
Hypertension

Volume 70 Number 3 September 2017

Clinical Implications 469

Acknowledgment of Reviewers 470

Recent Advances in Hypertension

Recent Advances in Neurogenic Hypertension: Dietary Salt, Obesity, and Inflammation

Sean D. Stocker, Brian J. Kinsman, Alan F. Sved 474

Brief Review

Report of the National Heart, Lung, and Blood Institute Working Group on the Role of Microbiota in Blood Pressure Regulation: Current Status and Future Directions

Mohan K. Raizada, Bina Joe, Nathan S. Bryan, Eugene B. Chang, Floyd E. Dewhirst, Gary G. Borisy, Zorina S. Galis, Wendy Henderson, Pedro A. Jose, Christian J. Ketchum, Johanna W. Lampe, Carl J. Pepine, Jennifer L. Pluznick, Dominic Raj, Douglas R. Seals, Rachel A. Gioscia-Ryan, W.H. Wilson Tang, Young S. Oh 479

Editorial Commentaries

Early-Life Detection of Hypertension Risks: Implications for Clinical Practice and Research

Daniel T. Lackland 486

Expanding Clinical Phenotype of Fibromuscular Dysplasia

Jeffrey W. Olin 488

Development of PKG I α (Protein Kinase G I α)-Dimerizing Antihypertensive Drugs: Are We Standing at the Shore of the Rubicon?

Paula K. Bautista-Niño, Anton J.M. Roks, A.H. Jan Danser 490

Pressure Paradox: High Pulse Pressure and Low Mean Pressure Are Favorable Features in Young Adults

Michael F. O'Rourke, Audrey Adji 493

Vitamin D, Hypertension, and Ischemic Stroke: An Unresolved Relationship

Ronen Levi-Vardi, Yoram Yagil 496

Original Articles

Epidemiology/Population

Vitamin D, Hypertension, and Ischemic Stroke in 116 655 Individuals From the General Population: A Genetic Study

Shoaib Afzal, Børge G. Nordestgaard 499

[Editorial Commentary, p 496](#) • [Online Data Supplement](#)

Hypertension (ISSN 0194-911X) is published monthly 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 \$582 for domestic non-members and \$750 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 HYPERTENSION, American Heart Association, Wolters Kluwer Health, Inc., PO Box 1610, Hagerstown, MD 21740.

Blood Pressure Trajectories and the Risk of Intracerebral Hemorrhage and Cerebral Infarction: A Prospective Study <i>Weijuan Li, Cheng Jin, Anand Vaidya, Yuntao Wu, Kathryn Rexrode, Xiaoming Zheng, Mahmut E. Gurol, Chaoran Ma, Shouling Wu, Xiang Gao</i>	508
---	-----

• [Online Data Supplement](#)

Heart

Control of Pathological Cardiac Hypertrophy by Transcriptional Corepressor IRF2BP2 (Interferon Regulatory Factor-2 Binding Protein 2) <i>Jing Fang, Tianyu Li, Xuehai Zhu, Ke-Qiong Deng, Yan-Xiao Ji, Chun Fang, Xiao-Jing Zhang, Jun-Hong Guo, Peng Zhang, Hongliang Li, Xiang Wei</i>	515
--	-----

• [Online Data Supplement](#)

Arterial Stiffness

Aortic Arch Pulse Wave Velocity Assessed by Magnetic Resonance Imaging as a Predictor of Incident Cardiovascular Events: The MESA (Multi-Ethnic Study of Atherosclerosis) <i>Yoshiaki Ohyama, Bharath Ambale-Venkatesh, Chikara Noda, Jang-Young Kim, Yutaka Tanami, Gisela Teixeira-Tura, Atul R. Chugh, Alban Redheuil, Chia-Ying Liu, Colin O. Wu, W. Gregory Hundley, David A. Bluemke, Eliseo Guallar, Joao A.C. Lima</i>	524
--	-----

• [Online Data Supplement](#)

Influence of Child and Adult Elevated Blood Pressure on Adult Arterial Stiffness: The Cardiovascular Risk in Young Finns Study <i>Heikki Aatola, Teemu Koivistoinen, Heikki Tuominen, Markus Juonala, Terho Lehtimäki, Jorma S.A. Viikari, Olli T. Raitakari, Mika Kähönen, Nina Hutri-Kähönen</i>	531
--	-----

[Editorial Commentary, p 486](#) • [Online Data Supplement](#)

