned in the text parenthetically (Table 1) at least once.

Table 1 Faller and nonfaller group characteristics, mean (SD)

Characteristic	Faller ( $n = 60$ )	Nonfaller ( $n = 90$ )	$p$
Age (years)	77.0 (8.2)	74.3 (9.0)	.002
Height (cm)	164.4 (8.2)	170.8 (10.9)	.011
Weight (N)	743.4 (166.8)	764.7 (148.3)	
Sex	16 male/44 female	46 male/44 female	< .001

*Note.* Details should go in the text or in the table footnote, and not in the table title.

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## Figure Captions

**Figure 1** — Provide a caption that describes a fact or finding depicted in the figure. Define all nonstandard abbreviations or acronyms used in the figure. The caption should be as short as possible, with full explanations provided in the text. Each figure must be numbered and each should be called out in the text in consecutive numerical order.

*(End of main document)*

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## Figures

170 Please do not integrate figures into your manuscript. Instead, each figure will be uploaded  
171 separately during the online submission process, and automatically appended to the end of your  
172 manuscript when a PDF of your entire submission is created via ScholarOne.

173 Each figure must be no larger than approximately 15 cm (6 inches) in width and 20 cm (8  
174 inches) in height, not including the caption. The size of any text appearing in your figures must be  
175 easily readable after the figure is properly sized for publication. Ideally, all units should be styled  
176 and used just as in the text. In bar graphs, the use of stripe patterns, cross-hatching, or solids (black  
177 or white) is best. When using shades of gray, make sure they are easily distinguishable when  
178 printed. Use thick (e.g., 1 point in width) black solid lines throughout for best reproducibility.

179 The required file format is JPG or TIF at 300 dpi. When uploading, clearly identify each  
180 figure by including its number and the corresponding author's name within the file name. Only if  
181 necessary to convey meaning, color figures can be published at a cost to the author of \$600 per  
182 page in the print version. Likewise, only if necessary, color figures may be used in *JAB*'s electronic  
183 version, but at no cost to the author (the corresponding print figures will be in black/white or  
184 grayscale). Whenever possible, please make sure data points/lines are distinguishable when printed  
185 on a non-color printer.

186 Authors wishing to reproduce previously published material must obtain prior written  
187 permission from the copyright holder, and include this with submission. Motion picture imaging  
188 (videos, movies) may be submitted for display as part of *JAB*'s electronic version.