***Science Translational Medicine* Manuscript Template**

**General Instructions on using this template and submitting a manuscript to *Science Translational Medicine*:** Using this template will help to speed the processing of your paper and completing the manuscript’s record in our system. Our goal is to automatically identify each section of your manuscript so that we can accurately extract title, authors, abstract, etc. and also be able to enrich it by including reference links and an accurate layout.

Please use the actual template, which starts on page 2. When you are ready to submit, please delete the text on this cover page.

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So that we can extract parts of your paper (even if you do not use this template), begin each section with the specific words listed below, some of which are followed by a colon. Do not use paragraph breaks in the title, author list, or abstract. The author list, corresponding author email(s), and affiliation(s) should be checked carefully because they will be published as listed in the manuscript.

**Title:** No more than 135 characters and spaces, lacking jargon and abbreviations where possible.

**Authors:**

**Affiliations:**

**Abstract:** 250 words or less.

**One Sentence Summary:** No more than 150 characters and spaces.

**Main Text:** Total number of words (text + captions + references) should be less than 10,000.

**References and Notes:** Only a single numbered list should be provided for all references cited in the main text and in the supplementary materials.

**Acknowledgments:** Split into general, Funding, Author contributions, Competing interests, and Data and materials availability, as described in the template below.

**Supplementary Materials:** Include a list, noting which references are only cited in the SM.

**Fig. #.** (Begin each figure caption with a label, “**Fig. 1.**”, for example, as a new paragraph.)

**Table #.** (Begin each table caption with a label “**Table 1.**”, for example, as a new paragraph.)

Please use the .docx format (all versions after Word 2007 for PC and Word 2011 for Mac) and include page numbers in your submitted file. We also encourage use of line numbers. Supplementary Materials (comprising Supplementary Materials and Methods, figures, and tables) should be in a separate file.

More specific formatting instructions are provided in the actual template, which follows.

Title: Insert your title here of not more than 135 characters including spaces

**Authors:** Firstname I. Lastname1\*, Firstname I. Lastname1,2, Firstname I. Lastname3†

[The author list should be one single paragraph (no breaks). Authors should be listed by given name, then middle initial, if any, followed by family name and separated by commas. Use superscript numbers to link affiliations, and symbols \*†‡ for author notes.]

**Affiliations:**

1Affiliations should be preceded by superscript numbers corresponding to the author list, and each affiliation should end with a period. A semicolon should be used to separate an institution from its address. We do not require a full mailing address, only city, and country, for each institution.

Example**:**

Hong Gildong1

1Department of Applied Physics, University of Tokyo; Bunkyo-ku, Tokyo, 113-8656, Japan.   (Note ; is used as a separator between the institution and its address)

2Each affiliation should be a separate paragraph.

3For large groups, use the name of the group or consortium and include a full list of the authors and affiliations after the Data and Materials Availability section in the main manuscript

\*Corresponding author. Email: include the email addresses of the corresponding author(s). Please use the asterisk (\*) symbol for the corresponding author information.

† Use symbols (in this order: †, ‡, §, ||, ¶, #, \*\*, ††, ‡‡, etc.) for author notes such as present addresses, “These authors contributed equally to this work” notations, and similar information. Please do not add author footnotes for professional titles (e.g., “Author is a Howard Hughes Medical Institute Investigator”) or data contacts (e.g., “Requests for materials should be sent to this author”). Such information should go in the Acknowledgments note.

**One Sentence Summary:** A brief summary of the main result of your paper (150 characters, including spaces) without excessive jargon.

**Abstract:** The abstract should be one paragraph and may not exceed 250 words. It should have the following structure: An opening sentence that sets the question that you address and is comprehensible to the general reader, background content specific to this study, results, and a concluding sentence. It should be one paragraph only.

**Main Text:**

**INTRODUCTION**

This should include introductory information that lays out the clinical problem addressed by the research and that explains other background necessary for understanding the study.

**RESULTS**

**Subhead 1: Brief phrase or sentence**

Subheadings should be brief, ideally less than 10 words. Subheadings should not end in a period. Your paper may have as many subheadings as are necessary.

**Subhead 2: All figures and tables cited in order**

All sections of the results should refer to a figure (for example, Fig. 1) or table (for example, Table 1), preferably a data display element that is part of the main text. All figures, figure panels and tables must be presented in order. For example, the description of panel A of figure 3 cannot come before that of panel B of figure 2. The supplementary figures (for example, fig. S1) and tables (table S1) must also be in presented in order.

You may include page breaks if you would like to embed the figures within the text instead of at the end of the paper.

**Subhead 3: All data presented first in the Results**

All data should be presented in the Results. No data should be presented for the first time in the Discussion. Data (such as from Western blots) should be appropriately quantified.

**Subhead 4: Formatting in-text reference callouts**

References should be cited in parentheses with an italic number (*1*). Multiple reference citations are separated by commas (*2*, *3*) or if a series, dashes (*4*-*6*). References are cited in order by where they first are called out, through the text, then the figure captions and tables or table captions, and then through the supplementary materials.

**Subhead 5: Handling of equations**

Equations can be included. Use MathType (recommended) or use the legacy equation editor in Word (Chose Insert > Insert Object > Word Equation). We do not recommend using the native equation editor. This can in some cases produce less reliable MathML, the online markup language we use, which may result in display errors. If you enter equations in simple LaTeX, check that they will convert accurately (Word 2007 and higher can convert simple LaTeX equations).

