

JACC: Cardiovascular Imaging Instructions for Authors

JACC: Cardiovascular Imaging publishes research articles on current and future clinical applications of noninvasive and invasive imaging techniques including echocardiography, CT, CMR, nuclear, angiography, and other novel techniques. JACC: Cardiovascular Imaging also publishes manuscripts related to basic science and molecular imaging with potential clinical applicability. It provides a forum for encouraging a lively and vigorous debate on all aspects of imaging, including imaging algorithms and the hierarchy of various imaging modalities.

All manuscripts should be submitted online at <http://www.jaccsubmit-imaging.org>. Manuscript submissions should conform to the guidelines set forth in the “Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals,” available from www.icmje.org/recommendations and most recently updated in December 2019.

English language help service: Upon request, Elsevier will direct authors to an agent who can check and improve the English language of their paper before submission. Please contact authorsupport@elsevier.com for further information.

AUTHOR ENQUIRIES

For enquiries relating to submitted articles or to articles currently under review, please contact the JACC: Cardiovascular Imaging editorial office at jaccim@acc.org. You can track your accepted article at <http://www.elsevier.com/trackarticle>. Elsevier’s Authors Home also provides the facility to track accepted articles and set up e-mail alerts to inform you of when an article’s status has changed, as well as detailed artwork guidelines, copyright information, frequently asked questions, and more. You are also welcome to contact Customer Support via <http://support.elsevier.com>. Authors can order copies of the issue in which their article appears at a discounted rate. For this service, please visit our Support Hub page <https://service.elsevier.com> for assistance.

EXCLUSIVE SUBMISSION/PUBLICATION POLICY

Manuscripts are considered for review only under the conditions that they are not under consideration elsewhere and that the data presented have not appeared on the Internet or have not been previously published (including symposia, proceedings, transactions, books, articles published by invitation, and preliminary publications of any kind, excepting abstracts that do not exceed 400 words). On acceptance, transfer of copyright to the American College of Cardiology Foundation will be required. Elsevier will maintain copyright records for the College. Sharing of data from manuscripts that are under review or accepted but not yet published is expressly forbidden, unless permission is received from the JACC Journals Editorial Office. We ask that authors disclose this information during the submission process.

JACC Journals does not consider the posting of manuscripts to a preprint server a prior publication, if they have not undergone peer review and provided that the following conditions are met: 1) when submitting a manuscript to a JACC journal, authors must acknowledge preprint server deposition and provide all associated accession numbers or DOIs; 2) versions of a manuscript that have been altered as a result of our peer review process may not be deposited; 3) the preprint version cannot have been indexed in MEDLINE or PubMed; and 4) upon publication in a JACC journal, authors are responsible for updating the archived preprint with a DOI and link to the published

version of the article. Should the paper be accepted and published in a JACC journal, that JACC journal DOI should be considered to be the one representing this published work in all credits, citation, and attribution.

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](#).

OPEN ACCESS

This journal offers authors a choice in publishing their research:

OPEN ACCESS

- Articles are freely available to both subscribers and the wider public with permitted reuse.
- An open access publication fee is payable by authors or on their behalf, e.g. by their research funder or institution.

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.

Regardless of how you choose to publish your article, the journal will apply the same peer review criteria and acceptance standards. For open access articles, permitted third party (re)use is defined by the following [Creative Commons user licenses](#).

OPEN ACCESS FEE

The open access fee for this journal is \$4000, excluding taxes. Learn more about [Elsevier’s pricing policy](#).

FUNDING BODY AGREEMENTS AND POLICIES

CC BY for funded authors only

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

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

CC BY-NC-ND license

For non-commercial purposes, this license 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.

PERMISSIONS

JACC: Cardiovascular Imaging supports the need for authors to share, disseminate, and maximize the impact of their research. Details on how authors can reuse and post their own articles are provided at <https://www.elsevier.com/about/open-science/open-access>. For general information on requesting permission to reuse material published in *JACC: Cardiovascular Imaging*, please visit <https://www.elsevier.com/about/our-business/policies/copyright/permissions>. Some requests from other STM signatory publishers qualify for gratis reuse. See the STM website for details: <http://www.stm-assoc.org/documents>. Questions about obtaining permission? Contact the Permissions Helpdesk at permissionshelpdesk@elsevier.com or +1-800-523-4069 × 3808.

RELATIONSHIP WITH INDUSTRY POLICY

Authors are required to disclose any relationship with industry and other relevant entities—financial or otherwise—within the past 2 years that might pose a conflict of interest in connection with the submitted article on the title page. All sources of funding for the work should be acknowledged in a footnote on the title page, as should all institutional affiliations of the authors (including corporate appointments). This includes associations such as consultancies, stock ownership, or other equity interests or patent-licensing arrangements. If no conflict of interest exists, please state this on the title page. Relationship with industry guidelines apply to all authors. ALL FORMS ARE NOW SIGNED AND SUBMITTED ELECTRONICALLY. Once a manuscript is accepted, the authors will be sent links to complete electronic Copyright Transfer and Relationship with Industry forms. Only the corresponding author may electronically sign the copyright form; however, ALL AUTHORS ARE REQUIRED TO ELECTRONICALLY SIGN A RELATIONSHIP WITH INDUSTRY FORM. Once completed, a PDF version of the form is e-mailed to the author. Authors can access and confirm receipt of forms by logging into their account online. Each author will be alerted if his form has not been completed by the deadline.

