As the leader in its field, JACC publishes original peer-reviewed clinical and experimental reports on all aspects of cardiovascular disease. Topics covered include coronary artery and valve disease, congenital heart defects, vascular surgery, cardiomyopathy, drug treatment, new diagnostic techniques, findings from the laboratory, and large multicenter studies of new therapies. JACC also publishes abstracts of papers presented at the annual scientific sessions of the American College of Cardiology and the reports and recommendations of the Bethesda Conferences on current topics in cardiovascular disease.

Benefits to authors
We also provide many author benefits, such as 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 pages: http://help.elsevier.com/app/answers/list/p/8045

AUDIENCE
Specialists in Cardiovascular and Internal Medicine, Cardiovascular Surgery, Pediatric Cardiology, and General and Family Practitioners. For detailed, current information, browse the JACC Homepage http://www.cardiosource.com/jacc.html. Here you will find the current table of contents, complete with abstracts and full-text articles (for individual print subscribers), references, tables and figures. The JACC Homepage also features other important information on permissions, advertising contacts, and other related products. Come browse the leading web site for cardiologists at http://www.cardiosource.com/jacc.html.

IMPACT FACTOR
2017: 16.834 © Clarivate Analytics Journal Citation Reports 2018
ABSTRACTING AND INDEXING

MEDLINE®
Science Citation Index
PubMed
Excerpta Medica
Elsevier BIOBASE/Current Awareness in Biological Sciences
Current Contents
Abridged Index Medicus
EMBASE
Chemical Abstracts
BIOSIS
Scopus
Cumulative Index to Nursing and Allied Health Literature
Reference Update

EDITORIAL BOARD

EDITOR-IN-CHIEF
Valentin Fuster, MD, PhD, New York, NY

EXECUTIVE EDITOR
Jagat Narula, MD, PhD, New York, NY

PUBLISHING DIRECTOR
Kimberly Murphy, Washington, DC

EDITORIAL DIRECTOR
Justine Varieur Turco, Washington, DC

GUEST EDITORS
Deepak L. Bhatt, MD, MPH, Boston, MA
P.K. Shah, MD, Los Angeles, CA

DEPUTY EDITORS
Jonathan Halperin, MD, New York, NY

INTERNATIONAL ADVISORS
Jane Armitage, FRCP, FFPH, Oxford, United Kingdom
Edimar A. Bocchi, MD, São Paulo, Brazil
Antonio Colombo, MD, Milan, Italy
Erling Falk, MD, PhD, DMSc, Aarhus, Denmark
Junbo Ge, MD, Shanghai, China
Gerd Heusch, MD, PhD, Essen, Germany
José C. Nicolau, MD, PhD, São Paulo, Brazil
Han Ya-Ling, MD, PhD, Shenyang, China

ASSOCIATE EDITORS
David H. Adams, MD, New York, NY
Paul W. Armstrong, MD, Edmonton, Canada
Blase Carabello, MD, Greenville, NC
Y. Chandrashekhar, MD, Minneapolis, MN
George Dangas, MD, PhD, New York, NY
G. William Dec, Jr., MD, Boston, MA
Srinivas Dukkipati, MD, New York, NY
Michael E. Farkouh, MD, MSc, Toronto, Canada
Bruce Gelb, MD, New York, NY
Roger Hajjar, MD, New York, NY
Mark Hlatky, MD, Stanford, CA
Borja Ibáñez, MD, PhD, Madrid, Spain
James L. Januzzi, Jr., MD, Boston, MA
Spencer B. King, III, MD, Atlanta, GA (Editor-in-Chief, JACC: Cardiovascular Interventions)
Douglas L. Mann, MD, St. Louis, MO (Editor-in-Chief, JACC: Basic to Translational Science
Thomas H. Marwick, MBBS, PhD, MPH, Hobart, Australia
Sanjiv N. Narayan, MD, Stanford, CA
Christopher Newton-Cheh, MD, MPH, Boston, MA
Christopher M. O’Connor, MD, Fairfax, VA (Editor-in-Chief, JACC: Heart Failure)
Jeffrey W. Olin, DO, New York, NY
Jeanne Poole, MD, Seattle, WA
Sunil V. Rao, MD, Durham, NC
Josep Rodés-Cabau, MD, Québec City, Canada
Javier Sanz-Salvo, MD, New York, NY
David J. Wilber, MD, Chicago, IL (Editor-in-Chief, JACC: Clinical Electrophysiology)