**DISCUSSION**

Include a Discussion that summarizes your conclusions and elaborates on their implications. There should be a paragraph outlining the limitations of your results and interpretation, as well as a discussion of the steps that need to be taken for the findings to be applied in the clinic. Please avoid claims of priority and avoid repeating the conclusions at the end.

**MATERIALS AND METHODS**

All descriptions of Materials and Methods should be included in the main paper. The Materials and Methods should be broken up into sections, each with a short subheading. Please include a study design paragraph at the start of the Materials and Methods and a statistical paragraph at the end of the Materials and Methods in the main text. If the Materials and Methods make the paper exceed the length limitations, less important sections of the Materials and Methods can be moved to the Supplementary Materials.

**List of Supplementary Materials**

Present a list of the Supplementary Materials in the following format.

Materials and Methods

Fig. S1 or Fig S1 to Sx for multiple supplementary figures

Table S1 or Tables S1 to Sx for multiple supplementary tables

Data file S1 or Data files S1 to Sx (Excel files)

Movie S1 or Movies S1 to Sx

References (*xx*–*xx*) (numbers for references only cited in SM)

References and Notes

1. There is only one reference list spanning the text, figure captions and Supplementary Materials. Do not include a second reference list in the Supplementary Materials section. References only cited in the Supplementary Materials section are not counted toward length guidelines.
2. Each reference should be on a separate line ending in a period. For a style guide, see <https://www.science.org/content/page/stm-instructions-research-articles-initial-submission#citation-style>.
3. Include all author names, full titles, and full page ranges: J. D. Crane, D. I. Ogborn, C. Cupido, S. Melov, Massage Therapy Attenuates Inflammatory Signaling After Muscle Damage. *Sci. Transl. Med.* **4**, 119–125 (2012).
4. You can use an automatically numbered list in Word.
5. Each reference should have a separate number.
6. Please do not combine references and explanatory notes under the same reference number.

**Acknowledgments:** Acknowledgments follow the references and notes but are not numbered. Start with text that acknowledges non-author contributions and then complete each of the sections below as separate paragraphs.

**Funding:** Include all funding sources here, including grant numbers, complete funding agency names, and recipient’s initials. Each funding source should be listed in a separate paragraph.

Examples:

National Institutes of Health grant U12AB123456 (PV, CHO)

National Institutes of Health grant R01AB123456 (PV, GS)

William K. Bowes Jr Foundation (PV)

German Research Foundation grant AB 1234/1-1

Office of Biological and Environmental Research of the U.S. Department of Energy Atmospheric System Research Program Interagency Agreement grant DE-SC0000001

National Institute of Health Research UK

UK-China Research and Innovation Partnership Fund through the Met Office Climate Science for Service Partnership (CSSP) China as part of the Newton Fund

**Author contributions:** Each author’s contribution(s) to the paper should be listed [we encourage you to follow the CRediT model]. Each CRediT role should have its own line, and there should not be any punctuation in the initials.

Examples:

Conceptualization: SBB, DLA, MPW

Methodology: HP, FTGS, CW, JRK, NJB, PRB, JLS, EH

Investigation: SBB, DLA, MPW, WCB

Visualization: SFB, MJM, JLS, EH

Funding acquisition: SJE, MJM, JLS, EH

Project administration: JLS, EH

Supervision: SJE, MJM, JLS, EH

Writing – original draft: SBB, DLA, WCB, JLS, EH

Writing – review & editing: SBB, DLA, PRB, JLS, EH

**Competing interests:** Include any financial interests for each author that could be perceived as being a conflict of interest (including but not limited to financial holdings, professional affiliations, advisory positions, and board memberships). Here, also include any awarded or filed patents pertaining to the results presented in the paper, stating patent filing number and title and which authors are co-inventors. When authors have no competing interests, this should also be declared (e.g., “Authors declare that they have no competing interests.”).

**Data and materials availability:** All data, code, and materials used in the analysis must be available in some form to any researcher for purposes of reproducing or extending the analysis. Include a note explaining any restrictions on materials, such as materials transfer agreements (MTAs). Note accession numbers to any data relating to the paper and deposited in a public database; include a brief description of the data set or model with the number. If all data are in the paper and supplementary materials, include the sentence “All data are available in the main text or the supplementary materials.”

**Figures**

[If possible, embed the figures within the Word file, either within results or after the acknowledgements, with each figure’s caption immediately below it. This will facilitate evaluation of the paper.]

**Fig. 1**. **Short title of the first figure.** The figure caption should begin with a title (an overall descriptive statement of the figure) followed by additional text. The caption should be placed immediately after each figure. The primary callout of each figure part is indicated with a bold capital letter enclosed in parentheses [e.g., (A)]. Additional callouts are indicated the same way, but without the bold format. If a paragraph in the main text begins with the name of a figure, write out “Figure” in full (e.g., <para>“Figure 1 shows….”).

**Fig. 2.** **Short title of the second figure.** Indicate figure parts with bold capital letters (**A**), (**B**) . If you prefer, you can place both the actual figures and captions logically through the text near where they are cited rather than at the end of the file (but not both). Please do not use text boxes to arrange figures. High-resolution (preferably editable PDF or Adobe Illustrator format) figure files will be requested following review.

**Table 1.** **Short title of the first table.** Start table captions with a title (short description of the table). Format tables using the Word Table commands and structures. Do not create tables using spaces or tab characters.