Only authors appearing on the final title page will be sent a form. YOU CANNOT ADD AUTHORS AFTER ACCEPTANCE OR ON PROOFS. After a paper is sent to the publisher, the links to the electronic forms will no longer be active. In this case, authors will be sent links to download hard copy forms that they may mail or fax to the *JACC: Cardiovascular Imaging* office.

The *JACC* Journals program prefers the term Relationships with Industry and Other Entities as opposed to the term Conflict of Interest, because, by definition, it does NOT necessarily imply a conflict. When all relationships are disclosed with the appropriate detail regarding category and amount, and managed appropriately for building consensus and voting, the *JACC* Journals program believes that potential bias can be avoided and the final published document is strengthened since the necessary expertise is accessible.

ETHICS

Manuscript submissions should conform to the guidelines set forth in the “Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals (ICMJE Recommendations),” available online at <http://www.icmje.org/recommendations> and most recently updated in December 2019.

Studies should be in compliance with human studies committees and animal welfare regulations of the authors’ institutions and the U.S. Food and Drug Administration guidelines. Human studies must be performed with the subjects’ written informed consent. Authors must provide the details of this procedure and indicate that the institutional committee on human research has approved the study protocol. If radiation is used in a research procedure, the radiation exposure must be specified in the Methods.

Studies on patients or volunteers require ethics committee approval and informed consent, which should be documented in your paper. Patients have

a right to privacy. Therefore, identifying information, including patients’ images, names, initials, or hospital numbers, should not be included in videos, recordings, written descriptions, photographs, and pedigrees unless the information is essential for scientific purposes, and you have obtained written informed consent for publication in print and electronic form from the patient (or parent, guardian, next of kin, or other legally authorized representative). If consent is subject to conditions, the editorial office must be informed.

Written consents must be provided to the editorial office on request. Even where consent has been given, identifying details should be omitted if they are not essential. If identifying characteristics are altered to protect anonymity, such as in genetic pedigrees, authors should provide assurance that alterations do not distort scientific meaning and editors should so note. If such consent has not been obtained, personal details of patients included in any part of the paper and in any supplementary materials (including all illustrations and videos) must be removed before submission. Animal investigation must conform to the “Position of the American Heart Association on Research Animal Use,” adopted by the AHA on November 11, 1984. If equivalent guidelines are used, they should be indicated. The AHA position includes: 1) animal care and use by qualified individuals, supervised by veterinarians, and all facilities and transportation must comply with current legal requirements and guidelines; 2) research involving animals should be done only when alternative methods to yield needed information are not possible; 3) anesthesia must be used in all surgical interventions, all unnecessary suffering should be avoided and research must be terminated if unnecessary pain or fear results; and 4) animal facilities must meet the standards of the American Association for Accreditation of Laboratory Animal Care (AAALAC).

The *JACC* Journals have an ethics committee comprised of 7 members, which oversees quality control and will look into the issues of concern, if any.

AUTHORSHIP/COVER LETTER

Each author should have contributed significantly to the submitted work. The contribution of each should be substantiated in the cover letter. If authorship is attributed to a group (either solely or in addition to 1 or more individual authors), all members of the group should meet the full criteria and requirements for authorship. To save space, if group members have been listed in *JACC: Cardiovascular Imaging*, the article should be referenced rather than reprinting the list. The Editors consider authorship to include all of the following: 1) conception and design or analysis and interpretation of data, or both; 2) drafting of the manuscript or revising it critically for important intellectual content; and 3) final approval of the manuscript submitted. Participation solely in the collection of data does not justify authorship but may be appropriately acknowledged in the Acknowledgment section.

Authors must agree to the following ICJME statements. These questions will be part of the submission process and manuscripts will not be reviewed until they are confirmed: 1) The paper is not under consideration elsewhere; 2) none of the paper’s contents, with the exception of abstracts, have been previously published; 3) all authors have read and approved the manuscript; 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; 5) the full disclosure of any relationship with industry (see “Relationship with Industry Policy”) or that no such relationship exists. Exceptions must be explained. If there is no conflict of interest, this should also be stated in the cover letter.

The corresponding author should be specified in the cover letter and on the title page. A short paragraph telling the editors why the authors think

their paper merits publication priority may be included in the cover letter. Potential reviewers may be suggested in the cover letter, as well as reviewers to avoid.

In order to add or remove any authors after acceptance of their paper, all listed authors at the time of acceptance need to provide written approval to the *JACC Journals*' editorial office prior to the scheduling and publication of the paper.