STATISTICAL EDITORS
Paul L. Clopton, MS, San Diego, CA
Jan G.P. Tijssen, PhD, Amsterdam, the Netherlands

SECTION EDITORS

Basic Translational Research
L. Badimon, MD, Barcelona, Spain
J.F. Bentzon, MD, PhD, Aarhus, Denmark
G. Heusch, MD, Essen, Germany
J.C. Kovacic, MD, New York, NY
P. Libby, MD, Boston, MA
C.A. MacRae, MBChB, PhD, Boston, MA
S. Marx, MD, New York, NY

Clinical Cardiology
E.R. Bates, MD, Ann Arbor, MI
W.E. Boden, MD, Albany, NY
R.P. Choudhury, DM, Oxford, UK
R. De Caterina, MD, Chieti, Italy
P. Golino, MD, Naples, Italy
P.T. O’Gara, MD, Boston, MA
P.J. Podrid, MD, Boston, MA
M. Simoons, MD, Rotterdam, the Netherlands
C.I. Stefanadis, MD, Athens, Greece
P. Vaishnava, MD, New York, NY
W. Wijns, MD, Aalst, Belgium

Clinical Trials and Registries
J.H. Alexander, MD, Durham, NC
P. Boffetta, MD, New York, NY
R.M. Califf, MD, Durham, NC
T. Collier, BSc, MSc, London, UK
M.J. Domanski, MD, New York, NY
A.C. Gелиjns, JD, PhD, New York, NY
J.S. Hochman, MD, New York, NY
M. Kosiborod, MD, Kansas City, KS
R. Mehran, MD, New York, NY
M. Miller, MD, Baltimore, MD
S.J. Pocock, PhD, London, UK
G.G. Schwartz, MD, Denver, CO
L. Shaw, MD, Atlanta, GA

Congenital Heart Disease
T. Geva, MD, Boston, MA
D.T. Hsu, MD, Bronx, NY
J. Kreutzer, MD, Pittsburgh, PA
M.J. Landzberg, MD, Boston, MA
C.E. Ruiz, MD, PhD, Hackensack, NJ

Coronary, Peripheral, and Structural Interventions
D. Antoniucci, MD, Florence, Italy
R.J. Applegate, MD, Winston-Salem, NC
M.E. Bertrand, MD, Lammersart, France
J.A. Bittl, MD, Ocala, FL
H. Dauerman, MD, Burlington, VT
S.G. Ellis, MD, Cleveland, OH
T.D. Henry, MD, Los Angeles CA
P. Pibarot, DVM, PhD, Québec City, Canada
P.P. Sengupta, MD, Morgantown, WV
J.D. Thomas, MD, Chicago IL

**Metabolic Disorders**
D.J. Rader, MD, Philadelphia, PA
R.S. Rosenson, MD, New York, NY

**Neurovascular and Neurodegenerative Diseases**
P. Amarenco, MD, Paris, France
S. Gandy, MD, New York, NY
G.J. Hankey, MBBS, Perth, Australia

**Outcomes Research and Quality**
D.J. Cohen, MD, MSc, Kansas City, MO
J.P. Curtis, MD, New Haven, CT
B.J. Darrow, MD, New York, NY
D.J. Malenka, MD, Lebanon, NH
M. Reynolds, MD, Burlington, MA

**Pharmacology**
J.J. Badimon, PhD, New York, NY
C.B. Granger, MD, Durham, NC
C. Patrono, MD, Rome, Italy
F.W.A. Verheugt, MD, Amsterdam, Netherlands

**Pulmonary Hypertension**
S.Z. Goldhaber, MD, Boston, MA
M. Gomberg-Maitland, MD, MSc, Chicago, IL
M. Hoepfer, MD, Hannover, Germany
S.V. Konstantinides, MD, Alexandroupolis, Greece
V.V. McLaughlin, MD, Ann Arbor, MI
M.J. Semigran, MD, Boston, MA

