THE YEAR OF ENDOCRINOLOGY: WOMEN'S HEALTH

SEPTEMBER 2016

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

Endocrine news

Women's Health

ENDOCRINE SCIENCE CONTINUES TO HAVE PROFOUND EFFECTS ON ADVANCING WOMEN'S HEALTH FROM RESEARCH AND CLINICAL PERSPECTIVES.

New studies may reveal potential good news for post-menopausal bone health.

A closer look at the first uterus transplant in the U.S. and why it failed.

How can endocrine researchers play a role in the Human Placenta Project?

STRESSED OUT:
New Society guidelines on treating primary aldosteronism

INFORMATION OVERLOAD:
More research = more data. And more problems.

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— Stephen Lafranchi, MD
Doernbecher Children's Hospital, Oregon Health & Science University

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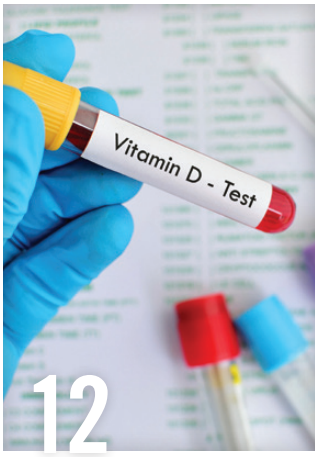

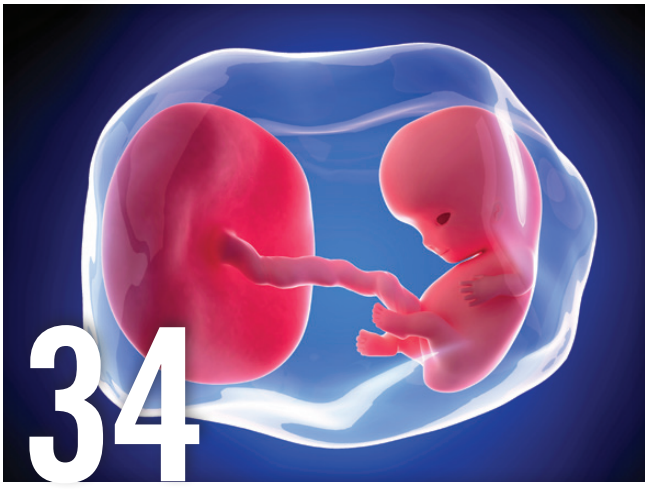

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ENDOCRINE SOCIETY

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Discover the Many Ways to Participate in *Your* Endocrine Society

I **JOINED THE ENDOCRINE SOCIETY OVER 35** years ago so I've seen first-hand how the Endocrine Society helps members at every stage of their careers. I cannot stress enough the value of being engaged in Society activities and of networking with peers and potential mentors. I have been involved in many of the Society's committees, and through these experiences I have learned skills that have benefited me in my own professional career. As a new member, attending **ENDO** opens up a whole new world of opportunities. But beyond **ENDO**, I encourage everyone to get involved as much as possible throughout the year.

Every year the president-elect has the challenging task of selecting members to serve on committees. I say "challenging" because there are more impressive candidates than open positions, and it's always difficult to select from among the large number of members who are very qualified and willing to serve. One way of addressing this problem is to provide more opportunities for engagement with the Society beyond the option of a three-year committee appointment. There are many more opportunities to get involved, such as participating in our advocacy activities, developing educational resources or patient awareness materials, participating in focus groups, and serving on task forces or working groups. These opportunities vary in time commitment and duration, some being as simple as completing an online survey. We have created an online form to make it relatively easy for you to sign up and provide information about your interests, so that we can best match your interests with the available opportunities. Visit the "get involved" page (**www.endocrine.org/membership/get-involved**) for more information.

> "IT IS THROUGH MEMBER ENGAGEMENT THAT THE FUTURE LEADERS OF THE SOCIETY EMERGE."

It is through member engagement that the future leaders of the Society emerge. The Nominating Committee is in charge of selecting the candidates for the ballot each year from the names collected via a Society-wide Call for Nominations. The ballot for the 2017 Endocrine Society Election launched in mid-August and will remain open until October 2. The Society governance is well balanced, and each year a president-elect, a vice president, and a council-designated seat are elected from one of the three constituencies — basic scientists, clinical scientists, and physicians-in-practice — with the candidates for each of the positions coming from a different constituency. The positions on the ballot for the 2017 Election are: president-elect (physician-in-practice); vice president (basic scientist); and council (one clinical scientist seat and two at-large seats). Our Society has an outstanding group of qualified candidates on the ballot, and I encourage all our voting members to participate in this very important activity. To facilitate the voting process, a link to the electronic ballot is now available on the Society's website. Please remember to cast your vote, and remind your colleagues as well. This is *your* Society, and your participation in the election is important!

I would also like to remind you to participate in the Awards Call for Nominations, which will be launched later this fall. The Society has a robust awards program to recognize and honor endocrinologists for their achievements at all stages of their careers and in the broad array of activities that constitute endocrinology. The Laureate Awards recognize endocrinologists for seminal research, meritorious service, leadership and mentorship, innovation, international contributions, public service, translation of science to practice, and lifetime achievement. Visit the Awards page (**www.endocrine.org/awards/laureate-awards**) to learn more about the awards and to submit your nominations. The selected awardees will be recognized at **ENDO 2017** in Orlando, Fla.

Thank you for your participation. If you have any questions or comments, you can reach me via **president@endocrine.org**.

— **Henry M. Kronenberg, MD**, President, Endocrine Society

FROM THE **EDITOR**

Taking a Look at Women's Endocrine Health

ENDOCRINE SCIENCE GOES HAND-IN-HAND WITH THE BREAKTHROUGHS in the research and treatment of women's health issues. From prenatal to post-menopausal, endocrine science is there every step of the way throughout every woman's lifespan. So this issue — like the month of September in the Endocrine Society's Centennial "Year of Endocrinology" — has a special emphasis on women's health.

In her article, "The Long and Short of It" (p. 22), Kelly Horvath looks at the issues of bone health in women, especially those women who are post-menopausal. Osteoporosis and other bone health problems disproportionately affect women, but there has been some good news reported in recent scientific studies that this article discusses. For example, could folic acid protect against selective serotonin-reuptake inhibitor-caused bone loss during breast feeding? A study presented at **ENDO 2016** has shown positive results. There are more findings from another **ENDO 2016** session as well as a recent study from *The Journal of Clinical Endocrinology & Metabolism*.

Earlier this year, the Cleveland Clinic made headlines when it attempted the first uterus transplant in the U.S. that ultimately failed. In "Birth Right" (p. 16), Glenda Fauntleroy takes a closer look at this incident and what the odds are for this procedure to eventually become an option for certain women who wish to give birth to their children. However, there are myriad factors to consider, not the least of which being the issue of undergoing an organ transplant. "Transplant surgery is not to be taken lightly," says Taraneh Shirazian, MD, a gynecologic surgeon at NYU's Langone Medical Center, New York. "And when we look at the other fields of medicine, when we transplant organs, it's to save someone's life. People get really sick from transplant surgery."

On page 34, we have an interview with David Weinberg, PhD, the project lead for the Human Placenta Project, which was launched in 2014 by the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development. The goal of this project is to further understand the structure, function, and development of the placenta in real time throughout pregnancy. We've included this interview in the Women's Health issue because Weinberg knows that endocrine researchers can make a real difference in this program. "We recognize the tremendous value of endocrinologists to this important effort and are eager for their input and contributions," he says in the interview.

The Endocrine Society's series of Clinical Practice Guidelines has become a vital tool for practicing endocrinologists around the world. The latest of these publications is described by Eric Seaborg in "Stressed Out" on page 28 and covers the treatment of primary aldosteronism. "This is a major public health issue," says John W. Funder, MD, PhD, chair of the guideline task force. "Many people with primary aldosteronism are never screened due to the associated costs. Better screening processes are needed to ensure no person suffering from primary aldosteronism and the resulting risks of uncontrolled high blood pressure goes untreated." Yet another way the Endocrine Society is advancing treatment protocols, not just for endocrinologists, but for all clinicians who might see these patients. EN

— **Mark A. Newman**, Editor, *Endocrine News*

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WHY **ENDOCRINOLOGY?**

A Perfect Combination of Science, Critical Thinking, and Patient Care

BY BARBARA ONUMAH, MD, Medical Director, AAMG Diabetes & Endocrine Specialists, Annapolis, Md.

I don't recall exactly when I decided to pursue a career in medicine. As far back as I can recall, even as a little girl growing up in Ghana, West Africa, I remember wanting to become a doctor. I have been fortunate to have had great support along the way in the pursuit of my lifelong dream. My mother was and remains my lead champion. While my mother did not have much schooling herself, she understands the value and importance of education. She has always supported me in several ways, more than I can recount. I recall that she once sold her personal belongings so that I could get enough money to buy the text books I needed for my studies.

When I graduated from Robert Wood Johnson Medical School, there was no doubt in my mind that I wanted to be a general internist because I enjoyed the patient/doctor relationship and the varied pathology that internal medicine presented on a daily basis. My "A-ha" moment for endocrinology came much later, during my third year of residency, while doing a second month of endocrinology elective.

Obviously, there was something about the specialty that drew me to choose another month of elective rotation. I realized during that elective that endocrinology was the area of internal medicine that I enjoyed the most. My interest and love for endocrinology was confirmed during my fellowship training at the National Institutes of Health in Bethesda, Md., where I was exposed to the full spectrum of endocrinology, from adrenal disorders to Zollinger Ellision Syndrome. I have had the great fortune and privilege of working with and learning from outstanding teachers and mentors, including Anne E. Sumner, MD, whose zeal and passion for science and research is contagious. Dr. Sumner remains a mentor and more importantly, a friend.

So when asked why endocrinology, I say it is because it is the perfect combination of science, critical thinking, and long-term doctor/patient relationships. It does not focus on one organ but several, and practically the whole human body. After all, how many specialties can you see a patient with poorly controlled type 1 diabetes, with alternating hypo and hyperglycemia due to presence of insulin antibodies, followed by a little old lady with primary hyperparathyroidism with PTH levels > 4000 pg/mL, who has not seen a doctor in several years presenting with severe back pain due to compression fractures of the lumbar vertebrae, just before the thin Asian male in a wheelchair with periodic paralysis secondary to hyperthyroidism who was very active and working just a few days ago but now is pretty much confined to the wheelchair, all in the same afternoon? All of these conditions, while very different, are the result of a dysfunction in the endocrine system.