GENERAL GUIDELINES FOR SUBMISSION OF ORIGINAL RESEARCH PAPERS

The Editors require that manuscripts not exceed 5,000 words (including references and figure legends). Note that if you are asked to revise your paper an alternate word limit may be specified by the Editors. An outcomes expert/associate editor will review such manuscripts after provisional acceptance. If needed, the Editors will work with the authors in revising the manuscript to highlight the important features of the manuscript. Illustrations and tables should be limited to those necessary to highlight key data. Please provide gender-specific data, when appropriate, in describing outcomes of epidemiologic analyses or clinical trials; or specifically state that no gender-based differences were present. Basic science or experimental studies should have potential clinical applicability. We would prefer manuscripts that offer an algorithmic approach to the use of diagnostic modalities for the best cost-effective use in clinical medicine.

Ethical Approval (required): Please denote that your study received the proper ethical oversight in both your cover letter and your Methods section. For manuscripts reporting data on human subjects, note institutional review board/ethics committee approval (or formal review and exemption), including the specific name of the board or committee. For studies involving animal experiments, note that the study complied with all institutional and national requirements for the care and use of laboratory animals and, if applicable, received animal care and use committee approval. State the animal-handling protocol in your Methods.

The manuscript should be arranged as follows: 1) title page; 2) structured abstract and key words; 3) condensed abstract; 4) abbreviations list; 5) text; 6) acknowledgments (if applicable); 7) references; 8) figure titles and legends; and 9) tables. Page numbering should begin with the title page.

IREVIEWS (STATE-OF-THE-ART IN IMAGING). Editors welcome reviews on integrated cardiovascular imaging and multi-modality imaging in an attempt to provide the best practice guidelines for general cardiologists. Imaging reviews must adhere to preferred length guidelines and would be accompanied by an unstructured abstract. Please contact us with suggestions before you start to prepare such review articles.

In addition to the unstructured abstract for the State-of-the-Art Review, please provide a list of 3-4 brief bullet points (85 characters, 15 words or fewer per bullet) that highlight the main messages of the review. The first bullet should provide the translational/clinical context or background that establishes the relevance or need for this review. The second bullet should speak to the main message and focus of the review, including any recommendations made by the authors. The final bullet should summarize where the field needs to move forward from this point.

Example:

- Cardiovascular aging is a biological phenomenon caused by the accumulation over time of damage at the cellular, tissue, and organismal level leading to a progressive decline in function and structure.
- Calorie restriction, intermittent fasting, and adjusted diurnal rhythm of feeding are powerful interventions for the prevention of cardiovascular dysfunction and cardiovascular disease.

- Lowered intake of protein, specific amino acids, and saturated fatty acids and nutritional modulation of the gut microbiome can have additional cardioprotective roles.
- Regular endurance and resistance exercise, mindfulness-based stress reduction programs, and some calorie-restriction mimetic medications can potentiate the beneficial effects of a healthy diet.

iPIX (IMAGING VIGNETTE). iPIX is designed to convey important concepts in cardiovascular imaging using a series of images. Typical submissions would be a series of clinical and/or basic science images—including studies in motion—that:

- a) Comprehensively illustrate a typical spectrum of important classic features or significantly novel findings;
- b) Provide unique insight into fundamental mechanisms of cardiovascular disease or pathophysiology; comprehensively illustrate major, but less well known, facets of an abnormality; or clarify a new therapy;
- c) Present hypothesis generating and/or cutting edge concepts through images;
- d) Present previously unavailable/unclear correlations between clinical imaging and pathology.

Though often presented within the context of a clinical scenario, this section is not meant to be a vehicle for case reports or a substitute for “Images in Medicine” like features. It is expected that submissions will typically involve images from a number of subjects. Only submissions that align closely with the above criteria will be processed for this section and will be subject to regular peer review.

A series of approximately 10 to 20 images should be provided. Text should consist of a title page, an introduction of 150 words, a descriptive figure legend of up to 150 words per figure, and—only if absolutely necessary—up to 3 references. Video clips can be submitted in mp4 format (see “Video Requirements”). If movies are used, they must be linked to a specific figure and be mentioned in the text.

EDITORIAL COMMENTS AND EDITORIAL VIEWPOINTS. Most manuscripts in every issue will be accompanied by editorial comments.

Although usually invited, succinct opinion pieces will also be considered for *JACC: Cardiovascular Imaging*.

EMAIL (LETTERS TO THE EDITOR). This section is intended to highlight recent development or other important pieces of information. Ethical Approval (required): Please denote that your study received the proper ethical oversight in both your cover letter and the body of the article. For manuscripts reporting data on human subjects, note institutional review board/ethics committee approval (or formal review and exemption), including the specific name of the board or committee. For studies involving animal experiments, note that the study complied with all institutional and national requirements for the care and use of laboratory animals and, if applicable, received animal care and use committee approval. State the animal-handling protocol in the body of your article. In addition, it will also carry routine letters commenting or critiquing specific articles that have appeared in *JACC: Cardiovascular Imaging*. A limited number of letters (maximum 800 words) will be published. Please include the cited article as a reference. If needed, replies to the letter will be solicited by the Editors from the authors. After a certain amount of time has passed, the Editors may no longer accept letters for a particular article.