**Rhythm Disorders**
S. Chugh, MD, Los Angeles, CA
M.R. Gold, MD, Charleston, SC
J. Jalife, MD, Ann Arbor, MI
H. Kottkamp, MD, Zurich, Switzerland
B.D. Lindsay, MD, Cleveland, OH
F. Marchlinski, MD, Philadelphia, PA
A.J. Moss, MD, Rochester, NY

**Surgery**
S.F. Aranki, MD, Boston, MA
R.J. Damiano, MD, St. Louis, MO
J.D. Puskas, MD, New York, NY
H.V. Schaff, MD, Rochester, MN
L.G. Svensson, MD, PhD, Cleveland, OH
J. Woo, MD, Stanford, CA
M.H. Yacoub, MBchB, London, UK

**Valvular Heart Disease**
F. Bakaeen, MD, Cleveland, OH
S.F. Bolling, MD, Ann Arbor, MI
R.O. Bonow, MD, Chicago, IL
J.S. Borer, MD, New York, NY
J. Chikwe, MD, New York, NY
M. Enriquez-Sarano, MD, Rochester, MN
H.C. Herrmann, MD, Philadelphia, PA
B.R. Lindman, MD, Atlanta, GA
S.H. Rahimtoola, MD, Los Angeles, CA

**Vascular Medicine**
I. Baumgartner, MD, Bern, Switzerland
J.A. Beckman, MD, Boston, MA
J.P. Cooke, MD, Houston, TX
E. Falk, MD, Aarhus, Denmark
S. Yla-Herttuala, MD, Kuopio, Finland
C-M. Yu, MD, Hong Kong, China
B. Zaret, MD, New Haven, CT
Y. Zhang, MD, PhD, Jinan, China
M.R. Zile, MD, Charleston, SC
GUIDE FOR AUTHORS

INTRODUCTION

The Journal of the American College of Cardiology (JACC) publishes peer-reviewed articles highlighting all aspects of cardiovascular disease, including original investigations, experimental investigations with clear clinical relevance, state-of-the-art papers, and viewpoints. All manuscripts must be submitted online at www.jaccsubmit.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 (ICMJE Recommendations),” available online at http://www.icmje.org and most recently updated in December 2016.

ARTICLE TYPES

JACC publishes the following manuscript types: State-of-the-Art Reviews, Review Topics of the Week, Original Investigations, Research Letters, Letters to the Editor, and Fellows-in-Training & Early Career pages. We also publish Editorial Comments for each Original Investigation, although these are specifically invited by the editorial board and should not be submitted as unsolicited articles. In general, case reports will not be considered for publication.

Proposals for both State-of-the-Art Reviews and Review Topics of the Week should first be emailed to the editorial office at jacc@acc.org to determine if the editor is interested in considering your review for publication. The majority of reviews are solicited by the editors, however, proposals may be considered.

State-of-the-Art Review

The Present and Future: State-of-the-Art Review: As with all submissions to JACC, State-of-the-Art Reviews should focus on the patient. From basic mechanisms to clinical manifestations and interventional approaches to global health implications, such manuscripts will focus on a contemporary, controversial, or translational topic with 4 to 5 major sections written by multiple authors or author groups.

Word count: no more than 10,000 words (text from the introduction to the conclusion, plus references and figure legends) Abstract: Unstructured and no more than 150 words Condensed Abstract: No more than 100 words, stressing clinical implications Figure Limit: None Table Limit: None Central Illustration: Required Clinical Perspectives: Not required

Please be sure you have obtained or will obtain permission for previously published tables, figures, or any material for which you cannot grant copyright.

Review Topic of the Week

The Present and Future: Review Topic of the Week: As with all submissions to JACC, Review Topics of the Week should focus on the patient. They provide a literature review on a contemporary topic of basic, translational, or clinical science. Such manuscripts may be written by a single author or an author group.

