Editorials

719 Cardiac autonomic function and vasomotor symptoms: too much break and not enough accelerator? Puja K. Mehta, MD, FACC, FAHA, Chrisandra L. Shufelt, MD, MS, FACP, and Cathleen Noel Bairey Merz, MD, FACC, FAHA

722 An eHealth approach to treating vasomotor symptoms Pauline M. Maki, PhD, and Jenna Duffecy, PhD

724 Can dance-based aquatic exercise improve functionality in obese women with knee osteoarthritis? Charrlotte Seib, PhD, and Debra Anderson, PhD

CME Activity

726 The North American Menopause Society (NAMS) Continuing Medical Education Activity

Position Statement

728 The 2017 hormone therapy position statement of The North American Menopause Society
This updated, evidence-based hormone therapy position statement of The North American Menopause Society analyzes the benefits and risks of the use of hormone therapy in an individual woman, including age at initiation or time since menopause onset, specific formulations or types of hormone therapy, duration of therapy, the need for monitoring during therapy, potential risks of continuation, and the need for shared decision making. Areas for future needed research also are stipulated.

CME Exam

754 NAMS CME activity self-assessment examination

(continued)
Original Articles

756
Cardiac autonomic function and hot flashes among perimenopausal and postmenopausal women
Carolyn J. Gibson, PhD, MPH, Wendy Berry Mendes, PhD, Michael Schembri, BS, Deborah Grady, MD, MPH, and Alison J. Huang, MD, MAS, MPhil
Abnormalities in cardiac autonomic function have been suggested to play a role in menopausal hot flash pathophysiology. In this examination of resting cardiac autonomic function and self-reported hot flashes among symptomatic peri-and postmenopausal women, greater parasympathetic activation was related to hot flash severity, while sympathetic activation was unrelated to variations in hot flash frequency or severity.

762
An Internet-based cognitive behavioral therapy for treatment-induced menopausal symptoms in breast cancer survivors: results of a pilot study
Vera Atema, MSc, Marieke van Leeuwen, PhD, Hester S.A. Oldenburg, MD, PhD, Marc van Beurden, MD, PhD, Myra S. Hunter, PhD, and Neil K. Aaronson, PhD
Internet-based cognitive behavioral therapy for treatment-induced menopausal symptoms in breast cancer survivors is promising and feasible. The intervention is being further tested in a larger randomized controlled trial.

768
Effects of a dance-based aquatic exercise program in obese postmenopausal women with knee osteoarthritis: a randomized controlled trial
Jesús Casilda-López, MSc, Marie Carmen Valenza, PhD, Irene Cabrera-Martos, PhD, Ana Diaz-Pelegrina, MSc, Maria Paz Moreno-Ramirez, MSc, and Gerald Valenza-Demet, PhD
In this study, aquatic exercise in postmenopausal women with osteoarthritis of the knee (KOA) found that after 8 weeks there were significant improvements in the experimental group.

774
Efficacy of a biobehavioral intervention for hot flashes: a randomized controlled pilot study
Debra L. Barton, PhD, RN, Kelliann C. Fee Schroeder, BSN, Tanima Banerjee, MS, Sherry Wolf, MS, Timothy Z. Keith, PhD, and Gary Elkins, PhD
This is a pilot study evaluating a proof of concept combining an antidepressant with a mind-body intervention for hot flash relief. Results provide insight into current treatments for hot flashes as well as directions for future research.

783
Menopause and big data: Word Adjacency Graph modeling of menopause-related ChaCha data
Janet S. Carpenter, PhD, RN, FAAN, Doyle Groves, BS, Chen X. Chen, PhD, RN, Julie L. Otte, PhD, RN, and Wendy R. Miller, PhD, RN
This paper describes the extent and nature of queries about menopause contained within the ChaCha® question and answer service during a three-year period. Queries from all users (age 13+) and from a subset of female midlife users (aged 40-62) are reported.

789
Association between osteoporosis treatment and severe periodontitis in postmenopausal women
Johelle de S. Passos-Soares, PhD, Maria Isabel P. Vianna, PhD, Isaac S. Gomes-Filho, PhD, Simone S. Cruz, PhD, Mauricio L. Barreto, PhD, Luis F. Adan, PhD, Cassiano K. Rösing, PhD, Soraya C. Trindade, PhD, Eneida M.M. Cerqueira, PhD, and Frank A. Scannapieco, PhD
Women treated for postmenopausal osteoporosis have a lower prevalence of severe periodontitis than women not receiving treatment.
796  
Association of follicle-stimulating hormone levels and risk of type 2 diabetes in older postmenopausal women  
Elizabeth R. Bertone-Johnson, ScD, Jyrki K Virtanen, PhD, Leo Niskanen, MD, Tarja Nurmi, PhD, Kimmo Ronkainen, PhD, Sari Voutilainen, PhD, Jaakko Mursu, PhD, Jussi Kauhanen, MD, PhD, and Tomi-Pekka Tuomainen, MD, PhD  
The association of follicle stimulating hormone (FSH) levels with diabetes and measures of insulin resistance among 588 postmenopausal Finnish women aged 53-73 years and not using hormone therapy at baseline was assessed. Higher postmenopausal FSH levels were associated with lower prevalent and incident type 2 diabetes and fasting insulin levels.