MANUSCRIPT CONTENT

TITLE PAGE

Include the title, authors' names (including full first and last names and middle initial and degrees), total word count, and a brief title of no more than

45 characters. List the departments and institutions with which the authors are affiliated, and indicate the specific affiliations if the work is generated from more than one institution (use superscript letters ^{a, b, c, d}, and so on). Please list authors' current e-mail addresses as well. Also provide information on grants, contracts, and other forms of financial support. List the cities and states of all foundations, funds, and institutions involved in the work. This must include the full disclosure of any relationship with industry (see "Relationship With Industry Policy"). If there are no relationships with industry, this should be stated. Under the heading, "Address for correspondence," give the full name and complete postal address of the author to whom communications should be sent. Also provide telephone and fax numbers and an e-mail address for the corresponding author, and a Twitter handle, if available. Please also provide a short tweet summarizing your paper on your title page. The tweet should be approximately 280 characters, including spaces. Please include up to three hashtags with your tweet (Example: #ACCIntl, #ACCFIT, #WomenInCardiology, #CVD, #HeartFailure). You may also review our hashtag guide (<https://www.acc.org/-/media/Non-Clinical/Files-PDFs-Excel-MS-Word-etc/About-ACC/Social-Media/ACC-Social-Media-Hashtag-Reference-Guide.pdf>). Please note that the editors will review your content, and it may not ultimately be published on the @JACCJournals Twitter account. The corresponding author will be the sole contact for all submission queries.

STRUCTURED ABSTRACT

Provide a structured abstract of 300 words, presenting essential data in 5 paragraphs introduced by separate headings in the following order: Objectives, Background, Methods, Results, and Conclusions. Use complete sentences. All data in the abstract should also appear in the manuscript text or tables. For general information on preparing structured abstracts, see "Haynes RB, Mulrow CD, Huth EJ, Altman DG, Gardner MJ. More information abstracts revisited. *Ann Intern Med.* 1990;113:69-76." A 200-word unstructured abstract is appropriate for review articles.

TEXT

The text should be structured as Introduction, Methods, Results, and Discussion. Use headings and subheadings in the Methods, Results, and Discussion sections. Every reference, figure, and table should be cited in the text according to order of mention. All supplemental figures, tables, and appendices should also be cited in the text.

ABBREVIATIONS

The abbreviations of common terms (e.g., ECG, PTCA, CABG) or acronyms (GUSTO, SOLVD, TIMI) may be used in the manuscript. On a separate page following the condensed abstract, list the selected abbreviations and their definitions (e.g., TEE = transesophageal echocardiography). The Editors may determine which lesser known terms should not be abbreviated. Please consult "Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals (ICMJE Recommendations)," available at www.icmje.org/recommendations and most recently updated in December 2019, for appropriate use of units of measure.

MACHINE LEARNING CHECKLIST

To improve the transparency of reporting and the reproducibility of machine-learning algorithms, authors of research articles that have used machine-learning techniques must provide a completed checklist that will be made available to editors and reviewers during the manuscript assessment. A statement for the checklist or scientific justification for any variations from recommended algorithmic steps [see Sengupta PP, Shrestha S, Berthon B, et al. Proposed Requirements for Cardiovascular Imaging-Related Machine Learning Evaluation (PRIME): A Checklist: Reviewed by the American College of Cardiology Healthcare Innovation Council. *J Am Coll Cardiol Img.* 2020;13:2017-2035. <https://www.jacc.org/doi/10.1016/j.jcmg.2020.07.015>.] should be included in the manuscript. This machine-learning reporting summary and checklist will be published with all accepted manuscripts as online supplementary information.

[j.jcmg.2020.07.015](https://www.jacc.org/doi/10.1016/j.jcmg.2020.07.015).] should be included in the manuscript. This machine-learning reporting summary and checklist will be published with all accepted manuscripts as online supplementary information.

STATISTICS

All publishable manuscripts will be reviewed for appropriateness and accuracy of statistical methods and statistical interpretation of results. We subscribe to the statistics section of the "Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals (ICMJE Recommendations)," available at www.icmje.org/recommendations and most recently updated in December 2019. In the Methods sections, provide a subsection detailing the statistical methods, including specific methods used to summarize the data, methods used for hypothesis testing (if any) and the level of significance used for hypothesis testing. When using statistical methods beyond *t* tests, chi-square, and simple linear regression, specify the statistical package, version number, and non-default options used. For more information on statistical review, see "Glantz SA. It is all in the numbers. *J Am Coll Cardiol.* 1993;21:835-7." All manuscripts are reviewed by the outcomes editor as well.

CLINICAL PERSPECTIVES

The authors should delineate clinical competencies and translational outlook recommendations for their manuscripts. These should be listed in the manuscript after the Text and before the Acknowledgments and References. Please review the examples provided below. The competencies describe the implications of the study for current practice. The translational outlook places the work in a futuristic context, emphasizing directions for additional research.