Word count: no more than 5,000 words (text from the introduction to the conclusion, plus references and figure legends) Abstract: Unstructured and no more than 150 words Condensed Abstract: No more than 100 words, stressing clinical implications Figure Limit: None Table Limit: None Central Illustration: Required Clinical Perspectives: Not required

Cardiovascular Medicine & Society

These submissions should focus on the impact that government policy (federal, state, and local) and social considerations have on cardiovascular care and its global delivery systems. Such manuscripts may be written by a single author or an author group.

Word count: No more than 2,000 words (text from the introduction to the conclusion, plus references and figure legends) Abstract: Not required Authors: No more than 10 References: No more than 10 Figures/Tables: 1 figure (in no more than 2 parts) or 1 simple table Central Illustration: Not required Clinical Perspectives: Not required

Original Investigations

JACC Original Investigations should relate to cardiovascular science and medicine that may include studies conducted in humans or analyses of human data, or novel preclinical studies with direct clinical relevance that significantly advance the field.

Word count: No more than 5,000 words (text from the introduction to the conclusion, plus references and figure legends). If you are asked to revise your paper, the editors may specify an alternate word limit. Abstract: Structured with the following headings and no more than 250 words: Background,
Objectives, Methods, Results, Conclusions. The abstract should present essential data in 5 paragraphs. Use complete sentences. All data in the abstract also must 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 informative abstracts revisited. Ann Intern Med 1990;113:69-76.” Condensed Abstract: No more than 100 words, stressing clinical implications Figure/Table Limit: None Central Illustration: Required Clinical Perspectives: Required

Research Letters
Both Research Letters and Letters to the Editor are published under the heading “Letters.” You may submit original investigations of a focused nature as a research letter. Word count: No more than 800 words, including references and figure legend References: No more than 5 Authors: No more than 10 Figures/Tables: 1 figure (in no more than 2 parts) or 1 simple table Online or Supplemental Material: Not permitted.

Letters to the Editor and Replies
Focus on a specific manuscript that has appeared in JACC. Letters must be submitted within 3 weeks of the print issue date of the article. We will seek a reply to your letter from the authors of the original paper and publish together, when possible. Letters may be submitted about original research articles only. JACC does not consider letters to the editors on review articles, editorials, or any correspondence, including research letters. Letters to the editor on guidelines are also no longer considered. Word count: No more than 400 words, including references References: No more than 5 Figures/Tables: No more than 1 figure (in no more than 2 parts) or table Please include the cited article as the first reference Authors: No more than 5 Title: Unique title of 15 words or less that does not include the title of the original research paper Title page: Required

Editorial Comments
The editors invite all Editorial Comments published in the Journal. If you are invited to write an editorial, specific requirements will be sent to you. Please do not submit unsolicited editorials.

Fellows-in-Training & Early Career Page
These articles are a maximum of 1,500 words and focus on topics that are of unique relevance to FITs and the younger cardiologist community. However, the submissions must be substantive, engaging in hard-hitting topics that impact their daily practice. In terms of style, they must be formal in their presentation, as these are not blogs, and include citations (if relevant). Also, we would encourage specificity when choosing a topic on which to write, as opposed to something that is too broad to have true impact. All authors must be within 10 years of medical school. Please note that these articles will be reviewed and may be rejected by the JACC Editors. These should NOT be submitted online but e-mailed to jacc@acc.org.

MANUSCRIPT ORGANIZATION
Cover Letter: A short paragraph telling the editors why the authors think their paper merits publication may be included in the cover letter. Potential reviewers may be suggested in the cover letter, as well as reviewers to avoid. However, final reviewer assignment is determined by the editors. Rebuttal Letter (revisions or appeals only) Manuscript file (see individual manuscript types and Manuscript Content for specific formatting, and you may also email jacc@acc.org for a template on how to format your submission)
The entire manuscript (including tables) should be uploaded as a Microsoft Word document, with 1-inch margins and use Times New Roman 12 pt as the font. The title and abstract pages, including keywords and abbreviations, should be single-spaced. All text from the introduction to the end (including tables) should be double-spaced. Page numbering should start with the title page. Page 1: Title page: See also Manuscript Content, below Page 2: Abstract, Condensed Abstract, Key Words, Abbreviations list Text Perspectives: Core Clinical Competencies and Translational Outlook implications (on a separate page after the conclusions, and only for Original Investigation submissions) References Figure titles and legends, including a title and caption for the Central Illustration (if necessary) Tables, each on a separate page Figures Supplemental material Page numbering should begin with the title page.