803  
Polycystic ovarian syndrome and the risk of subsequent primary ovarian insufficiency: a nationwide population-based study  
Mei-Lien Pan, PhD, Li-Ru Chen, MD, MSc, Hsiao-Mei Tsao, MSc, and Kuo-Hu Chen, MD, PhD  
Women with a history of polycystic ovarian syndrome (PCOS) have a > 8-fold increased probability of developing primary ovarian insufficiency (POI) compared with women without PCOS. The use of metformin reduces the risk of POI.

810  
Use of a novel fractional CO₂ laser for the treatment of genitourinary syndrome of menopause: 1-year outcomes  
Eric R. Sokol, MD, and Mickey M. Karram, MD  
Fractional CO₂ laser treatment of the vaginal canal using a specially designed probe appears to be a safe and effective treatment for women suffering from the symptoms of vaginal atrophy. This data at one year after treatment, a follow-up to previous work, further confirms the results of the previous investigation.

815  
Time since menopause and skeletal muscle estrogen receptors, PGC-1α, and AMPK  
Young-Min Park, PhD, Rocio I. Pereira, MD, Christopher B. Erickson, BS, Tracy A. Swibas, MS, Chounghun Kang, PhD, and Rachael E. Van Pelt, PhD  
Our preliminary studies of skeletal muscle from early and late postmenopausal women treated with estradiol suggest there may be declines in skeletal muscle estrogen receptors and changes in the estradiol-mediated regulation of cellular energy homeostasis with increasing time since menopause.

824  
Psychometric properties of the medical outcomes study sleep scale in Spanish postmenopausal women  
Noelia Zagalaz-Anula, MHS, Fidel Hita-Contreras, MD, PhD, Antonio Martínez-Amat, PhD, David Cruz-Díaz, PhD, and Rafael Lomas-Vega, PhD  
The Spanish version of the Medical Outcomes Study Sleep Scale is a valid and reliable instrument to assess sleep quality in Spanish postmenopausal women. It discriminates well between good and poor sleepers.

832  
Parity and increased risk of insulin resistance in postmenopausal women: the 2010 Korean National Health and Nutrition Examination Survey  
Jin Hwi Kim, MD, PhD, and Sung Jong Lee, MD, PhD  
Higher parity is significantly associated with insulin resistance in nondiabetic postmenopausal women.
## Menopause: The Journal of The North American Menopause Society

### Vaginal estrogen: a dual-edged sword in postoperative healing of the vaginal wall

Christopher M. Ripperda, MD, Pedro Antonio Maldonado, MD, Jesus F. Acevedo, MS, Patrick W. Keller, BS, Yuel Akkul, MD, PhD, John M. Shelton, BS, and Ruth Ann Word, MD

Mesenchymal stem cells did not survive after injection and had no appreciable effects on healing of the vaginal wall. Although vaginal estrogen had adverse effects on the early phase of healing of the stromal layer, postoperative estrogen played a positive role in healing of the vaginal epithelium after injury.

### Estrogen and DPP-4 inhibitor share similar efficacy in reducing brain pathology caused by cardiac ischemia-reperfusion injury in both lean and obese estrogen-deprived rats

Wasana Pratchayakul, PhD, Sivaporn Sirasinperrasn, PhD, Prangkwan Sa-Nguanmoo, MSc, Cicely Proctor, BSc, Sasivan Kerdphoo, MSc, Nipon Chattipakorn, MD, PhD, and Siriporn C. Chattipakorn, DDS, PhD

In conditions of estrogen deprivation and obesity, cardiac ischemia-reperfusion injury aggravates brain oxidative stress and increases dendritic spine loss.

### Case Report

#### Subcutaneous testosterone-letrozole therapy before and concurrent with neoadjuvant breast chemotherapy: clinical response and therapeutic implications

Rebecca L. Glaser, MD, Anne E. York, MS, and Constantine Dimitrakakis, MD, PhD

Subcutaneous testosterone-letrozole warrants further investigation.

### Letters to the Editor

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