> "Endocrinology affords me the chance to be a lifelong learner, be a teacher to my patients and colleagues, and practice medicine. I believe this is the exact reason why I became a doctor."

The future for endocrinology remains exciting, with advances in knowledge in genetics, the use of technology to manage endocrine disorders, and the numerous new therapies that are available and continue to be developed for managing conditions such as diabetes.

Endocrinology affords me the chance to be a lifelong learner, be a teacher to my patients and colleagues, and practice medicine. I believe this is the exact reason why I became a doctor. I can think of a few things that I would do differently if I had the chance to do over. However, if I could turn back the clock and start over, I am certain that endocrinology will remain my choice. EN

To celebrate 100 years of the Endocrine Society, throughout 2016 *Endocrine News* is running a "Why Endocrinology?" column in each issue. If you'd like to share your story with our readers, contact Mark A. Newman at **mnewman@endocrine.org**.

Endocrine Society Announces 2017 Laureate Award Recipients

On March 31, the Laureate Awards Committee had the daunting task to review 96 nomination packages, of which only 14 distinguished men and women were selected to receive the Society's highest honors.

"In overseeing the selection of this year's awardees, I was struck by the breadth of the research undertaken by scientists/physicians in the field of endocrinology and the impact which this research has had on medicine and on our understanding of physiology," says Donald P. McDonnell, PhD, Laureate Awards Committee Chair.

These awards — 14 distinct categories — recognize endocrinologists around the world for their seminal discoveries, outstanding research, translation of science to clinical applications, innovation, dedication to education and mentoring, and so much more.

The 2017 esteemed Laureates join an impressive list of past winners whose discoveries and dedication have improved the health around the world:

- **Fred Conrad Koch Lifetime Achievement Award:** Walter L. Miller, MD
- **Gerald D. Aurbach Award for Outstanding Translational Research:** Eva L. Feldman, MD, PhD
- **International Excellence in Endocrinology Award:** Chandrika Wijeyaratne, DM
- **Outstanding Clinical Investigator Award:** Joel S. Finkelstein, MS, MD
- **Outstanding Clinical Practitioner Award:** Daniel Einhorn, FACE, FACP, MD
- **Outstanding Educator Award:** Laurence Katznelson, MD
- **Outstanding Innovation Award:** Matthias Tschöp, MD
- **Outstanding Leadership in Endocrinology Award:** Teresa K. Woodruff, PhD
- **Outstanding Mentor Award:** Margaret E. Wierman, MD
- **Outstanding Public Service Award:** Larry D. Bowers, PhD
- **Outstanding Scholarly Physician Award:** Rebecca S. Bahn, MD, FRCPI
- **Richard E. Weitzman Outstanding Early Career Investigator Award:** Nima Sharifi, MD
- **Roy O. Greep Award for Outstanding Research:** Klaus H. Kaestner, PhD
- **Sidney H. Ingbar Award for Distinguished Service:** Janet E. Hall, MSc, MD

Please join the Society in congratulating the achievements of the newest Laureates. They will be honored at **ENDO 2017** in Orlando and featured in the January 2017 issue of *Endocrine News*.

MEMBERS in the NEWS

Society Members Selected for CMS Clinical Committee Developing MIPS Measures

Centers for Medicare and Medicaid Services (CMS) has selected Endocrine Society members Ronald Harris, MD, from Geisinger Health System and Ilona Lorincz, MD, from University of Pennsylvania Hospital to provide an endocrine perspective as they develop care episode and patient condition groups for use in the Merit-based Incentive Payment System (MIPS). These groupings will be used as the basis of resource use measures for use in MIPS.

The objectives of the CMS Clinical Committee are to define the episode triggers and episode windows for care episode and patient condition groups, and provide input on episode grouping algorithm and measure development approach.

The Society is actively working on behalf of its members to shape the new Medicare payment system to ensure that the role of the endocrinologist is accurately captured in all aspects of the program. A session at the Clinical Endocrinology Update, September 9 in Seattle, Wa., will provide attendees with an understanding of the new system in advance of implementation in 2017.

Visit **www.endocrine.org** for more resources on MIPS.

Lisa H. Fish, MD, the Society's immediate past president, speaking at EndoCares in Lima, Peru

EndoCares Debuts in Peru

In August, the Endocrine Society launched its first global outreach campaign, EndoCares: Diabetes, in Lima, Peru.

This two-day program — achieved through strategic partnerships with three local organizations: Sociedad Peruana de Endocrinologia, Asociacion de Diabetes del Peru, and Liga Peruana de Lucha Contra la Diabetes — included a session to educate healthcare providers on diabetes care, a one-day congress for patients with type 2 diabetes, and a one-day type 1 diabetes-focused workshop for patients with type 1 diabetes.

Society members Agustin Busta, MD, Lisa Fish, MD, and Guillermo Umpierrez, MD, led the provider-focused session during the Peruvian Society for Endocrinology's Annual Meeting on Saturday August 6. On Sunday, the two simultaneous one-day, patient-focused sessions took place. Together, EndoCares: Diabetes was able to reach 1,012 healthcare providers, 500 patients with T2DM, 100 patients with T1DM, and key government officials in charge of healthcare policy.

Fish and other experts engaged with healthcare providers in the community and educated them on the latest advancements in diabetes care. Patients and their families who attended the EndoCares events learned about the rights of patients, how to make the most of their appointment with their healthcare provider, and how to develop effective teamwork with their caregiver.

EndoCares also had an unexpected, but welcomed, benefit: more than quadrupling the number of Endocrine Society members in Peru. Through on-site membership processing, the Society gained 133 new members, an all-time record that increased the Society's Peruvian membership from 37 to 170.

EndoCares was developed to provide medical resources, coaching, and education to patients suffering from endocrine-related conditions in underserved areas of the world. In addition, EndoCares aims to foster the next generation of endocrinologists and healthcare providers by creating opportunities to further their education and professional network.

A more in-depth feature about the program is scheduled for the November *Endocrine News*, an issue devoted to Diabetes Awareness Month.

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Oxford University Press to Distribute Society Journals

Beginning in January, Oxford University Press (OUP) will be the exclusive distributor of all of the digital editions of Endocrine Society journals.

The Society's current journals *The Journal of Clinical Endocrinology & Metabolism*, *Endocrinology* and *Endocrine Reviews*, as well as its forthcoming Open Access publication *Journal of the Endocrine Society* will be available on the OUP web platform. As part of the partnership, OUP also will sell online and print journal subscriptions to the institutional market worldwide, other than the Society's existing markets in Japan.

"This exciting strategic partnership with OUP will ensure that the leading science published by the Endocrine Society will be accessible around the globe," says the Endocrine Society's chief executive officer Barbara Byrd Keenan, FASAE, CAE. "We welcome the opportunity to partner with OUP to bring prestigious endocrine and hormone science to new audiences."

"We at Oxford University Press are simply thrilled to be partnering with the Endocrine Society to host its world-class journals and assist in whatever way we can to broaden their reach," says Niko Pfund, president, OUP USA. "The field of endocrinology lies at the nexus of any number of pressing global health issues—from diabetes, obesity, and cancer to infertility and sleep disorders—and there is no portfolio of publications more influential and more central to the field than *The Journal of Clinical Endocrinology & Metabolism*, *Endocrinology*, *Endocrine Reviews*, and *Journal of the Endocrine Society*. These journals have a definitional impact on biomedical research, and we look forward to ensuring their impact continues to expand."

> **"This exciting strategic partnership with OUP will ensure that the leading science published by the Endocrine Society will be accessible around the globe."**

"The Endocrine Society and OUP share a passion for communicating the latest research and scholarship worldwide," says the Society's Publications Core Committee chair Peter J. Fuller, PhD, FRACP, MBBS. "This partnership with OUP, one of the world's most respected publication houses, will provide the international endocrine community with enhanced institutional access to the preeminent publications in clinical and experimental endocrinology as well as ensuring a global readership for our authors."

OUP publishes over 300 academic and research journals covering a broad range of subject areas, two thirds of which are published in collaboration with learned societies and other international organizations. Oxford University Press has been publishing journals for more than a century and, as part of the world's oldest and largest university press, has more than 500 years of publishing expertise behind it.

- ***The Journal of Clinical Endocrinology & Metabolism*** is the world's leading peer-reviewed journal for endocrine clinical research and clinical practice information. Each issue provides up-to-date coverage of new developments that enhance our understanding of pathophysiology, diagnosis and treatment of endocrine and metabolic disorders.

- ***Endocrinology***, celebrating its centennial in 2017, is broadening its aims and scope by merging with another eminent Society journal, *Molecular Endocrinology*. Publishing with the retained title of ***Endocrinology***, and the added tagline of "Molecular and Physiological Basis of Endocrine Health and Disease," the expanded journal is the Society's flagship journal for all areas of basic and translational research, including novel mechanistic insights into physiological and pathophysiological processes relevant to endocrine systems and endocrine-related disease at the molecular, cellular, tissue, or organismal level of hormone function.

- ***Endocrine Reviews*** publishes bimonthly comprehensive, authoritative and timely review articles, balancing both experimental and clinical endocrinology themes and crystallizing the most significant clinical experience and current research in endocrinology and related areas.

- ***Journal of the Endocrine Society (JES)***, the Society's new Open Access publication, will span the Society's mission to cover advances in basic science, clinical science and clinical practice. This marks the first time the Society has introduced a new journal under its ownership in nearly 30 years. ***JES*** will bring to the Society's portfolio of journals a new publishing outlet specifically intended to rapidly publish emerging science on a variety of topics in the endocrinology field. The new journal will offer a global audience free access to a wide range of research articles and features on diabetes, obesity, hormone-related cancers, reproductive health, bone health, and thyroid health. The journal will begin accepting submissions in the fall of 2016 and launch in January 2017.