MANUSCRIPT CONTENT
The order in which these items appear should also be the order in which they appear in your submission.
Title Page
Title (no more than 15 words) and brief title of no more than 7 words. Authors names (including full first name, middle initial, and degreesMD, PhD, etc.). Total word count. Departments and institutions with which the authors are affiliated. Indicate the specific affiliations if the work is generated from more than one institution (use superscript letters a, b, c, d, and so on). List only the departments and institutions for co-authors. The full address is required for the corresponding author. Funding: 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. Disclosures: This must include the full disclosure of any relationship with industry. (See Relationship with Industry section.) If there are no relationships with industry, this should be stated. Corresponding author contact information: Under the heading, Address for correspondence, provide 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, and a Twitter handle, if available. The corresponding author will be the sole contact for all submission queries. Acknowledgements: 100 words or less. Letters of permission from all individuals listed in the acknowledgments are the responsibility of the corresponding author.

Abstract
Provide a structured abstract of no more than 250 words for Original Investigations, presenting essential data in 5 paragraphs introduced by separate headings in the following order: Background, Objectives, Methods, Results, Conclusions. All data in the abstract also must 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 informative abstracts revisited. Ann Intern Med 1990;113:6976.”
An unstructured 150-word abstract should be provided for either type of review article.

Keywords
Immediately after the abstract, provide a maximum of 6 key words, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, ‘and’, ‘of’). Be sparing with abbreviations. These key words will be used for indexing purposes, and therefore should be different than the terms/words already used in the title of the paper.

Abbreviations
Up to 10 abbreviations of common terms (e.g., ECG, PTCA, CABG) or acronyms (GUSTO, SOLVD, TIMI) may be used throughout the manuscript. On a separate page following the abstract, list the selected abbreviations and their definitions (e.g., TEE ≡ transesophageal echocardiography). The editors will determine which lesser-known terms should not be abbreviated. Consult “Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals (ICMJE Recommendations),” available at http://www.icmje.org, for appropriate use of units of measure.

Text
Use Times New Roman 12-pt font. The text should be structured as: Introduction, Methods, Results, Discussion, and Conclusions. Use headings and subheadings in the Methods, Results, and, particularly in the Discussion sections. Every reference, figure, and table should be cited in the text in numerical order according to order of mention.

Clinical Perspectives
The authors should delineate clinical competencies and translational outlook recommendations for their manuscripts. These competencies should not restate the questions underlying the work but describe the implications of the study and how the new information can be integrated into current practice based on the 6 domains delineated by the Accreditation Council on Graduate Medical Education (ACGME) and adopted by the American College of Cardiology Foundation (ACCF). These should be listed in the manuscript after the text and before the 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.

Competency-based learning in cardiovascular medicine addresses the 6 domains promulgated by the 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) (http://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/products-and-resources/competencies). Authors are asked to consider the clinical implications of their report and identify applications in one or more 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;299:3140-8). 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 (http://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.

**Clinical Trials**
EXAMPLE 1: For a Clinical Trial [N Engl J Med 2012;367:2375-84]:

**PERSPECTIVES**
Competency in Medical Knowledge: CABG surgery is the preferred method of revascularization for patients with diabetes and multivessel coronary artery disease.

Competency in Patient Care: The diabetic patient with coronary symptomatology, prior to the diagnostic catheterization, should be made aware that if multivessel disease is identified and intervention is indicated, surgical consultation should be entertained.

Translational Outlook 1: Although this is a relatively short-term study (median of 3.8 years), longer-term follow up of FREEDOM will lead to better understanding of the comparative benefit by CABG, specifically on mortality.

Translational Outlook 2: Compliance to medication is nonsatisfactory in patients with coronary artery disease. Comparing the compliance of FREEDOM patients taking a "polypill" approach (including aspirin, statin, and an angiotensin-converting enzyme inhibitor) with the compliance of patients treated conventionally with individual agents should be undertaken.