CLINICAL COMPETENCIES

Competency-based learning in cardiovascular medicine addresses the 6 domains promulgated by the Accreditation Council on Graduate Medical Education (ACGME) and endorsed by the American Board of Internal Medicine (Medical Knowledge, Patient Care and Procedural Skills, Interpersonal and Communication Skills, Systems-Based Practice, Practice-Based Learning, and Professionalism) (www.acgme.org/acgmeweb). The ACCF has adopted this format for its competency and training statements, career milestones, lifelong learning, and educational programs. The ACCF also has developed tools to assist physicians in assessing, enhancing, and documenting these competencies (http://www.acc.org/education-and-meetings/maintenance-of-certification-information-hub?w_nav=MN).

Authors are asked to consider the clinical implications of their report and identify applications in one or more of these competency domains that could be used by clinician readers to enhance their competency as professional caregivers.

This applies not only to physicians in training, but to the sustained commitment to education and continuous improvement across the span of their professional careers.

TRANSLATIONAL OUTLOOK

Translating biomedical research from the laboratory bench, clinical trials or global observations to the care of individual patients can expedite discovery of new diagnostic tools and treatments through multidisciplinary collaboration. Effective translational medicine facilitates implementation of evolving strategies for prevention and treatment of disease in the community. The Institute of Medicine identified 2 areas needing improvement: testing basic research findings in properly designed clinical trials and, once the safety and efficacy of an intervention has been confirmed, more efficiently promulgating its adoption into standard practice (Sung NS, Crowley WF, Genel M. The meaning of translational research and why it matters. *JAMA.* 2008;299:3140-3148).

The National Institutes of Health (NIH) has recognized the importance of translational biomedical research, emphasizing multifunctional collaborations between researchers and clinicians to leverage new technology and accelerate the delivery of new therapies to patients (www.ncats.nih.gov/about/about.html).

Authors are asked to place their work in the context of the scientific continuum, by identifying impediments and challenges requiring further investigation and anticipating next steps and directions for future research.

ACKNOWLEDGMENTS

Acknowledgments should contain 100 words or less. Signed letters of permission from all individuals listed in the acknowledgments must be submitted to *JACC: Cardiovascular Imaging*.

REFERENCES

- Identify references in the text with superscript numerals. Do not use EndNote.
- The reference list should be double-spaced on pages separate from the text; references must be numbered consecutively in the order in which they are mentioned in the text. List all authors if 6 or fewer, otherwise list the first 3 and add “et al.” Do not use periods after author initials.
- Do not cite personal communications, manuscripts in preparation, or other unpublished data in the references; these may be cited in the text in parentheses. Do not cite abstracts that are older than 2 years. Identify abstracts by the abbreviation “abstr” in parentheses. If letters to the editor are cited, identify them with the word “letter” in parentheses. Websites must be cited as references (i.e., any URLs cited in the text must be included as references rather than in the text).
- Use Index Medicus (National Library of Medicine) abbreviations for journal titles. It is important to note that when citing an article from *JACC: Cardiovascular Imaging*, the correct citation format is *J Am Coll Cardiol Img*.
- Use the following style and punctuation for references:
 - Periodical. Do not use periods after the authors’ initials. Please provide all page numbers: Example: “5. Glantz SA. It is all in the numbers. *J Am Coll Cardiol*. 1993;21:835-837.”
 - DOI-based citation for an article in press.
 - If the ahead-of-print date is known, please provide. EXAMPLE: “16. Winchester D, Wen X, Xie L, et al. Evidence for preprocedural statin therapy: meta-analysis of randomized trials. *J Am Coll Cardiol*. 2010. <https://doi.org/10.1016/j.jacc.2010.09.028>.”
 - If the ahead-of-print date is unknown, please omit. EXAMPLE: “16. Winchester D, Wen X, Xie L, et al. Evidence for pre-procedural statin therapy: meta-analysis of randomized trials. *J Am Coll Cardiol*. <https://doi.org/10.1016/j.jacc.2010.09.028>.”
 - Chapter in book. Provide author(s), chapter title, editor(s), book title, publisher location, publisher name, year, and inclusive page numbers. EXAMPLE: “27. Meidell RS, Gerard RD, Sambrook JF. Molecular biology of thrombolytic agents. In: Roberts R, editor. *Molecular Basis of Cardiology*. Cambridge, MA: Blackwell Scientific Publications, 1993:295-324.”
 - Book (personal author or authors.) Provide a specific (not inclusive) page number. EXAMPLE: “23. Cohn PF. *Silent Myocardial Ischemia and Infarction*. 3rd edition. New York, NY: Marcel Dekker, 1993:33.”
 - Online media. Provide specific URL address and date information was accessed. EXAMPLE: “10. Henkel J. Testicular Cancer:

Survival High With Early Treatment. *FDA Consumer magazine* [serial online]. January-February 1996. Accessed August 31, 1998. http://www.fda.gov/fdac/features/196_test.html.”