Pulse Pressure and Cardiovascular Events

Office Pulse Pressure Is a Predictor of Favorable Outcome in Young- to Middle-Aged Subjects With Stage 1 Hypertension <i>Francesca Saladini, Claudio Fania, Lucio Mos, Adriano Mazzer, Edoardo Casiglia, Paolo Palatini</i>	537
---	-----

[Editorial Commentary, p 493](#) • [Online Data Supplement](#)

Kidney

Increased Perfusion Pressure Drives Renal T-Cell Infiltration in the Dahl Salt-Sensitive Rat <i>Louise C. Evans, Galina Petrova, Theresa Kurth, Chun Yang, John D. Bukowy, David L. Mattson, Allen W. Cowley Jr</i>	543
---	-----

• [Online Data Supplement](#)

Hypertension and VEGF (Vascular Endothelial Growth Factor) Receptor Tyrosine Kinase Inhibition: Effects on Renal Function <i>Brian C. Boursiquot, Emily C. Zabor, Ilya G. Glezerman, Edgar A. Jaimes</i>	552
--	-----

Renin–Angiotensin System

Genetic Interference With Endothelial PPAR-γ (Peroxisome Proliferator–Activated Receptor-γ) Augments Effects of Angiotensin II While Impairing Responses to Angiotensin 1–7 <i>T. Michael De Silva, Chunyan Hu, Dale A. Kinzenbaw, Mary L. Modrick, Curt D. Sigmund, Frank M. Faraci</i>	559
---	-----

• [Online Data Supplement](#)

Blood Pressure Lowering and Safety Improvements With Liver Angiotensinogen Inhibition in Models of Hypertension and Kidney Injury <i>Adam E. Mullick, Steve T. Yeh, Mark J. Graham, Jeffery A. Engelhardt, Thazha P. Prakash, Rosanne M. Crooke</i>	566
---	-----

• [Online Data Supplement](#)

New Drugs for Hypertension

Proof of Principle for a Novel Class of Antihypertensives That Target the Oxidative Activation of PKG I α (Protein Kinase G I α)

Joseph R. Burgoyne, Oleksandra Prysyazhna, Daniel A. Richards, Philip Eaton **OPEN** 577

[Editorial Commentary, p 490](#) • [Online Data Supplement](#)

Vasorelaxation to the Nitroxyl Donor Isopropylamine NONOate in Resistance Arteries Does Not Require Perivascular Calcitonin Gene-Related Peptide

Alice M.H. Pinkney, Hamish A.L. Lemmey, Kim A. Dora, Christopher J. Garland 587

• [Online Data Supplement](#)

Preeclampsia

Low Soluble Fms-Like Tyrosine Kinase-1, Endoglin, and Endothelin-1 Levels in Women With Confirmed or Suspected Preeclampsia Using Proton Pump Inhibitors

Langeza Saleh, Raaho Samantar, Ingrid M. Garrelds, Anton H. van den Meiracker, Willy Visser, A.H. Jan Danser 594

• [Online Data Supplement](#)

MicroRNA-210 Targets Ten-Eleven Translocation Methylcytosine Dioxygenase 1 and Suppresses Pregnancy-Mediated Adaptation of Large Conductance Ca²⁺-Activated K⁺ Channel Expression and Function in Ovine Uterine Arteries

Xiang-Qun Hu, Chiranjib Dasgupta, Daliao Xiao, Xiaohui Huang, Shumei Yang, Lubo Zhang 601

• [Online Data Supplement](#)

Alzheimer Disease and Hypertension

Inactivation of Nitric Oxide Synthesis Exacerbates the Development of Alzheimer Disease Pathology in APPS1 Mice (Amyloid Precursor Protein/Presenilin-1)

Diana Cifuentes, Marine Poittevin, Philippe Bonnin, Anta Ngkelo, Nathalie Kubis, Tatyana Merkulova-Rainon, Bernard I. Lévy 613

• [Online Data Supplement](#)

Metabolic Syndrome

Complement Factor B Is a Determinant of Both Metabolic and Cardiovascular Features of Metabolic Syndrome

Philip M. Coan, Marjorie Barrier, Neza Alfazema, Roderick N. Carter, Sophie Marion de Procé, Xaquín C. Dopico, Ana Garcia Diaz, Adrian Thomson, Lucy H. Jackson-Jones, Ben Moyon, Zoe Webster, David Ross, Julie Moss, Mark J. Arends, Nicholas M. Morton, Timothy J. Aitman **OPEN** 624