Society Experts Concerned EU Chemical Criteria Will Not Protect Public

The European Commission's narrow criteria for endocrine-disrupting chemicals (EDCs) will make it nearly impossible for scientists to meet the unrealistically high burden of proof and protect the public from dangerous chemicals, the Endocrine Society said in a response sent to the Commission in July.

More than 1,300 studies have found connections between EDC exposure and serious health conditions such as infertility, diabetes, obesity, hormone-related cancers, and neurological disorders, according to the Society's 2015 Scientific Statement.

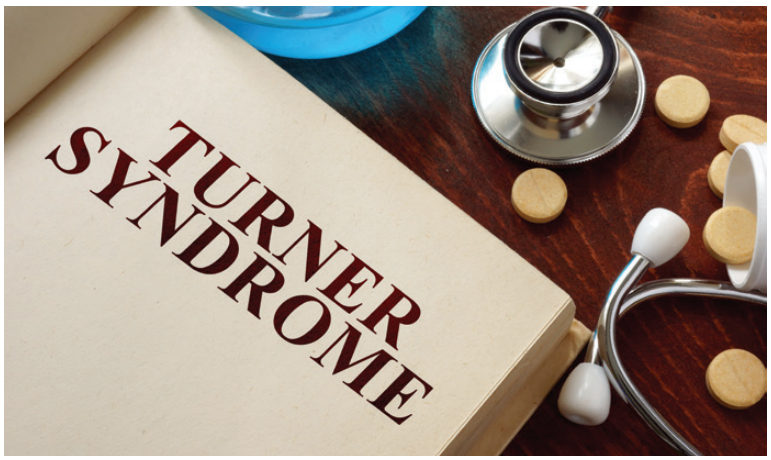
The European Union is the largest single economy with a regulation specific to EDCs. In order for it to be enforced, this regulation requires the European Commission to propose criteria to identify EDCs, similar to those used for the identification of carcinogens or other health hazards.

Despite the body of evidence, the European Commission's proposed criteria call for waiting until a chemical is known to cause adverse effects relevant to human health before taking action. Since it can take years or even generations for the health effects of EDCs to become apparent, this approach would allow chemicals to cause significant harm to populations before the chemicals could be regulated. When research shows that a given chemical is harmful to animals or human cells, that scientific evidence needs to be taken into account.

"The European Commission's restrictive definition defeats the purpose of the regulations — to shield the public from endocrine-disrupting chemicals that pose a threat to human health," says Rémy Slama, PhD, a member of the Society's European Union Endocrine-Disrupting Chemicals Task Force. "By adopting these criteria, the Commission has set the European Union on a course to abandon the precautionary principle. Regulation of chemicals should err on the side of protecting the public and the environment from harm. Asking for an even stronger level of scientific evidence for endocrine disruptors than for carcinogens, for which the level of proof required is already very high, would be going in the wrong direction."

The Society has been advocating on the European Union's definition of EDCs since 2013 and has supported a tiered regulatory approach that would rank EDCs based on available scientific evidence. As the European Parliament and member countries consider whether to implement the European Commission's criteria, the Society will continue to advocate for criteria that reflect the state of the science.

Society Releases New Tools for Turner Syndrome Care Transitions



The Endocrine Society has released a new toolkit to assist patients and physicians with pediatric-to-adult transitions of care for Turner Syndrome.

This initiative was spearheaded by the Society along with representatives from the Hormone Health Network, Turner Syndrome Foundation, American College of Physicians, and the American Academy of Pediatrics. The toolkit includes a comprehensive approach to successfully managing these transitions, including the following resources:

- Transition Readiness Assessment: An assessment tool for providers to identify gaps in self-care knowledge and skills.
- Clinical Summary & Transfer Record: A form to ensure that all clinical information related to the patient's condition is included in his or her medical record upon transfer to the adult practice.
- Recommended Approach for Transitioning into Adult Practice: A resource to assist providers who plan to receive emerging adults with Turner Syndrome.
- Dosing Standards for Estrogen: An overview of dosing strategies for patients with Turner Syndrome
- Recommended Approach for Planning for Pediatric Practices: A guide for pediatricians who are preparing to transition their patients to an adult practice
- Adult Care Recommendations for Screening & Assessment: A chart to inform the patient which provider should be responsible for conducting various screenings and assessments into adulthood

Copies of these resources, along with tools for type 1 diabetes and growth hormone deficiency, can be found at **endocrinetransitions.org**.

ENDOCRINE SOCIETY

Vote Today for the 2017 Council & Officers

The 2017 Endocrine Society Election for Officers and Council launched on August 15 and members have until October 2, 2016 (midnight, Eastern Time) to vote.

Endocrine Society members who are eligible to vote (full, emeritus, trainees with doctoral degrees) may submit votes by simply logging into your individual members accounts through the Endocrine Society's Election website: http://www.endocrine.org/membership/society-election.

The candidates for the 2017 ballot are as follows:

President-Elect (Clinical Practitioner)
1. Susan Mandel, MPH, MD
2. M. Carol Greenlee, MD

Vice President (Basic Scientist)
1. E. Dale Abel, MBBS, MD
2. Genevieve Neal-Perry, MD

Council (Clinical Scientist Seat)
1. Ghada El-Hajj Fuleihan, MD, MPH
2. Cesar Boguszewski, MD, PhD

Council (At Large Seat)
1. Andrea Gore, PhD
2. Anthony Hollenberg, MD

Council (At-Large Seat)
1. Clifford Rosen, MD
2. Alvin Matsumoto, MD

Good luck to this exemplary roster of potential candidates! EN

ENDO2017
THE ENDOCRINE SOCIETY'S 99TH ANNUAL MEETING & EXPO

Orlando, April 1 – 4, 2017

The Endocrine Society holds its annual meeting within arm's reach of the "happiest place on Earth" in Orlando. With over 9,000 attendees, nearly 3,000 abstracts, and over 200 other sessions, it is the leading global meeting on endocrinology research and clinical care. The meeting also hosts other satellite and pre-conference events, such as our Early Career Forum and Hands-On Thyroid Workshops.

www.endocrine.org/endo-2017

Clinical Endocrinology Update 2016

Seattle, September 8 – 10

This three-day meeting provides the latest information available in clinical endocrinology. Taught by expert faculty in a dynamic meeting format, you will return from CEU confident that your endocrine practice benefits from the most current and advanced information possible.

www.endocrine.org/ceu

Endocrine Board Review 2016

Seattle, September 11 – 12

Identify areas for improvement at the most in-depth board preparation available. Fellows preparing to sit for the boards and certified practitioners needing to maintain certification will benefit from EBR, the premier preparatory mock exam.

www.endocrine.org/ebr

86th Annual Meeting of the American Thyroid Association

Denver, September 21 – 25

The ATA meeting is designed for the community of endocrinologists, internists, surgeons, basic scientists, nuclear medicine scientists, pathologists, trainees, nurses, physician assistants, and other healthcare professionals who wish to broaden and update their knowledge of the thyroid gland and its disorders.

www.thyroid.org

Sex Differences Across the Lifespan: A Focus on Metabolism

Colorado Springs, September 28 – 30

The Center for Women's Health Research at the University of Colorado Anschutz Medical Campus is hosting a national conference on women's health research in partnership with the Society for Women's Health Research. A collaborative, productive environment will be fostered through interactive sessions, poster presentations, focus groups, and keynote speakers.

www.endocrine.org/WomensHealth

EndoBridge 2016

Antalya, Turkey, October 20 – 23

EndoBridge provides a comprehensive update in the field of endocrinology and is specifically designed for the clinical endocrinologist. The official language of the meeting is English, but simultaneous translation will be available in Russian, Arabic, and Turkish.

www.endobridge.org

ObesityWeek 2016

New Orleans, October 31 – November 4

The preeminent annual scientific and educational conference covers the full scope of the obesity issue, from cutting-edge basic science and clinical research to intervention and public policy discussions that can impact the quality of life for millions affected by obesity.

www.obesity.org

PPTOX V

Fukuoka, Japan, November 13 – 16

The international summit of Prenatal Programming and Toxicity (PPTOX) is dedicated to cutting-edge discussion of environmental hazards during early life and long-term consequences. PPTOX is one of the premier international venues for scientists to evaluate current knowledge and guide forward momentum for this burgeoning field.

www.pptoxv.com

BY DEREK BAGLEY

Early Intervention in T2D Patients with Poor Glycemic Control Could Help Them Reach A1C Goals More Quickly

Earlier intensification of treatment in newly diagnosed type 2 diabetes (T2D) patients who fail metformin monotherapy could help those patients reach A1C goals faster, according to a study recently published in *Diabetes Care*. The results were also presented at ADA in New Orleans.

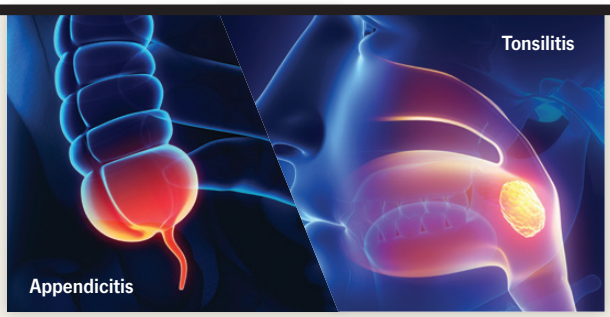
Researchers at the Cleveland Clinic, led by Kevin M. Pantalone, point out that previous studies may have exaggerated the prevalence of "clinical inertia" — the phrase used to describe the delay in intensifying treatment in patients with poor glycemic control. In addition, prior studies also focused on the prevalent population of patients with type 2 diabetes, the results of which may not apply to the newly diagnosed patient. So Pantalone and his team set out to study the intensification of treatment in these patients. The authors noted that from 2007 to 2010, only 52.5% of people with diabetes achieved an A1C of less than 7%, according to research using the United States National Health and Nutrition Examination Survey database.

"Recent studies revealed that the median time to treatment intensification among those in whom metformin monotherapy failed exceeded one year and that the median time to treatment intensification was 14.0 months overall," the authors write.