- Material presented at a meeting but not published. Provide authors, presentation title, full meeting title, meeting dates, and meeting location. EXAMPLE: “20. Eisenberg J. Market forces and physician workforce reform: why they may not work. Paper presented at: Annual Meeting of the Association of Medical Colleges; October 28, 1995; Washington, DC.”

AMA Manual of Style. The *JACC Journals* follow the *AMA Manual of Style* with minor modifications. This guide provides guidance on usage, including but not limited to sociodemographic descriptors and nomenclature. For more detailed information on what’s new in the 11th edition, see the slide set here: <https://www.amamanualofstyle.com/page/aboutAMAMOS11>.

FIGURES

- All figures must have a number, title, and caption.
- TIF figures are preferred.
- Typeset figures should be no smaller than 7 inches wide.
- Lettering should be of sufficient size to be legible after reduction for publication; the optimal size is 12 points but should be no less than 10 points. Symbols should be of a similar size.
- Color and gray scale images must be at least 300 DPI. Line art should be at least 1200 DPI.
- All abbreviations used in the figure should be identified in an alphabetical order at the end of each legend.
- All symbols used (arrows, circles, etc.) must be explained.
- Figure numbers must correspond with the order in which they are mentioned in the text.
- If previously published figures are used, written permission from the original publisher (or copyright holder, if not the publisher) is required. See STM Guidelines for details: <https://www.stm-assoc.org/intellectual-property/permissions/permissions-guidelines/>.
- If the figure has been previously published, cite the figure source in the legend.
- Do not include trial logos in figures.

Decimals, lines, and other details must be strong enough for reproduction. Use only black and white—not gray—in charts and graphs. Place crop marks on photomicrographs to show only the essential field. Designate special features with arrows. All symbols, arrows, and lettering on half-tone illustrations must contrast with the background. There is no fee for the publication of color figures. Our editors encourage authors to submit figures in color, as we feel it improves the clarity and visual impact of the images.

FIGURE LEGENDS

Figure legends should be an in-depth explanation of each figure, including a figure TITLE and a CAPTION that includes the purpose of the figure, and brief method, results, and discussion statements pertaining to the figure. All abbreviations used in the figure should be identified either after their first mention in the legend or in alphabetical order at the end of each legend. All symbols used (arrows, circles, etc.) must be explained. **Target length should be 50-100 words per figure, with the title no more than 10 words. Legends should not exceed 150 words.**

- All figures must have a number, title, and caption.
- Figure legends should be double-spaced on pages separate from the text.

- Figures should be cited in numerical order in the text with each figure called out individually, rather than using a range (for instance, Figures 1, 2, and 3, rather than Figures 1-3). Supplemental figures should be cited as “Supplemental Figure 1, Supplemental Figure 2,” etc.
- Figure titles should be short and followed by a 2- to 3-sentence caption.
- Your Central Illustration should be listed last.
- If the figure has been previously published, cite the figure source in the legend.

CENTRAL ILLUSTRATION

All Original Research Papers and State-of-the-Art Reviews must develop at least 1 Central Illustration (that may be a hand-drawn figure), which summarizes the entire manuscript or at least a major section of the manuscript. Our in-house medical illustrators will create the final printable versions of these figures in consultation with the authors and the editors. The purpose of these illustrations is to provide a snapshot of your paper in a single visual, conceptual manner. Trial logos should not appear in Central Illustrations. The illustration should be labeled as “Central Illustration,” rather than as a numbered figure, and it must not duplicate content from other figures in the manuscript. This illustration must be called out in the body of the article. It must be accompanied by a legend (title and caption). The Central Illustration legend should be listed last in your list of figure legends. The Central Illustration must be an original image and, for copyright reasons, cannot be adapted or reprinted from another source. For best practices on creating Central Illustrations, please see *The Art and Challenge of Crafting a Central Illustration or Visual Abstract* at <https://www.jacc.org/doi/full/10.1016/j.jacc.2019.10.035>.

TABLES

Each table should be on a separate page, with the table number and title centered above the table and explanatory notes below the table. Use Arabic numbers. Table numbers must correspond with the order cited in the text. Tables should be self-explanatory, and the data presented in them should not be duplicated in the text or figures.

- All tables must have a title of up to 15 words.
- Each table may include a caption of up to 100 words. Abbreviations, which do not count toward the caption word limit, should be listed in a footnote under the table in alphabetical order.
- Footnote symbols should use lowercase, superscript letters, in alphabetical order: ^a, ^b, ^c, etc.
- If previously published tables are used, written permission from the original publisher (or copyright holder, if not the publisher) is required.
- Cite the source of the table in the footnote.

SUPPLEMENTAL MATERIAL

Authors may submit supplemental material to accompany their article. The supplemental material should be essential to the understanding and interpretation of the primary manuscript and should contain original content that has not been previously published. The supplemental material will be posted online at the same time of publication of the article.