• [Online Data Supplement](#)

Nitrites and Nitrates

Conjugated Linoleic Acid Modulates Clinical Responses to Oral Nitrite and Nitrate

Kara S. Hughan, Stacy Gelhaus Wendell, Meghan Delmastro-Greenwood, Nicole Helbling, Catherine Corey, Landon Bellavia, Gopal Potti, George Grimes, Bret Goodpaster, Daniel B. Kim-Shapiro, Sruti Shiva, Bruce A. Freeman, Mark T. Gladwin 634

• [Online Data Supplement](#)

Refractory Hypertension

White-Coat Effect Is Uncommon in Patients With Refractory Hypertension

Mohammed Siddiqui, Eric K. Judd, Suzanne Oparil, David A. Calhoun 645

Fibromuscular Dysplasia

High Prevalence of Multiple Arterial Bed Lesions in Patients With Fibromuscular Dysplasia: The ARCADIA Registry (Assessment of Renal and Cervical Artery Dysplasia)

Pierre-François Plouin, Jean-Philippe Baguet, Frédéric Thony, Olivier Ormezzano, Arshid Azarine, François Silhol, Catherine Oppenheim, Béatrice Bouhanick, Louis Boyer, Alexandre Persu, Frank Hammer, Philippe Gosse, Claire Mounier-Vehier, Claire Le Hello, Xavier Jeunemaitre, Michel Azizi, Laurence Amar, Gilles Chatellier, Elie Mousseaux, Emmanuel Touzé; and the ARCADIA Investigators 652

Editorial Commentary, p 488 • **Online Data Supplement**

Genomics

Novel Blood Pressure Locus and Gene Discovery Using Genome-Wide Association Study and Expression Data Sets From Blood and the Kidney