The researchers looked at Cleveland Clinic's electronic health records, identifying newly diagnosed T2D patients between 2005 and 2013. The patients studied had not reached A1C goals after at least three months of metformin monotherapy. "A time-dependent survival analysis was used to compare the time until A1C goal attainment in patients who receive early intensification of therapy (within six months of metformin failure) or late intensification. The analysis was performed for A1C goals of 7% (N=1,168), 7.5% (N=679), and 8% (N=429)," they write.

The team found that treatment was intensified early in 62% of the patients with an A1C goal of 7%, 69% of the patients with an A1C goal of 7.5%, and 72% of patients with a goal of 8%. They found that, regardless of A1C goal, the earlier the intensification of treatment, the quicker the patients achieved their goals.

Findings: **The researchers conclude: "The results demonstrate that a substantial number of patients with newly diagnosed T2D fail to undergo intensification of therapy within six months of metformin monotherapy failure. Early intervention in patients who fail metformin monotherapy resulted in more rapid attainment of A1C goals."**



Appendix and Tonsil Removal Linked to Higher Pregnancy Rates

Women who had their appendix and/or tonsils removed when they were young are more likely to get pregnant, according to a study recently published in *Fertility and Sterility*. Not only are these women more likely to get pregnant, they get pregnant sooner.

Researchers led by Sami Shimi, MD, clinical senior lecturer in the School of Medicine at the University of Dundee, looked at pregnancy rates using the United Kingdom (U.K.) primary healthcare-based Clinical Practice Research Datalink (CPRD). They identified 54,675 appendectomy-only patients; 112,607 tonsillectomy-only patients; 10,340 patients who had both appendectomy and tonsillectomy, and 355,244 comparators matched for exact age and practice from the rest of female patients in the database. The year range was 1987 to 2012, and the team used Cox regression models to find the association between surgery and subsequent pregnancy.

"There were 29,732 (54.4%), 60,078 (53.4%), and 6,169 (59.7%) pregnancies in the appendectomy-only, tonsillectomy-only, and both appendectomy tonsillectomy cohorts, respectively versus 155,079 (43.7%) in the comparator cohort during a mean follow-up of 14.7 ± 9.7 years," the authors write. They also note that time to pregnancy was shortest in the women who had both appendectomy and tonsillectomy.

Findings: "Appendectomy and/or tonsillectomy was associated with increased subsequent pregnancy rates and shorter time to pregnancy," the researchers conclude. "The effect of the surgical procedures on the pregnancy outcome was cumulative."

"The authors are not advocating that young women should seek appendectomy or tonsillectomy to increase their chances of pregnancy," Shimi says. "However, females who require appendectomy or tonsillectomy should be reassured that their future chances of pregnancy may not be jeopardized but on the contrary may increase."

TBT Impairs HPA Axis in Female Rats

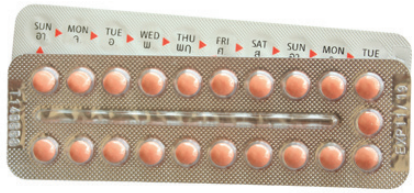
Tributyltin chloride (TBT) — a chemical used in antifouling paints and a known endocrine-disrupting chemical (EDC) — disrupts the hypothalamus-pituitary-adrenal (HPA) axis in female rats, according to a study recently published in *Endocrinology*.

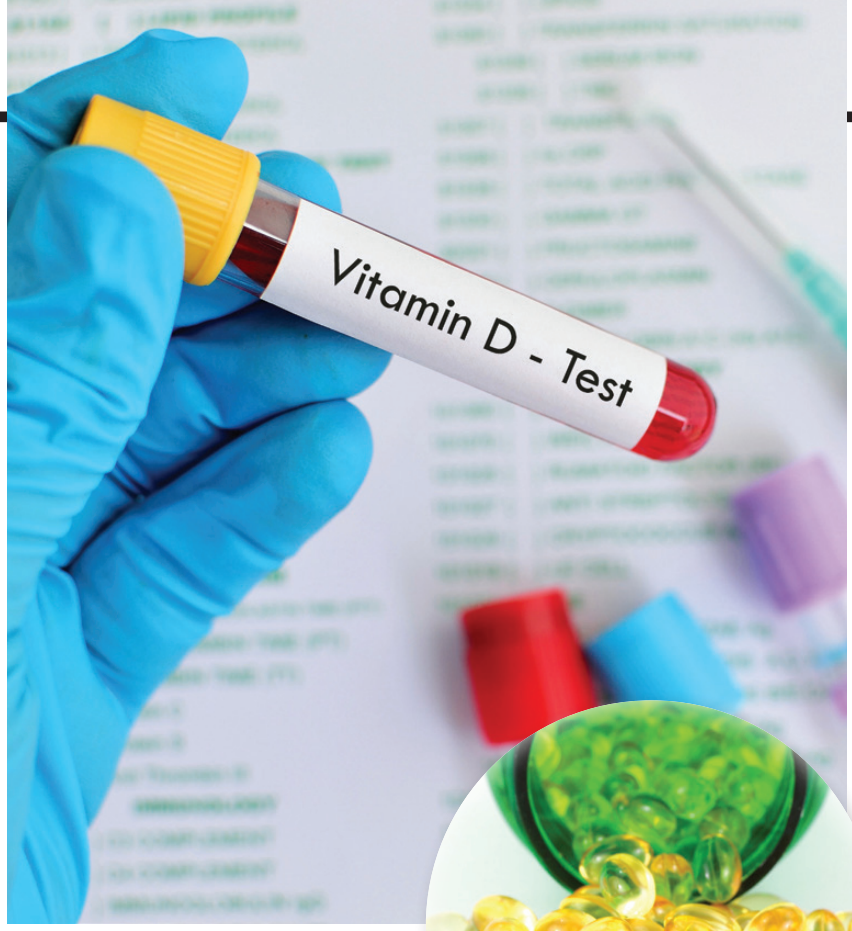
Researchers led by Professor Jones B. Graceli, of Universidade Federal do Espírito Santo, in Vitória, ES, Brazil, point out that TBT has been shown to have endocrine-disrupting effects. "TBT exposure can lead to alterations in neural, reproductive, immune, and metabolic functions in both in vivo and in vitro models, suppressing immune responses and increasing adiposity," the authors write. Humans are mainly exposed to TBT through eating seafood, since the chemical tends to accumulate in fish.

The researchers also write that "[s]tudies have supported the key roles of inflammatory mediators and obesity in the abnormal HPA axis function," but that the studies examining the effects of TBT on the HPA axis — one of the most important neuroendocrine axes, since it plays a key role in stress processes — are rare.

The team exposed female rats to TBT and examined its effects on their HPA axes. They detected high corticosterone levels, high corticotropin-releasing hormone (CRH) expression, and low adrenocorticotropic hormone (ACTH) expression. "In addition," the authors write, "TBT leads to an increase in the inducible nitric oxide synthase protein expression in the hypothalamus of TBT rats. Morphophysiological abnormalities, including increases in inflammation, a disrupted cellular redox balance, apoptosis, and collagen deposition in the pituitary and adrenal glands, were observed in TBT rats."

Findings: The researchers conclude that their data show that TBT leads to functional dissociation between CRH, ACTH, and costicosterone, "which could be associated with an inflammation and increase of inducible nitric oxide synthase expression in hypothalamus. Thus, TBT exerts toxic effects at different levels on the HPA axis function."





Vitamin D Levels May Drop When Women Stop Using Birth Control

Women risk having their vitamin D levels fall when they stop using birth control pills or other contraceptives containing estrogen, according to a new study published in *The Journal of Clinical Endocrinology & Metabolism.*

"Our study found that women who were using contraception containing estrogen tended to have higher vitamin D levels than other women," says the study's first author, Quaker E. Harmon, MD, PhD, of the National Institutes of Health's (NIH's) National Institute of Environmental Health Sciences in Research Triangle Park, N.C. "We could not find any behavioral differences such as increased time spent outdoors to explain the increase. Our findings suggest that contraceptives containing estrogen tend to boost vitamin D levels, and those levels are likely to fall when women cease using contraception."

For the cross-sectional data analysis, researchers analyzed data from the Study of Environment, Lifestyle & Fibroids (SELF), a study of reproductive health in nearly 1,700 African American women between the ages of 23 and 34. The women all lived in Detroit, Mich., or the surrounding area. As part of the study, the participants answered questions about contraceptive use, as well as the amount of time they spent outdoors and any vitamin D supplements they took.

The 1,662 women provided blood samples, which were analyzed to measure levels of 25-hydroxy vitamin D.

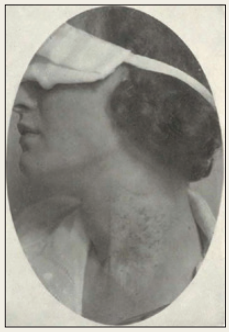
Findings: After adjusting for seasonal exposure to sunlight, the researchers found the use of contraceptive pills, patch, or ring containing estrogen was associated with a 20% higher 25-hydroxy vitamin D level. While current birth control users tended to have higher levels of vitamin D in the blood, past contraceptive users had average levels of vitamin D. "Our findings indicate women may run the risk of developing vitamin D deficiency just when they want to become pregnant," Harmon says. "For women who are planning to stop using birth control, it is worth taking steps to ensure that vitamin D levels are adequate while trying to conceive and during pregnancy." EN

> **I understand the desire to carry a child, for the child to be biologically yours.** But I see women every day who can't afford IVF or who can't do IVF because they're already past that threshold age in which they can use their own eggs. They're devastated because IVF is either too expensive or not attainable or won't work for them, and IVF is just one part of this transplant process."
>
> **— TARANEH SHIRAZIAN, MD,** gynecologic surgeon, NYU Langone Medical Center, New York, N.Y., on the many procedures involved in a uterine transplant, in "Birth Right" on page 16.