**Translational Science Studies**

**PERSPECTIVES**
Competency in Medical Knowledge: Inflammation is one of the major determinants of atherosclerotic plaque instability. Positron emission tomography with F18-labeled FDG has been employed for the identification of the macrophages in high-risk patients. Imaging with mannose, the isomer of glucose, may have an advantage because a subset of macrophages in high-risk plaques develop mannose receptors.

Translational Outlook 1: Although circulating biomarkers of inflammation, such as hs-CRP, provide reliable information of systemic inflammation, detection of inflammation at the plaque level may allow identification of the high-risk plaques.

Translational Outlook 2: Plaque imaging with sugars, although feasible, must in a randomized fashion investigate whether treatment of individual high-risk plaques would favorably influence major adverse outcomes in atherosclerotic disease.

**Meta-Analysis or Review Article**
EXAMPLE 3: For a Meta-Analysis or a Review Article [Lancet 2014;383:955-62]:

**PERSPECTIVES**
Competency in Medical Knowledge 1: Selection of antithrombotic therapy for prevention of thromboembolism in patients with atrial fibrillation must consider several clinical factors, including the patient's values and preferences.
Competency in Medical Knowledge 2: The oral direct thrombin inhibitor, dabigatran, and factor Xa inhibitors, rivaroxaban, apixaban, and edoxaban (so-called novel oral anticoagulants or NOACs) avoid the dietary restrictions and need for routine coagulation monitoring that are cumbersome aspects of anticoagulation with vitamin K antagonists such as warfarin.

Competency in Patient Care: All 3 NOACs currently approved for clinical use in the United States represent advances over warfarin because of their more predictable pharmacological profiles, fewer drug interactions, and considerably lower risk of intracranial bleeding than warfarin, but these advantages come at greater monetary cost, and there is presently no approved antidote or validated strategy rapid reversal of anticoagulation induced by any of the NOACs.

Competency in Interpersonal & Communication Skills: It is important to discuss the available options with patients who are candidates for the newer agents.

Translational Outlook 1: The mechanism by which each of the NOACs evaluated to date cause less intracerebral hemorrhage than well-managed warfarin anticoagulation requires further investigation.

Translational Outlook 2: Additional research is needed to understand the safety and efficacy of the NOACs, alone or in combination in patients with mechanical prosthetic heart valves to overcome the toxicity of this type of anticoagulation in the limited studies undertaken to date that contraindicate their use in patients who have undergone heart valve replacement with mechanical prostheses.

REFERENCES

Identify references in the text by numerals in parentheses on the line. The reference list should be typed 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.

Use Index Medicus (National Library of Medicine) abbreviations for journal titles. It is important to note that when citing an article from the Journal of the American College of Cardiology, the correct citation format is J Am Coll Cardiol.

Use the following style and punctuation for references:


FIGURE LEGENDS

All figures must have a number, title, and caption. Figures should be cited in numerical order in the text. Supplemental figures should be cited as “Online Figure 1, Online Figure 2,” etc. Figure titles should be short and followed by a 2 to 3 sentence caption. Your Central Illustration, if not an existing figure, should be listed first. If the figure has been previously published, cite the figure source in the legend. All abbreviations used in the figure should be identified in alphabetical order at the end of each legend (see also Figures).
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. Abbreviations should be listed in a footnote under the table in alphabetical order. Footnote symbols should appear in the following order: *, †, ‡, §, ||, #, **, ††, etc. If previously published tables are used, written permission from the original publisher/author is required. Cite the source of the table in the footnote.

CENTRAL ILLUSTRATION
All Original Investigations, State-of-the-Art Reviews, and Review Topics of the Week should 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. This illustration must be accompanied by a legend (title and caption). The Central Illustration legend should be listed first in your list of figure legends, unless it is an existing figure.

FIGURES
Figures and graphs should be provided in EPS or TIF format. Color images must be at least 300 DPI. Gray scale images should be at least 300 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 legends should be typed double-spaced on pages separate from the text. 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 is required. See STM Guidelines for details: http://www.stmassoc.org/permissions-guidelines. If the figure has been previously published, cite the figure source in the legend.