Louise V. Wain, Ahmad Vaez, Rick Jansen, Roby Joehanes, Peter J. van der Most, A. Mesut Erzurumluoglu, Paul F. O'Reilly, Claudia P. Cabrera, Helen R. Warren, Lynda M. Rose, Germaine C. Verwoert, Jouke-Jan Hottenga, Rona J. Strawbridge, Tonu Esko, Dan E. Arking, Shih-Jen Hwang, Xiuqing Guo, Zoltan Kutalik, Stella Trompet, Nick Shrine, Alexander Teumer, Janina S. Ried, Joshua C. Bis, Albert V. Smith, Najaf Amin, Ilja M. Nolte, Leo-Pekka Lyytikäinen, Anubha Mahajan, Nicholas J. Wareham, Edith Hofer, Peter K. Joshi, Kati Kristiansson, Michela Traglia, Aki S. Havulinna, Anuj Goel, Mike A. Nalls, Siim Sõber, Dragana Vuckovic, Jian'an Luan, Fabiola Del Greco M., Kristin L. Ayers, Jaume Marrugat, Daniela Ruggiero, Lorna M. Lopez, Teemu Niiranen, Stefan Enroth, Anne U. Jackson, Christopher P. Nelson, Jennifer E. Huffman, Weihua Zhang, Jonathan Marten, Ilaria Gandin, Sarah E. Harris, Tatijana Zemunik, Yingchang Lu, Evangelos Evangelou, Nabi Shah, Martin H. de Borst, Massimo Mangino, Bram P. Prins, Archie Campbell, Ruifang Li-Gao, Ganesh Chauhan, Christopher Oldmeadow, Gonçalo Abecasis, Maryam Abedi, Caterina M. Barbieri, Michael R. Barnes, Chiara Batini, John Beilby; BIOS Consortium; Tineka Blake, Michael Boehnke, Erwin P. Bottinger, Peter S. Braund, Morris Brown, Marco Brumat, Harry Campbell, John C. Chambers, Massimiliano Cocca, Francis Collins, John Connell, Heather J. Cordell, Jeffrey J. Damman, Gail Davies, Eco J. de Geus, Renée de Mutsert, Joris Deelen, Yusuf Demirkale, Alex S.F. Doney, Marcus Dörr, Martin Farrall, Teresa Ferreira, Mattias Frånberg, He Gao, Vilmantas Giedraitis, Christian Gieger, Franco Giulianini, Alan J. Gow, Anders Hamsten, Tamara B. Harris, Albert Hofman, Elizabeth G. Holliday, Jennie Hui, Marjo-Riitta Jarvelin, Åsa Johansson, Andrew D. Johnson, Pekka Jousilahti, Antti Jula, Mika Kähönen, Sekar Kathiresan, Kay-Tee Khaw, Ivana Kolcic, Seppo Koskinen, Claudia Langenberg, Marty Larson, Lenore J. Launer, Benjamin Lehne, David C.M. Liewald; Lifelines Cohort Study; Li Lin, Lars Lind, François Mach, Chrysovalanto Mamasoula, Cristina Menni, Borbala Mifsud, Yuri Milaneschi, Anna Morgan, Andrew D. Morris, Alanna C. Morrison, Peter J. Munson, Priyanka Nandakumar, Quang Tri Nguyen, Teresa Nutile, Albertine J. Oldehinkel, Ben A. Oostra, Elin Org, Sandosh Padmanabhan, Aarno Palotie, Guillaume Paré, Alison Pattie, Brenda W.J.H. Penninx, Neil Poulter, Peter P. Pramstaller, Olli T. Raitakari, Meixia Ren, Kenneth Rice, Paul M. Ridker, Harriëtte Riese, Samuli Ripatti, Antonietta Robino, Jerome I. Rotter, Igor Rudan, Yasaman Saba, Aude Saint Pierre, Cinzia F. Sala, Antti-Pekka Sarin, Reinhold Schmidt, Rodney Scott, Marc A. Seelen, Denis C. Shields, David Siscovick, Rossella Sorice, Alice Stanton, David J. Stott, Johan Sundström, Morris Swertz, Kent D. Taylor, Simon Thom, Ioanna Tzoulaki, Christophe Tzourio, André G. Uitterlinden; Understanding Society Scientific Group; Uwe Völker, Peter Vollenweider, Sarah Wild, Gonneke Willemsen, Alan F. Wright, Jie Yao, Sébastien Thériault, David Conen, John Attia, Peter Sever, Stéphanie Debette, Dennis O. Mook-Kanamori, Eleftheria Zeggini, Tim D. Spector, Pim van der Harst, Colin N.A. Palmer, Anne-Claire Vergnaud, Ruth J.F. Loos, Ozren Polasek, John M. Starr, Giorgia Grotto, Caroline Hayward, Jaspal S. Kooner, Cecilia M. Lindgren, Veronique Vitart, Nilesh J. Samani, Jaakko Tuomilehto, Ulf Gyllensten, Paul Knekt, Ian J. Deary, Marina Ciullo, Roberto Elosua, Bernard D. Keavney, Andrew A. Hicks, Robert A. Scott, Paolo Gasparini, Maris Laan, YongMei Liu, Hugh Watkins, Catharina A. Hartman, Veikko Salomaa, Daniela Toniolo, Markus Perola, James F. Wilson, Helena Schmidt, Jing Hua Zhao, Terho Lehtimäki, Cornelia M. van Duijn, Vilmundur Gudnason, Bruce M. Psaty, Annette Peters, Rainer Rettig, Alan James, J. Wouter Jukema, David P. Strachan, Walter Palmas, Andres Metspalu, Erik Ingelsson, Dorret I. Boomsma, Oscar H. Franco, Murielle Bochud, Christopher Newton-Cheh, Patricia B. Munroe, Paul Elliott, Daniel I. Chasman, Aravinda Chakravarti, Joanne Knight, Andrew P. Morris, Daniel Levy, Martin D. Tobin, Harold Snieder, Mark J. Caulfield, Georg B. Ehret ★e4

• **Online Data Supplement**

Role of Office Blood Pressure in Diagnosis and Treatment of Hypertension

Moving Beyond Office Blood Pressure to Achieve a Personalized and More Precise Hypertension Management: Which Way to Go?

Gianfranco Parati, Juan Eugenio Ochoa, Grzegorz Bilo ★e20

• [Online Data Supplement](#)

Correction

Correction to: Case of Asymptomatic Carotid Artery Stenosis in a Hypertensive Patient ★e32

★ = Published online only.

Hypertension

JOURNAL OF THE AMERICAN HEART ASSOCIATION



70 (3)

Hypertension. 2017;70:e20-658

Hypertension is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231

Copyright © 2017 American Heart Association, Inc. All rights reserved.

Print ISSN: 0194-911X. Online ISSN: 1524-4563

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

<http://hyper.ahajournals.org/content/70/3>

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in *Hypertension* 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 *Hypertension* is online at:
<http://hyper.ahajournals.org/subscriptions/>