FROM THE CENTURY OF ENDOCRINOLOGY TIMELINE

1916:

M. Seymour Reports on the Treatment of Graves' Disease by Roentgen Ray



GRAVES' DISEASE. Treatment by Roentgen Ray. Seymour (M.) Boston M. & S. Jour. 1916, clxxv, 568. Of the 80 cases under treatment at the Massachusetts General Hospital all showed improvement except 7. Five of these showed no change. Of the 80 cases 8 were completely cured of their symptoms. They use a dose of 4H (equals 4 Holzknecht, or IOx Kienbock, or IB Sabouraud-Noire). This produces a slight erythema, but no skin irritation. The target is 10 inches from the skin with a filter of 4 mm. of aluminum and 1 thickness of sole leather. The dose is not repeated within 3 or 4 weeks. Seymour also finds the evaluation of the basal metabolism of distinct value as an index of thyroid activity. Five cases of extra-cervical ribs were found in the 144 cases studied but no symptoms could be traced to this abnormality.

For more about the Century of Endocrinology, go to: www.ESCentennial.org/timeline.

59%

Pregnancy rates in women who were lacking both their appendix and their tonsils, according to a 15-year study conducted by researchers at the University of Dundee, Scotland, University College London, U.K. The researchers are puzzled as to the reasons behind this link.

— SOURCE: *FERTILITY AND STERILITY*

SHUTTERSTOCK.COM/CARTOONRESOURCE

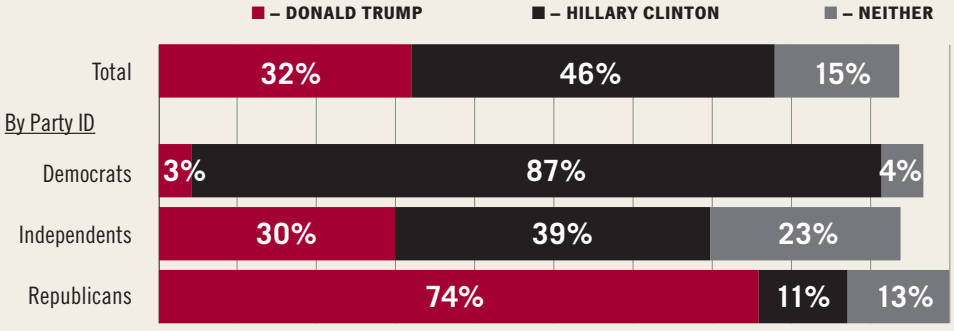
31%

Number of endocrinologists who reported having any bias toward their patients, according to the Medscape Lifestyle Report.

— SOURCE: MEDSCAPE LIFESTYLE REPORT 2016

Partisan Voters Say Their Party's Candidate Best Represents Their Healthcare Views, Independents Lean Toward Clinton

AMONG REGISTERED VOTERS: Thinking about the candidates for president in 2016, regardless of political party or who you intend to vote for, which candidate best represents your own views on healthcare?



— NOTE: Another presidential candidate (Vol.) and Don't Know/Refused responses not shown.
SOURCE: KAISER FAMILY FOUNDATION HEALTH TRACKING POLL (CONDUCTED JULY 5–11, 2016)

Earlier this year, Cleveland Clinic took a bold step when it attempted the first uterus transplant in the country. Although this attempt ultimately failed, **this could remove past obstacles for women wanting to give birth to their own children.**

The uterine transplant is considered for women who suffer from uterine factor infertility (UFI). For these women, pregnancy is not an option because they were either born without a uterus or have had their uterus removed. Women with UFI may have had prior pregnancies and/or deliveries.

Birth RIGHT

BY GLENDA FAUNTLEROY

On February 24, 2016, a large surgical team at the Cleveland Clinic in Ohio performed this country's first uterus transplant into a 26-year-old Texas woman. However, almost two weeks later, the woman developed a serious infection that compromised the blood supply to the uterus, causing the need for its removal.

The failed transplant, however, has not derailed Cleveland Clinic's program. It was the first of 10 uterine transplants planned by the medical facility as part of its ongoing clinical trial.

"Although we were saddened and disappointed by the results of our first attempt at uterine transplant, we knew this kind of complication was possible," says Rebecca Flyct, MD, one of the team's gynecologic surgeons. "Our research subjects will be re-consented with information gained in the course of this first procedure. We will also be modifying our protocol in several ways to prevent this complication in the future."

She adds that, in general, women are still highly interested in participating in the research trial. For them, uterine transplant offers an alternative road to motherhood other than adoption or surrogacy.

WHO ARE THE RIGHT CANDIDATES?

The uterine transplant is considered for women who suffer from uterine factor infertility (UFI). For these women, pregnancy is not an option because they were either born without a uterus or have had their uterus removed. Women with UFI may have had prior pregnancies and/or deliveries. Cleveland Clinic's first patient, Lindsey, was born without a uterus.

"The incidence of congenital absence of the uterus, Mayer Rokitansky syndrome, is about one in 4,000 women," Flyct explains. "For women who develop UFI related to uterine damage, this can be surgical, for example, for fibroids or other common gynecological conditions, or complications from childbirth or miscarriage. It can also result from severe uterine infections."

Women interested in Cleveland Clinic's trial must be between the ages of 21 and 39 and are evaluated by a team of experts, including surgeons, doctors, bioethicists, psychologists, and social workers. But finding the right candidate for uterus transplant is just one part of a long process (see sidebar on p. 20).

Patients accepted to the study undergo more than the organ transplant surgery — but also in vitro fertilization (IVF) and intensive monitoring during pregnancy and delivery. After the transplant procedure, patients must wait at least one year before IVF is started to be sure the body will not reject the organ and the uterus has healed.

Taraneh Shirazian, MD, gynecologic surgeon at NYU Langone Medical Center in New York, wonders about the difficulties faced by the women who take part in the trials.

"My first thought was that it seemed like a very difficult road for those women who were to choose that route because it involves so many layers in terms of having multiple surgeries," she says. "Needing IVF in addition to the actual transplant surgery, and then enduring the long path ahead."

"Transplant surgery is not to be taken lightly, and when we look at the other fields of medicine, when we transplant organs, it's to save someone's life," Shirazian continues. "People get really sick from transplant surgery."

In the case of Cleveland Clinic's first transplant, the uterus was from a deceased donor — a healthy woman of reproductive age who had died suddenly. When the transplanted uterus is from a living donor, she must be 18 – 40 years old with a healthy uterus and her next of kin must consent.

And unlike other organ transplants, uterine transplants are not meant to be permanent. Once the woman experiences one or two births, the uterus will be removed or allowed to disintegrate.

> **"My first thought was that it seemed like a very difficult road for those women** who were to choose that route because it involves so many layers in terms of having multiple surgeries. Needing IVF in addition to the actual transplant surgery, and then enduring the long path ahead."
>
> — TARANEH SHIRAZIAN, MD, GYNECOLOGIC SURGEON, NYU LANGONE MEDICAL CENTER, NEW YORK

Patients accepted to the study undergo more than the organ transplant surgery — but also in vitro fertilization (IVF) and intensive monitoring during pregnancy and delivery.

THE PIONEER AND THE FUTURE

While Cleveland Clinic is the first medical center in the U.S. to perform the uterine transplant, the University of Gothenburg in Sweden is the world's pioneer in the procedure. At the Sahlgrenska Academy, the research project has been ongoing since 1999, and in 2014, a 36-year-old participant became the first to deliver a healthy baby boy. Nine women have undergone uterus transplants in Sweden, resulting in five pregnancies and four live births.

Cleveland Clinic's lead transplant surgeon, Andreas Tzakis, MD, collaborated with colleagues at the University of Gothenburg on their research and clinical trial.

Three other medical centers in the U.S. have also started experimental transplant programs: Baylor University Medical Center in Dallas, Brigham and Women's Hospital in Boston, and the University of Nebraska Medical Center in Omaha.

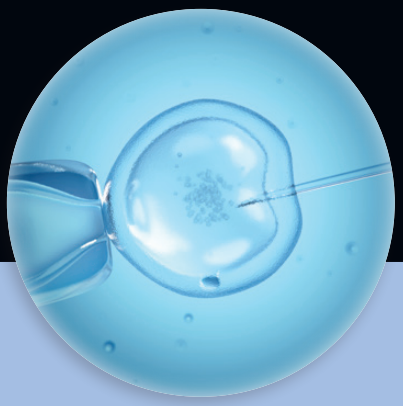
Since the announcement of its clinical trial, Baylor has had an enormous response from across the world, according to spokesman Craig Civale.

"We are still in the screening process and have screened more than 150 women with no uterus or a non-functioning uterus who want to participate in this trial," Civale says. He adds that the goal of the program is to find 10 women who will be the best candidates.

AT A GLANCE

- The uterine transplant is considered for women who suffer from uterine factor infertility.
- Patients accepted to the study undergo more than the organ transplant surgery.
- While Cleveland Clinic is the first medical center in the U.S. to perform the uterine transplant, the University of Gothenburg in Sweden is the world's pioneer in the procedure.

CLEVELAND CLINIC'S UTERUS TRANSPLANT: STEP BY STEP



1. **In-depth screening of candidates** — Must be ages 21–39 with uterine factor infertility (UFI). Evaluated by team of experts.
2. **Donor search begins** — Ages 18–40 with healthy uterus. Next of kin must consent.
3. **IVF starts** — Patient's ovaries stimulated, eggs removed and fertilized in lab, and 6–10 embryos frozen.
4. **Prep and transplant** — Anti-rejection drugs started. Donor uterus and blood supply transplanted into patient's pelvis.
5. **IVF continues** — In a few months, periods begin. In 12 months, uterus heals. Embryos planted one by one. Goal: 1–2 pregnancies.
6. **Pregnancy monitored** — Anti-rejection drugs needed throughout. Monthly biopsies check for rejection.
7. **Motherhood** — Baby delivered by C-section. Donor uterus removed after 1–2 babies. Anti-rejection drugs stop.

Source: Cleveland Clinic (www.clevelandclinic.org)

"Transplant surgery is not to be taken lightly, and when we look at the other fields of medicine, when we transplant organs, it's to save someone's life. People get really sick from transplant surgery." — Taraneh Shirazian, MD, gynecologic surgeon, NYU Langone Medical Center, New York

Flyct says there is indeed considerable interest in the U.S. and internationally for the procedure.

"That said, I expect that it will be many years before this treatment would become standard of care," she says. "Data is needed regarding live births from our center and others regarding maternal and fetal risks with follow up over several years from delivery. Although the technique shows promise, we are realistically still at least a decade away from introducing this treatment outside of research protocols."

