

Circulation

An American Heart
Association Journal

July 10, 2018
Volume 138
Number 2

FRAME OF REFERENCE

On My Mind

- Argument for Prophylactic, Catheter-Based Repair of Mitral Regurgitation** 125
Paul Sorajja, MD; Gorav Ailawadi, MD

Perspective

- Age, Blood Pressure Targets, and Guidelines: Rift Between Those Who Preach, Those Who Teach, and Those Who Treat?** 128
Franz H. Messerli, MD; Sripal Bangalore, MD; Adrian W. Messerli, MD

ORIGINAL RESEARCH ARTICLES

- Inflammatory and Cholesterol Risk in the FOURIER Trial** 131
Erin A. Bohula, MD, DPhil; Robert P. Giugliano, MD, SM; Lawrence A. Leiter, MD; Subodh Verma, MD; Jeong-Gun Park, PhD; Peter S. Sever, MD; Armando Lira Pineda, MD; Narimon Honarpour, MD; Huei Wang, PhD; Sabina A. Murphy, MPH; Anthony Keech, MD; Terje R. Pedersen, MD; Marc S. Sabatine, MD, MPH

- Residual Inflammatory Risk on Treatment With PCSK9 Inhibition and Statin Therapy** 141
Aruna D. Pradhan, MD, MPH; Aaron W. Aday, MD; Lynda M. Rose, MS; Paul M Ridker, MD, MPH

Editorial

- Low-Grade Inflammation Modifies Cardiovascular Risk Even at Very Low LDL-C Levels: Are We Aiming for a Dual Target Concept?** 150
Wolfgang Koenig, MD

- How Do Resuscitation Teams at Top-Performing Hospitals for In-Hospital Cardiac Arrest Succeed?: A Qualitative Study** 154
Brahmajee K. Nallamothu, MD, MPH; Timothy C. Guetterman, PhD; Molly Harrod, PhD; Joan E. Kellenberg, MS, MPH; Jessica L. Lehrich, MS; Steven L. Kronick, MD, MS; Sarah L. Krein, PhD, RN; Theodore J. Iwashyna, MD, PhD; Sanjay Saint, MD, MPH; Paul S. Chan, MD, MSc

Editorial

- Learning From Diversity** 164
Elizabeth H. Bradley, PhD

- Single-Cell Sequencing of the Healthy and Diseased Heart Reveals Cytoskeleton-Associated Protein 4 as a New Modulator of Fibroblasts Activation** 166
Monika M. Gladka, PhD; Bas Molenaar, MSc; Hesther de Ruiter, BS; Stefan van der Elst, BS; Hoyee Tsui, PhD; Danielle Versteeg, BS; Grégory P.A. Lacraz, PhD; Manon M.H. Huijbers, PhD; Alexander van Oudenaarden, PhD; Eva van Rooij, PhD

- Cardioprotective Role of Myeloid-Derived Suppressor Cells in Heart Failure** 181
Ling Zhou, MD, PhD; Kun Miao, MD, PhD; Bingjiao Yin, PhD; Huaping Li, MD, PhD; Jiahui Fan, MD; Yazhen Zhu, MD; Hongping Ba, PhD; Zunyue Zhang, MD; Fang Chen, MD; Jing Wang, PhD; Chunxia Zhao, MD, PhD; Zhuoya Li, MD, PhD; Dao Wen Wang, MD, PhD

On the Cover: *Circulation* Doodle

This month's doodle commemorates the July 1960 article by Kouwenhoven et al, published in the *Journal of the American Medical Association*, which was the first report of closed-chest cardiac massage. Among 20 patients, there was an overall permanent survival rate of 70%. According to the authors, "Anyone, anywhere, can now initiate cardiac resuscitative procedures. All that is needed are two hands." (Kouwenhoven WB, Jude JR, Knickerbocker GG. Closed-chest cardiac massage. *JAMA*. 1960;173:1064-7).

For more information about the doodle, go to <http://circ.ahajournals.org/content/circulation-cover-doodle>.



PODCAST



CME



OPEN ACCESS



BRIDGING DISCIPLINES

STATE OF THE ART

PRIMER

- Sex Differences in Cardiovascular Pathophysiology: Why Women Are Overrepresented in Heart Failure With Preserved Ejection Fraction** 198

Anna L. Beale, MBBS; Philippe Meyer, MD; Thomas H. Marwick, MBBS, PhD; Carolyn S.P. Lam, MBBS, PhD; David M. Kaye, MBBS, PhD

THE PULSE

Cardiology News

- From the American College of Cardiology 67th Annual Scientific Sessions** 206

Bridget M. Kuehn

CORRESPONDENCE

Research Letter

- Trends in Apolipoprotein B, Non-High-Density Lipoprotein, and Low-Density Lipoprotein for Adults 60 Years and Older by Use of Lipid-Lowering Medications: United States, 2005 to 2006 Through 2013 to 2014** 208

Margaret D. Carroll, MSPH; Michael E. Mussolino, PhD; Michael Wolz, MA; Pothur R. Srinivas, PhD

Correspondence

- Letter by Lei Wang and Yun-Tao Zhao Regarding Article, “Young Male With Incessantly Wide Complex Tachycardia: What Is the Substrate of the Arrhythmia?”** 211