Please upload all supplemental materials, with the exception of videos and large data sets (see below), as one separately uploaded Word document that is labeled “Supplemental Appendix.” The pages of the Supplemental Appendix should be numbered consecutively. The first page of the Supplemental Appendix should list the title and page number of each element included in the document.

The Supplemental Appendix document may include the following elements:

- Supplemental methods
- Supplemental results
- Supplemental tables (e.g., Supplemental Table 1, Supplemental Table 2)
- Supplemental figures with accompanying figure legends (e.g., Supplemental Figure 1, Supplemental Figure 2)
- All references that are cited within supplemental material should be placed in a separate reference section that is at the end of the supplemental material. The references should be formatted just as in the main manuscript and numbered and cited consecutively in the Supplemental Appendix.

All supplemental material will undergo editorial and peer review at the same time as the main manuscript is being evaluated. **Once the manuscript is accepted for final publication, the content of the supplemental material cannot be changed.**

Large Data Sets

Large data sets for gene expression microarrays, SNP arrays, and high-throughput sequencing studies should be deposited in a public data repository (1,2). Microarray data must be deposited in a public database that is compliant with Minimum Information About a Microarray Experiment (MIAME) guidelines (e.g., GEO). High-throughput sequencing data must be deposited in a public database that is compliant with Minimum Information About a Next-generation Sequencing Experiment (MINSEQE) guidelines. Please provide the relevant accession numbers in the text of the main manuscript.

1. Wheeler DL, Barrett T, Benson DA, et al. Database resources of the National Center for Biotechnology Information. *Nucleic Acids Res.* 2007;35:D5-12.
2. Edgar R, Barrett T. NCBI GEO standards and services for microarray data. *Nat Biotechnol.* 2006;24:1471-2.

VIDEO REQUIREMENTS

Inclusion of videos in the published paper is at the discretion of the Editors:

1. Video submissions for viewing online should be submitted as MP4 files only. The Journal office will not accept any other file formats. Please refer to the guidelines below on quality checking the videos before submission:

You can use any video conversion tool that supports MP4 format with codec setting for H.264 (×264). In some tools, it may also be known as MPEG-4 Part 10 or H.264/AVC. This format provides an excellent quality, performance, and file size. It is also widely supported by media players, including mobile devices.

An example of a free open-source tool is HandBrake (<https://handbrake.fr/docs/en/latest/table-of-contents.html>). Please note that troubleshooting videos for various other tools is beyond the scope of this document or JACC staff.

2. Videos should be no larger than 15 MB. Larger videos will require longer download times and may have difficulty playing online. Videos should be restricted to the most critical aspects of your research. A longer procedure can be restructured as several shorter videos (each no more than 3 minutes) and submitted in that form.
3. A video legends page giving a brief description of the content of each video must be included in the manuscript. Please list the video legends page *immediately after* the figure legends page in the manuscript. When submitting the manuscript to the submission site, please do not upload the video legends page as a supplemental

file. Please note that ALL videos must be linked to figures or panels of a figure(s). If there are individual video panels (e.g., Video 1A, Video 1B, etc.), a legend for each panel must be provided. Videos can either be cited in the manuscript's text or in a figure legend. See examples below:

a. Video referenced in manuscript text:

We used cardiac magnetic resonance and computed tomographic imaging to characterize the anatomic variability of our patients with SVDs (Figures 1, 2, 3, 4, 5, and 6, Videos 1, 2, 3, and 4).

b. Video referenced in figure legend:

Figure 1. Covered Stent Placement for Closure of a Sinus Venosus Defect. (A) A covered stent that is expected to successfully close the sinus venosus defect. (B) An unsuccessful case due to blockage of a large anomalous pulmonary vein (aPV). The virtual covered stent (pink) is placed in the superior vena cava (SVC) and shown in an anterior view, with most of the heart cut away for clarity. **Videos 1, 2, 3, and 4** show the library of stents, measuring the SVC and aPVs in virtual reality space, initial stent sizing, and verification of successful stent placement, respectively, for patient A.

c. Video legend page:

- Video 1. Library of stents used for virtual stenting.
- Video 2. Measurements of SVC and aPV in VR space.
- Video 3. Initial stent sizing process.
- Video 4. Verification of successful stent placement.

JACC JOURNALS PUBLICATION INTEGRITY GUIDELINES

JACC Journals have adopted integrity guidelines to help authors uphold the ethics, values, and principles of the publication process at the highest standards. The guidelines below include best practices and are consistent with those implemented by other journals and scientific publishers.

Plagiarism

The Office of Research Integrity (ORI) defines plagiarism as “theft or misappropriation of intellectual property and the substantial unattributed textual copying of another’s work.” Manuscripts where unacknowledged copying of others’ ideas, language and/or results will not be published in JACC Journals and, depending on level of egregiousness, will be reported to ORI and/or other agencies. Therefore, authors should ensure that appropriate attribution and citation is provided when discussing, paraphrasing, or summarizing the work of others. Included is the use of one’s own text from previous publications (exclusive of materials and methods), where appropriate attribution and citation is necessary. Reuse of one’s own or others’ previously published data, whether it be publishing the same paper in multiple journals or adding incremental new data to a previous publication without providing appropriate references, will be considered a duplicate publication.