Shirazian also wonders how attainable uterine transplant will be for the majority of women. "Who could actually access it?" she ponders. "What would they have to go through? What are the costs versus benefits?"

"I understand the desire to carry a child, for the child to be biologically yours," Shirazian says. "But I see women every day who can't afford IVF or who can't do IVF because they're already past that threshold age in which they can use their own eggs. They're devastated because IVF is either too expensive or not attainable or won't work for them, and IVF is just one part of this transplant process."

Shirazian acknowledges that technology for IVF has improved substantially over time, allowing more women to benefit and experience pregnancy.

"So I do see that things definitely do progress, and we get better at using certain procedures and technologies. And then it does become more widely available to more people," she says. "I just don't quite see this yet." EN

FAUNTLEROY IS A FREELANCE JOURNALIST AND REGULAR CONTRIBUTOR TO *ENDOCRINE NEWS* BASED IN CARMEL, IN. SHE WROTE ABOUT THE CLASS OF ENDOCRINE-DISRUPTING CHEMICALS CALLED OBESOGENS IN THE AUGUST ISSUE.

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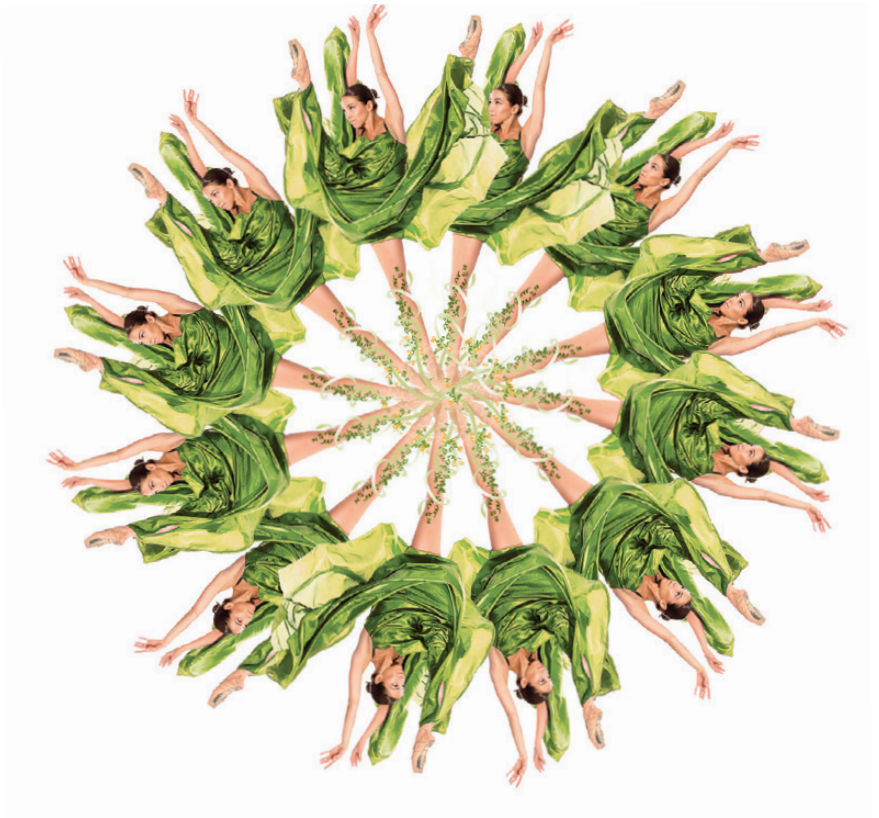

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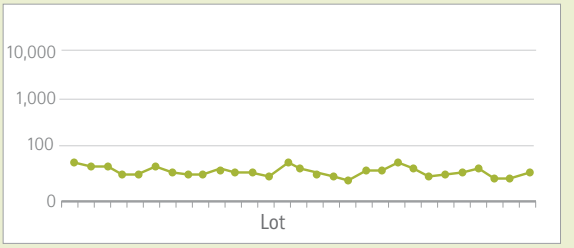

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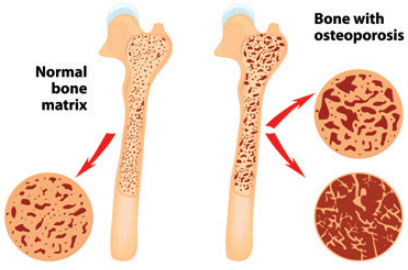
BY KELLY HORVATH

THE LONG & short of it

Unfortunately the odds are stacked against women when it comes to bone health, especially during postmenopause. As these maladies show no signs of abating, new studies reveal some potential good news.

Although it is known as the "silent disease," osteoporosis is no less prevalent, harmful, or costly for its stealth.



According to the Endocrine Society's Facts and Figures Report on Bone and Mineral, in the U.S., more than 10 million people have osteoporosis, and more than 34 million have been diagnosed with osteopenia, or low bone mineral density (BMD). In postmenopausal women, this prevalence reaches staggering proportions — by age 60, 50% of U.S. women have low BMD, and 20% will suffer an osteoporosis-related fracture.

Annually, about 2 million osteoporosis-related fractures occur, and that number could rise as incidence of osteoporosis increases by an estimated 50% by 2025 in U.S. adults ages 65 – 74. Recurrent fractures are particularly worrisome as they contribute to progressive disability, loss of independence, and, ultimately, mortality. Some liken the public health menace of osteoporosis in women to that of cardiovascular disease in men. Three recent studies bring some potentially very good news to this problem, however.

A Pregnant Pause

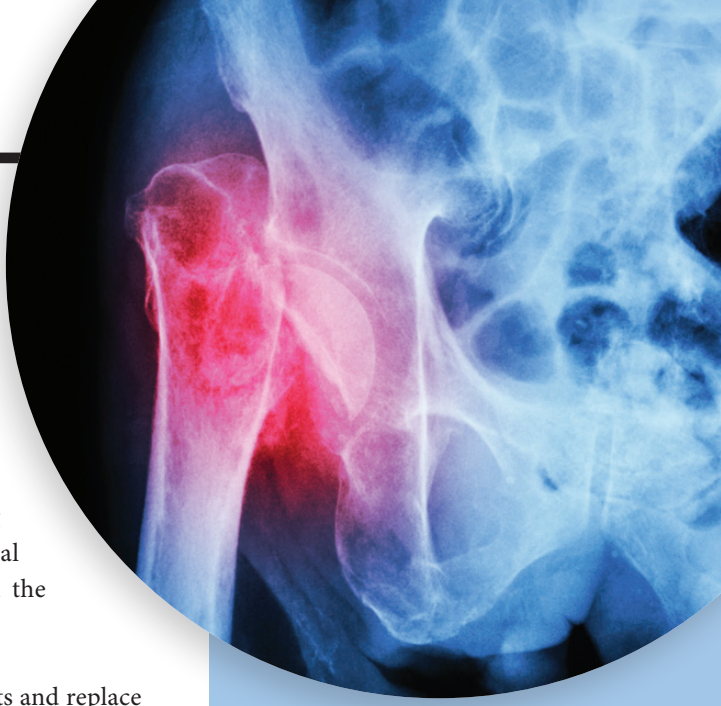
Although osteopenia and osteoporosis largely manifest in post-menopause, research presented at **ENDO 2016** indicates that risk factors for these conditions can occur much earlier in a woman's life span. Laura Hernandez, PhD, assistant professor at the University of Wisconsin-Madison; coauthor

In postmenopausal women, the prevalence of osteoporosis/osteopenia reaches staggering proportions — by age 60, 50% of U.S. women have low bone mineral density, and 20% will suffer an osteoporosis-related fracture.

Chad Vezina, PhD, associate professor at the University of Wisconsin-Madison; and graduate student Samantha Weaver found that using fluoxetine (Prozac), a selective serotonin-reuptake inhibitor (SSRI), during pregnancy and lactation caused decreased BMD past the point when women would presumably start to recover bone mass lost (6% – 10%) during breastfeeding. Recent epidemiological studies have even suggested that the more a woman breastfeeds, the less bone mass she has postmenopause. "This is a revolutionary thought that effects of breastfeeding would occur longer term," Hernandez says.

In one experiment, mice were injected with either saline or the SSRI for ~42 days, from mating through lactation. Three months post-treatment, they were sacrificed to measure BMD. Mice receiving SSRIs had reduced trabecular bone volume compared to control mice.

In another experiment, mice were assigned to either a standard diet or supplemented with 24 mg/kg folic acid, a dose comparable to what women at risk for babies with neural tube defects (NTDs) are prescribed, for a two-week loading period prior to breeding. On pregnancy day 13, mice were injected with either a saline control or 18 mg/kg of fluoxetine through peak lactation. Using what the researchers call the "weigh-suckle-weigh" method, they determined milk yield as a measure of pup growth and the mammary gland's ability to make milk. Bone-health measurements demonstrated some reversal of SSRI effects on bone tissue, likely in response to the extra dietary folic acid.



The researchers had previously shown that serotonin was important to increasing mammary secretion of parathyroid hormone–related protein (PTHrP), which regulates bone resorption that is critical for normal lactation. PTHrP is released from the mammary gland via a methylation event in the sonic hedgehog promoter region that drives PTHrP synthesis during lactation. "So we started thinking, if women were taking SSRIs during pregnancy and lactation, they might be exacerbating an already normal response to lactation, which is to pull bone mass to support both the mother's calcium and milk for the baby," Hernandez says.

Their next step was to find a methyl donor to reverse serotonin's effects and replace methyl groups. "Although there are many possible dietary methyl donors, we used folic acid because it is already a common supplement for pregnant and lactating women to prevent NTDs. We hoped to manipulate that to also protect against the SSRI's bone effects," Hernandez explains.

Although the SSRI seems to contribute to increased bone resorption and long-term BMD decrease, the mother's mental health is paramount. Finding a way to treat current depression without forfeiting future bone health would be nothing short of a coup. In ongoing studies, Hernandez and colleagues plan to examine bones at other time points post-weaning, to fully delineate the mechanisms at work in this serotonin pathway, and possibly also consider other dietary methyl donors such as methionine and choline.