Lei Wang, MD; Yun-Tao Zhao, MD, PhD

- Response by Miranda-Arboleda et al to Letter Regarding Article, “Young Male With Incessantly Wide Complex Tachycardia: What Is the Substrate of the Arrhythmia?”** 212

Andrés F. Miranda-Arboleda, MD; Rafael Correa, MD; Juan D. Ramirez, MD

- Letter by Kikkert et al Regarding Article, “Effect of Intravenous Fentanyl on Ticagrelor Absorption and Platelet Inhibition Among Patients Undergoing Percutaneous Coronary Intervention: The PACIFY Randomized Clinical Trial (Platelet Aggregation With Ticagrelor Inhibition and Fentanyl)”** 214

Wouter J. Kikkert, MD, PhD; Ronak Delewi, MD, PhD; Bimmer E.P.M. Claessen, MD, PhD

- Response by Ibrahim et al to Letter Regarding Article, “Effect of Intravenous Fentanyl on Ticagrelor Absorption and Platelet Inhibition Among Patients Undergoing Percutaneous Coronary Intervention: The PACIFY Randomized Clinical Trial (Platelet Aggregation With Ticagrelor Inhibition and Fentanyl)”** 216

Khalil Ibrahim, MD; Rohan Shah, MD; John W. McEvoy, MBCh, MEHP, MHS

- Letter by Calabrò et al Regarding Article, “Low-Density Lipoprotein Cholesterol Lowering With Evolocumab and Outcomes in Patients With Peripheral Artery Disease: Insights From the FOURIER Trial (Further Cardiovascular Outcomes Research With PCSK9 Inhibition in Subjects With Elevated Risk)”** 218

Paolo Calabrò, MD, PhD; Felice Gragnano, MD; Arturo Cesaro, MD

- Letter by Alkhalil Regarding Article, “Low-Density Lipoprotein Cholesterol Lowering With Evolocumab and Outcomes in Patients With Peripheral Artery Disease: Insights From the FOURIER Trial (Further Cardiovascular Outcomes Research With PCSK9 Inhibition in Subjects With Elevated Risk)”** 220

Mohammad Alkhalil, MD, MRCP

- Response by Bonaca and Sabatine to Letters Regarding Article, “Low-Density Lipoprotein Cholesterol Lowering With Evolocumab and Outcomes in Patients With Peripheral Artery Disease: Insights From the FOURIER Trial (Further Cardiovascular Outcomes Research With PCSK9 Inhibition in Subjects With Elevated Risk)”** 222

Marc P. Bonaca, MD, MPH; Marc S. Sabatine, MD, MPH



PODCAST



CME



OPEN ACCESS



BRIDGING DISCIPLINES

CLINICAL STATEMENTS AND GUIDELINES

AHA Scientific Statement

Health Literacy and Cardiovascular Disease: Fundamental Relevance to Primary and Secondary Prevention: A Scientific Statement From the American Heart Association

e48

Jared W. Magnani, MD, MSc, FAHA, Chair; Mahasin S. Mujahid, PhD, MS, FAHA; Herbert D. Aronow, MD, MPH; Crystal W. Cené, MD, MPH, FAHA; Victoria Vaughan Dickson, PhD, RN, FAHA; Edward Havranek, MD, FAHA; Lewis B. Morgenstern, MD, FAHA; Michael K. Paasche-Orlow, MD, MS, MPH; Amy Pollak, MD; Joshua Z. Willey, MD, FAHA; On behalf of the American Heart Association Council on Epidemiology and Prevention; Council on Cardiovascular Disease in the Young; Council on Cardiovascular and Stroke Nursing; Council on Peripheral Vascular Disease; Council on Quality of Care and Outcomes Research; and Stroke Council



PODCAST



CME



OPEN ACCESS



BRIDGING DISCIPLINES

CIRCULATION (ISSN 0009-7322) is published weekly except June and December by Wolters Kluwer Health, Inc. at 14700 Citicorp Drive, Bldg 3, Hagerstown, MD 21742. Business offices are located at Two Commerce Square, 2001 Market Street, Philadelphia, PA 19103. Production offices are located at 351 West Camden Street, Baltimore, MD 21201-2436. Individuals may subscribe for their personal use at the following rates for print subscriptions: \$225 for AHA/ASA Domestic and International Members (excluding General Membership level), or \$693 for domestic non-members and \$1061 for international non-members. AHA membership information can be found online at professional.heart.org. Periodicals postage paid at Hagerstown, MD, and additional mailing offices. POSTMASTER: Send address changes to CIRCULATION, American Heart Association, Wolters Kluwer Health, Inc., PO Box 1610, Hagerstown, MD 21740.

138 (2)

Circulation. 2018;138:e48-223

Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2018 American Heart Association, Inc. All rights reserved.
Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the
World Wide Web at:

<http://circ.ahajournals.org/content/138/2.citation>

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in *Circulation* can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the [Permissions and Rights Question and Answer](#) document.

Reprints: Information about reprints can be found online at:
<http://www.lww.com/reprints>

Subscriptions: Information about subscribing to *Circulation* is online at:
<http://circ.ahajournals.org/subscriptions/>