Graphics software, such as Photoshop and Illustrator, should be used to create the art, but not presentation software such as Powerpoint, CorelDraw, or Harvard Graphics. Line art (black and white or color) and combinations of grayscale images and line art should be at least 1200 DPI. Lettering should be of sufficient size to be legible after reduction for publication. The optimal size is 12 points. Symbols should be of a similar size. Figures should be no smaller than 13 cm x 18 cm (500 x 700). Decimals, lines, and other details must be strong enough for reproduction. Use only black and white or grayscale 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.

VIDEOS
Inclusion of videos in the published paper is at the discretion of the editors. Video submissions for viewing online should be one of the following formats: AudioVideo Interleave (.avi), MPEG (.mpg), or QuickTime (.qt, .mov). AVI files can be displayed via Windows Media Player. MPEG files can be displayed via Windows Media Player: http://www.microsoft.com/windows/windowsmedia/players.aspx. QuickTime files require QuickTime software (free) from Apple: http://www.apple.com/quicktime/download/index.html. Videos should be brief whenever possible (less than 5 minutes). Longer 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 and submitted in that form. It is advisable to compress files to use as little bandwidth as possible and to avoid overly long download times. Video files should be no larger than 5 megabytes. A video legends page giving a brief description of the video content should be provided for each video.

EDITORIAL POLICIES
All manuscripts must be submitted online at http://www.jaccsubmit.org.

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 and most recently updated in December 2016.
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.

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.

Relationship with Industry Policy
All 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. All relevant relationships with industry, disclosures, and sources of funding for the work should be acknowledged 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 relationship with industry exists, please state this on the title page.

All forms are now signed and submitted electronically. Once a manuscript is accepted, the authors will be sent links to complete the electronic Relationship with Industry forms. Elsevier now handles copyright for the journal. 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 at http://www.jaccsubmit.org. Each author will be alerted if his or her form has not been completed by the deadline. Please note that copyright is now handled by the publisher and no copyright form will be sent to you until the manuscript has been sent to the publisher. Only authors appearing on the final title page will be sent a form. YOU CANNOT ADD AUTHORS AFTER ACCEPTANCE OR ON PROOFS.

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.

**Review Process**

JACC uses a single-blind peer-review system, meaning that the authors are blinded to the identity of the reviewers and as a general rule, although there are exceptions, the reviewers are blinded to each other. While the JACC Associate Editor will be identified at the end of the review process, all correspondence concerning a manuscript should be addressed to the JACC editorial staff at jacc@acc.org. At initial submission, a manuscript is reviewed by editorial staff for compliance with journal style and to make sure the submission is clear and legible for reviewers and editors. Once the editorial staff have checked in the paper, it is assigned to the JACC Editor-in-Chief, who will assign it to an Associate Editor. The Associate Editor then determines if it should be sent for peer review or if it is not of sufficient priority for JACC. All reviewers and editors are asked to report any potential conflicts of interest, and when those exist the manuscript is reassigned to a different editor or reviewer. Once 2 reviews have been completed, the submission is reviewed by all JACC associate editors in a weekly meeting. The group then comes to one of the four decisions below:

- **Accept.** The manuscript is acceptable for publication in its current form. However, minor edits may be made by the JACC medical editors, illustrators, or the publisher, and authors will need to work with the appropriate contacts to ensure these changes are incorporated post-acceptance. **Minor Revision.** It is important to note that this decision does not guarantee acceptance. However, less significant edits are required than a Revision Required decision. **Revision Required.** The manuscript is unacceptable for publication in its current form. However, the editors are willing to reconsider a thoroughly revised manuscript. The authors must respond to all reviewer and editor comments and the submission will be re-reviewed and treated as a new submission. **Reject.** The manuscript is unacceptable for publication and/or is not an appropriate fit for JACC.

**Permissions**

If a figure/table is reprinted or adapted from a previously published work, permission must be obtained from that publisher and sent to the editorial office. Please also see Figures.