Should JACC Journals discover acts of plagiarism pre-publication, the publication process will be halted until the matter is resolved. Should JACC Journals discover acts of plagiarism post-publication, an investigation to determine the extent and context of the plagiarism will be conducted. JACC Journals reserve the right to correct or retract any publication based on the findings of said investigations.

Due Credit for Unpublished and Published Work

Authors must discuss, properly cite, and provide appropriate permissions for any unpublished work included in submitted manuscripts. Any data, intellectual contribution, and/or technical development, including unpublished data from databases, must be acknowledged and appropriately cited.

Authors must include written assurance that they are complying with the data-licensing agreements of the original source documents when using licensed data. If an author is reusing or modifying previously published or copyrighted figures, documented permission from the previous publisher or copyright holder is required.

Duplicate Publication

Material submitted to a JACC Journal must be original. Submitted material cannot have been previously published and cannot be simultaneously submitted elsewhere (exclusive of meeting abstracts). Related manuscripts under consideration or in press elsewhere must be declared by authors submitting to a JACC Journal at the time of submission in the cover letter. If related material is submitted elsewhere after submission to a JACC Journal, authors must notify the JACC Journal immediately.

Data Integrity

All data and figures published in JACC Journals must accurately represent the original data and findings. Misrepresentation of data acquisition and/or post-acquisition processing is not acceptable.

While JACC Journals understand minor data processing may be unavoidable, submitted digital images must be as close to original as possible. Processing/image adjustment (e.g., contrast or brightness) must be applied equally across the entire image and any relevant controls. Any image processing/adjustment should not make data disappear or mask additional bands. Authors should explain any image alterations in the figure legend and identify image acquisition tools and processing software in the methods. Integral settings and processing manipulations used to process the presented data should also be described.

JACC Journals reserve the right to request all unprocessed data files included in a submitted manuscript. Manuscript evaluation may be halted or discontinued if the files are not available upon request.

Authors should take care to adhere to the following specific concerns:

Electrophoretic gels and blots. Cropped gels must preserve all important bands. Individual images cannot be used in multiple figures except when the figures describe different aspects of the same experiment (e.g., when a single control experiment served multiple experiments performed simultaneously). When an image is used in multiple figures, authors must clearly state the reason(s) for this in the figure legend.

Quantitative comparisons between samples on different gels/blots should be avoided, and only performed when normalizing controls are available for both gels. Protein loading controls must be run on the same blot. If unavoidable, the figure legend must indicate that the samples are derived from the same or parallel experiments and that the gels/blots are processed in parallel.

Removal of irrelevant or blank lanes from a gel is permissible; however, such alterations must be noted in the figure legend and boundaries between the nonadjacent or rearranged lanes must be clearly marked in the figure.

Microscopy. A scale bar should be included with all microscopy images. The measured resolution at which an image was acquired and any subsequent processing or averaging that enhances the resolution must be clearly stated. Adjustments should be applied over the entire image.

Microscopy settings for comparable controls and samples should be the same between experiments. Any necessary nonlinear, pseudocolor, or color adjustments made to images must be stated in the figure legend. Any manipulation of threshold and expansion or contraction of signal ranges should be avoided.

Authors should not combine images obtained separately, at different times, or from different locations, into a single image, unless specifically stated in the figure legend.

Data Visualization Guidelines. Figures representing data need to be designed and presented in a way that allows readers to understand and critically interpret the data. Authors must ensure that figures use easily distinguishable colors/lines/symbols and are color-blind-safe.

Continuous data and small sample sizes should be represented with figures that show full data distribution, such as dot or scatter plots. Bar graphs should be avoided except when showing counts or proportions.

Authors should consider adding a flow chart or study design diagram when appropriate. Flow charts should provide information about excluded observations and reasons for exclusion at each phase of the study.

Data Management Guidelines. As outlined by ORI, data management is one of the essential areas of responsible conduct of research (<https://ori.hhs.gov/education/products/clinicaltools/data.pdf>). Authors are expected to maintain all of the primary data used for their research submission, so that it can be evaluated by the reviewers and editors. At a minimum the retention of data after manuscript publication should conform to the policies within the authors' organization and the funding organization.

CONTACTING US

The mailing address for the *JACC: Cardiovascular Imaging* editorial office and the Editor-in-Chief is:

Y. Chandrashekhar, MD
Editor-in-Chief, *JACC: Cardiovascular Imaging*
Heart House
2400 N Street NW
Washington, DC 20037
Tel: 202-375-6136
Fax: 202-375-6819
E-mail: jaccimg@acc.org

It is important to note that when citing an article from *JACC: Cardiovascular Imaging*, the correct citation format is *J Am Coll Cardiol Img*.