A Versatile Therapeutic Tool

In another study presented at **ENDO 2016**, researchers led by Felicia Cosman, MD, professor of medicine at Columbia University and Osteoporosis Specialist at Helen Hayes Hospital, Haverstraw, N.Y., have found another drug that seems to tip the bone formation/bone resorption balance in favor of formation to result in a net gain of bone. Abaloparatide, a synthetic analogue of parathyroid hormone (PTH)-related peptide, acts through the PTH-1 receptor to stimulate osteoblast formation.

In the phase 3 Abaloparatide Comparator Trial in Vertebral Endpoints (ACTIVE) study, 2,453 postmenopausal women ages 49 – 86 with osteoporosis based either on BMD or fracture risk criteria were randomized to receive either abaloparatide, placebo, or the positive control teriparatide, currently the sole anabolic agent on the market. By comparing the three arms of the trial, researchers found that abaloparatide reduced vertebral fractures by 86% and nonvertebral fractures by 43% compared to placebo, and abaloparatide reduced major osteoporotic fractures (i.e., clinical spine, wrist, proximal humerus, and hip, similar to what is used in the Fracture Risk Assessment Tool [FRAX] calculation) by 55% compared to teriparatide. Abaloparatide also increased BMD throughout the skeleton at 18 months: spine, 9.2%; total hip, 3.4%; and femoral neck, 2.9% compared to placebo.

AT A GLANCE

- **Although SSRI use during breastfeeding exacerbates bone loss, use of folic acid during pregnancy exhibits a protective effect against the otherwise SSRI-hastened bone loss.**
- **Abaloparatide is a versatile anabolic agent that affects rapid clinical improvement and can be used in multiple ways and at various stages in osteoporosis patients.**
- **Although bone resorption and formation markers cannot predict bone loss independently, combining them to see an individual's overall balance between bone loss and bone gain is now possible with the Bone Balance Index that can identify patients at risk for bone loss.**

> "The idea that patients diagnosed with osteopenia or osteoporosis in their fifties might live more than 40 years means that **we need different agents that will work in different stages and contexts.**"
>
> — FELICIA COSMAN, MD, PROFESSOR OF MEDICINE AT COLUMBIA UNIVERSITY, NEW YORK; OSTEOPOROSIS SPECIALIST, HELEN HAYES HOSPITAL, HAVERSTRAW, N.Y.

Cosman and colleagues then examined whether the effects on fracture and on BMD were consistent in women with different definitions of osteoporosis (nonvertebral fracture history, prevalent vertebral fractures, or solely BMD diagnosis), at various ages (<65 years, 65–<75 years, ≥75 years), and with BMD above and below two different cutpoints (–2.5 and –3.0 for spine, total hip, and femoral neck). They found that the effects of abaloparatide versus placebo on vertebral fractures, nonvertebral fractures, and on spine and hip BMD sites were totally consistent regardless of fracture history, BMD, or age.

"We conclude from this analysis that the effect is going to be preserved in various levels of osteoporosis," Cosman says. "We could potentially use this agent both for people with a recent fracture in whom the imminent fracture risk is very high as well as in people who start with very low BMD, even without a fracture history. Additional improvement in BMD will be seen if the latter patient starts with a drug like abaloparatide then moves to potent anti-resorptive therapy afterward."

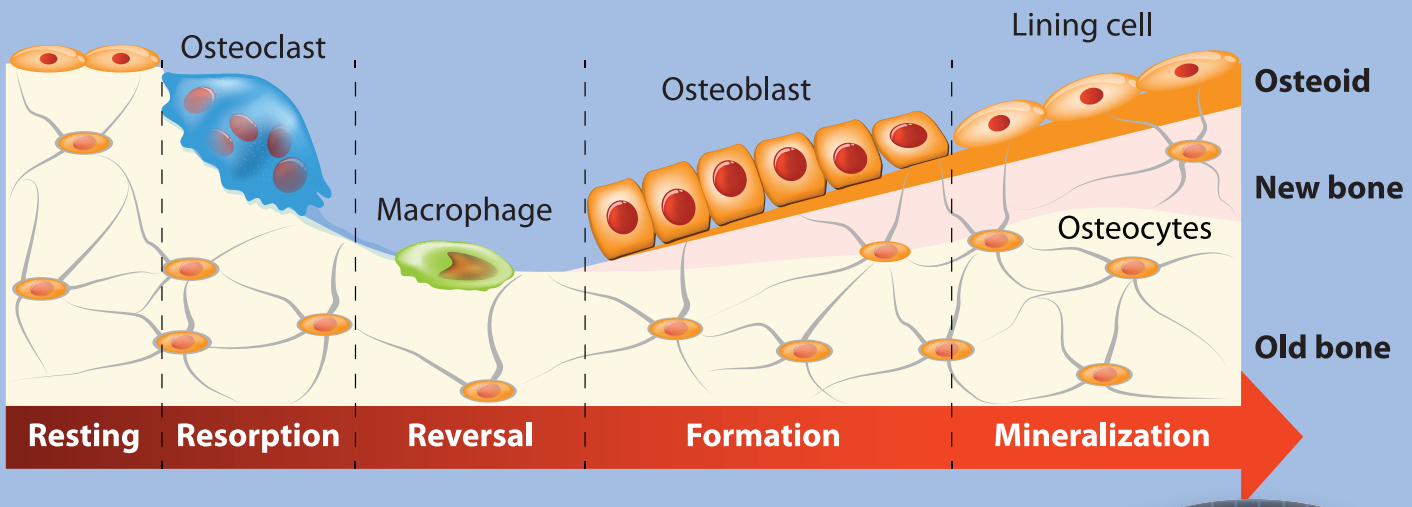
Although teriparatide has been used since 2002 and has been very effective in treating vertebral fractures, abaloparatide might decrease the risk of major osteoporotic fractures even more than teriparatide. Another distinguishing feature of abaloparatide that bears highlighting is its faster action. "If you look at the Kaplan-Meyer curve for time to first nonvertebral fracture, with abaloparatide, you see an early separation from the placebo group, whereas for teriparatide, you do not actually see the separation from the placebo group until after the first year," Cosman says. "So it may be that there is a more rapid effect and perhaps a slightly greater effect against nonvertebral fractures with abaloparatide." Their side effect profiles are also slightly different, although both are generally very well tolerated.

Despite teriparatide's proven track record, the market has room for another anabolic, as Cosman explains. "My hope is that we will be able to use both of these agents at different stages in a woman's postmenopausal lifespan," she says. "The idea that patients diagnosed with osteopenia or osteoporosis in their fifties might live more than 40 years means that we need different agents that will work in different stages and contexts. It fits in with an overall concept we are trying to develop, which is to use anabolic therapy earlier in the disease process and not to reserve this therapy only for the patient who has already sustained several fractures."

Bone Balance Index

Finally, in the July 2016 issue of *The Journal of Clinical Endocrinology & Metabolism*, "Quantifying the Balance Between Total Bone Formation and Total Bone Resorption: An Index of Net Bone Formation" showed that markers for bone turnover can be combined to provide a picture of net bone resorption

The bone remodeling process



The bone remodeling process involves the following steps: resorption, reversal, formation, mineralization, and resting. In a healthy body, osteoclasts and osteoblasts work together. The bone balance index (BBI) grew out of data gathered from 685 premenopausal or early perimenopausal women ages 42 – 52 in the 1996 – 2013 Study of Women's Health across the Nation (SWAN).

and bone formation. Knowing when these simultaneously occurring processes are out of balance could identify a patient at risk for osteoporosis. "At present, we can measure markers of bone breakdown (resorption) and formation. However, we hypothesized that to better predict how fast bone will be lost in the future, these markers should be combined in an 'index' to reflect both processes, rather than being interpreted in isolation," says study author Albert Shieh, MD, of the University of California, Los Angeles.

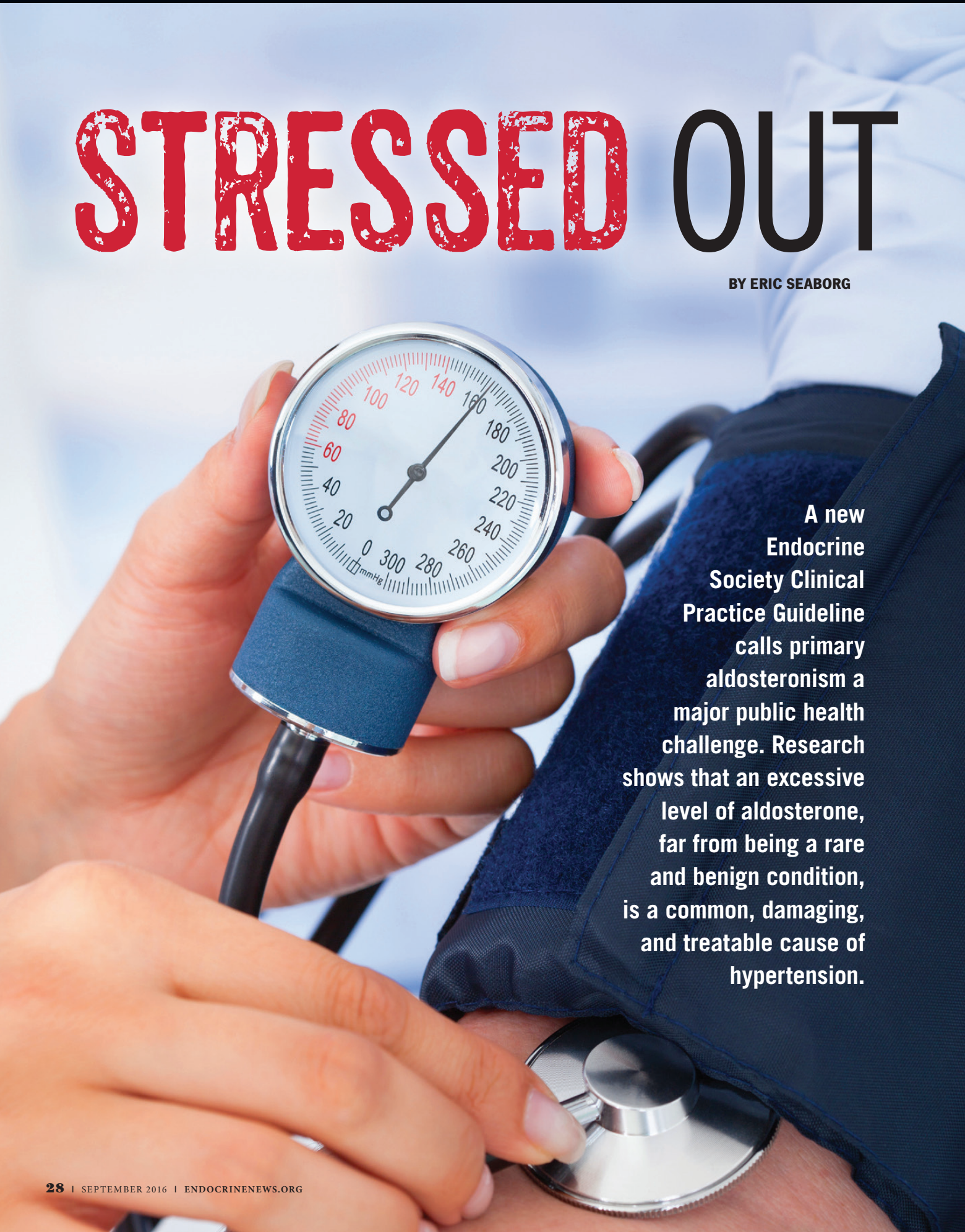
The bone balance index (BBI) grew out of data gathered from 685 premenopausal or early perimenopausal women ages 42 – 52 in the 1996 – 2013 Study of Women's Health across the Nation (SWAN). Shieh and colleagues measured urinary N-telopeptide, a resorption marker, and blood osteocalcin, as well as annual BMD as the women transitioned to menopause. The BBI — calculated from bone turnover markers collected before the final menstrual period — was able to predict which women were at risk for fast BMD loss (most notably in the lumbar spine). "We found that the ability of our new [BBI] predicted future bone loss across the menopause transition better than the bone resorption marker alone," Shieh says.