**Authorship**

Each author must have contributed significantly to the submitted work. If authorship is attributed to a group (either solely or in addition to one or more individual authors), all members of the group must meet the full criteria and requirements for authorship. Each individual author should be listed on the title page and in the online submission system. If you have an author group, you may list it in an online appendix. To save space, if group members have been previously published, the article should be referenced rather than reprinting the list of names. The editors consider authorship to include all of the following:

- Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
- Drafting the work or revising it critically for important intellectual content; AND
- Final approval of the version to be published; AND
- 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.

Participation solely in the collection of data does not justify authorship but may be appropriately acknowledged in the Acknowledgment section. Authors must also agree to the following 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, is stated; and 6) the authors have provided both an illustration and the appropriate material for inclusion in the box that appears after the “Conclusions” section in the manuscript. Exceptions must be explained.

**Expedited Review**

In order for Original Investigations to be considered for expedited review, they should report important original findings of high-potential clinical impact or research significance. Authors should request expedited review in their cover letter at the time of submission. The editors commit to a decision regarding suitability for expedited publication processing within 2 days, and an initial decision within
14 days. Those manuscripts not deemed appropriate for the expedited publication track will be considered according to the standard review process. We always inform authors whether we are able to offer expedited review. An agreement to provide expedited review does not guarantee acceptance.

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 http://www.icmje.org. In the Methods section, 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 more sophisticated statistical methods (beyond t tests, chi-square, simple linear regression), specify the statistical package, version number, and nondefault 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.”

CONTACTING US
Editorial Office at Heart House
For enquiries relating to submitted articles or to articles currently under review, please contact the JACC editorial office at jacc@acc.org. All manuscripts must be submitted online at http://www.jaccsubmit.org. Authors who are having trouble may email jacc@acc.org or call the number below.
The mailing address for the JACC editorial office and the Editor-in-Chief is:
Valentin Fuster, MD, PhD, MACC
Editor-in-Chief, Journal of the American College of Cardiology
Heart House, 2400 N Street NW
Washington, DC, 20037
Phone: 202-375-6136
Fax: 202-375-6819

OPEN ACCESS
While this journal does not ordinarily have publication charges, authors can now opt to make their articles available to all (including non-subscribers) via the ScienceDirect platform, which carries a fee of US $3,000. (For further information on open access, visit http://www.elsevier.com/about/open-access/open-access-options.) To avoid any perception of conflict of interest, you can only make this choice after receiving notification that your article has been accepted for publication. The fee excludes taxes and other potential costs such as color charges. In some cases, institutions and funding bodies have entered into agreement with Elsevier to meet these fees on behalf of their authors. Details of these agreements are available at https://www.elsevier.com/fundingbodies. Authors of accepted articles who wish to take advantage of this option should complete and submit the order form, which is available at https://www.elsevier.com/openaccessform.pdf. Whatever access option you choose, you retain many rights as an author, including the right to post a revised personal version of your article on your own website. More information can be found here: http://www.elsevier.com/authorsrights.

Your publication choice will have no effect on the peer review process or acceptance of submitted articles.

PERMISSIONS
No part of materials published in JACC may be reproduced without written permission of the publisher. You may be able to obtain permission to republish content for individual articles through RightsLink. Some materials qualify for gratis usage. See STM Guidelines for details: http://www.stm-assoc.org/permissions-guidelines/. Permission may be sought directly from Elseviers Global Rights Department. Phone: 215-239-3804 or 44-1865-843-830. Fax: 44-1865-853-333. Requests also may be completed online via the Elsevier site: http://www.elsevier.com/about/policies/author-agreement/obtaining-permission.

Elsevier supports responsible sharing
Find out how you can share your research published in Elsevier journals.

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 green 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.

**LANGUAGE SERVICES**

*English language help service:* Upon request, Elsevier will direct authors to an agent who can check and improve the English of their paper (before submission). Please visit our Support Center for further information.

**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 and Zotero, as well as EndNote. Using the word processor plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal’s style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide. 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.

**AUTHOR INQUIRIES**

For inquiries relating to submitted articles or to articles currently under review, please contact the JACC editorial office at jaccsd@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 contact Elsevier Health Sciences Division, Subscription Customer Service, 3251 Riverport Lane, Maryland Heights, MO 63043. Tel: 1-800-654-2452, E-mail: journalscustomerservice-usa@elsevier.com.

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