"We do have to caution that this study was proof-of-concept," Shieh says, "showing that combining bone resorption and formations markers in an index can improve our ability to predict how fast someone will lose bone across the menopause transition compared to a bone resorption marker alone." Future studies will look at whether the BBI can identify at-risk women for fast bone loss after the menopause transition (during postmenopause) and whether the BBI can be used to predict fracture risk. EN

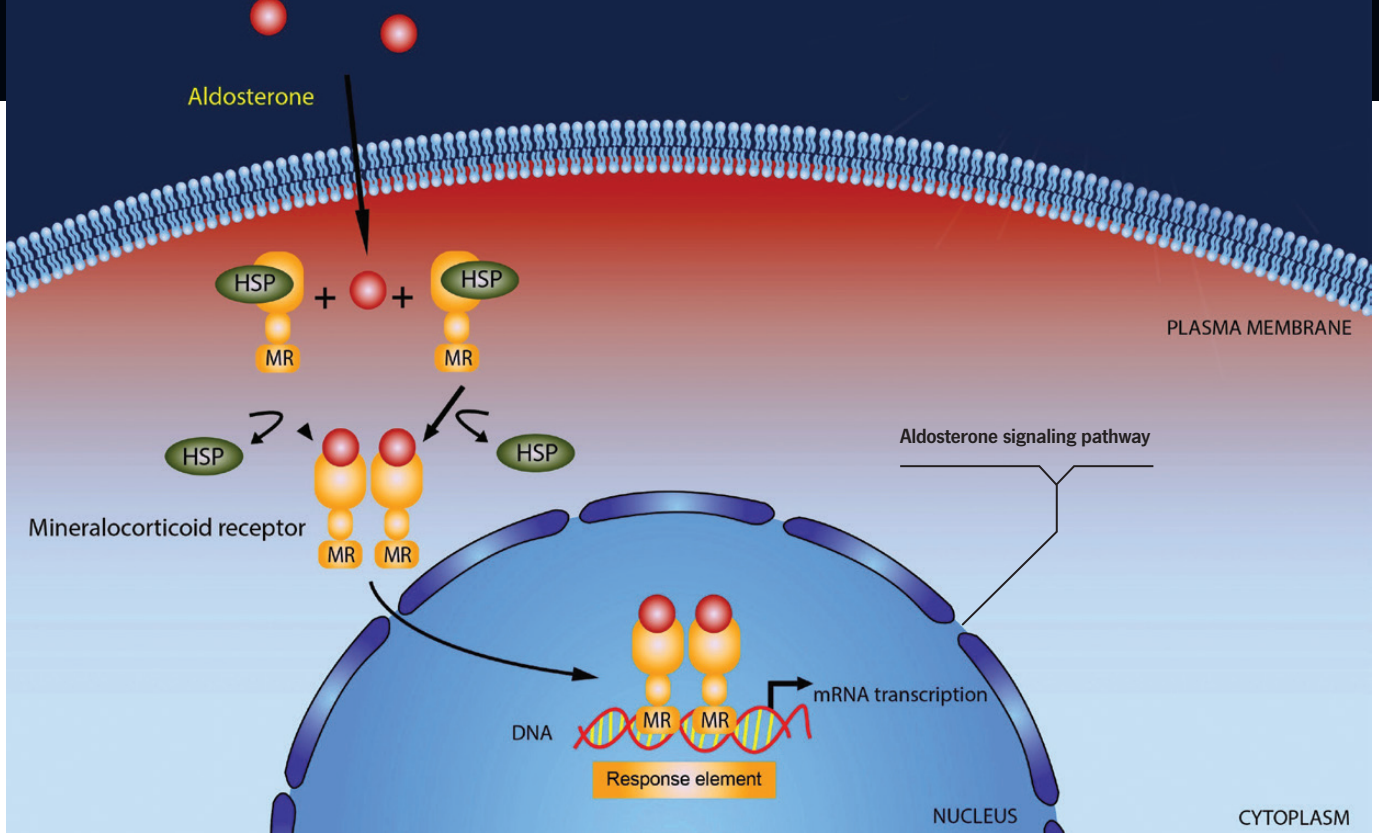
HORVATH IS A FREELANCE WRITER BASED IN BALTIMORE, MD. SHE WROTE ABOUT THE LIKELIHOOD OF SEDENTARY KIDS DEVELOPING DIABETES IN ADULTHOOD IN THE JULY ISSUE.

STRESSED OUT

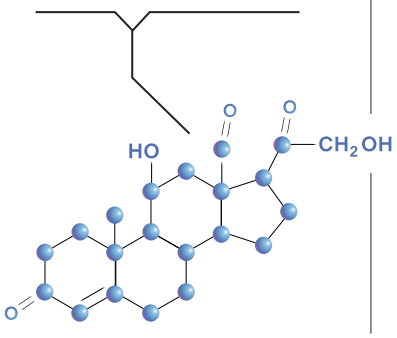
BY ERIC SEABORG



A new Endocrine Society Clinical Practice Guideline calls primary aldosteronism a major public health challenge. Research shows that an excessive level of aldosterone, far from being a rare and benign condition, is a common, damaging, and treatable cause of hypertension.



Aldosterone molecule structure. An over-production of aldosterone can lead to hypertension, along with other damaging conditions.

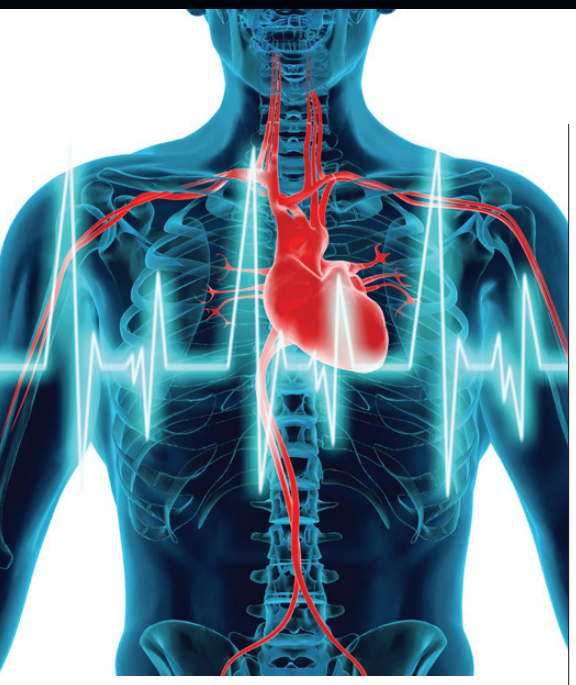


A new clinical guideline issues a "clarion call" to physicians to substantially ramp up the screening of patients at risk for primary aldosteronism (PA) because the condition — once considered rare — should be recognized as a major public health issue.

"The Management of Primary Aldosteronism: Case Detection, Diagnosis, and Treatment: An Endocrine Society Clinical Practice Guideline" appeared in the May issue of *The Journal of Clinical Endocrinology & Metabolism* and substantially revises the previous guideline published in 2008. It is available online at: www.endocrine.org/CPGPA.

"In the past eight years, we have come to recognize that primary aldosteronism, despite being quite common, frequently goes undiagnosed and untreated," says John W. Funder, MD, PhD, of the Hudson Institute of Medical Research in Clayton, Australia, and chair of the task force that wrote the guideline. "This is a major public health issue. Many people with primary aldosteronism are never screened due to the associated costs. Better screening processes are needed to ensure no person suffering from primary aldosteronism and the resulting risks of uncontrolled high blood pressure goes untreated."

Many physicians were taught that less than 1% of patients with mild-to-moderate essential hypertension had this condition, in which the adrenal glands secrete too much aldosterone, leading to hypertension, cardiovascular damage, sodium retention, suppression of plasma renin, and increased potassium excretion. But cross-sectional and prospective studies have indicated its prevalence is closer to 10% among hypertensive patients. "In no country are more than 1% of patients with primary aldosterone ever screened, diagnosed, and treated," Funder says.



> **This is a major public health issue.** Many people with primary aldosteronism are never screened due to the associated costs. Better screening processes are needed to ensure no person suffering from primary aldosteronism and the resulting risks of uncontrolled high blood pressure goes untreated."
>
> — JOHN W. FUNDER, MD, PHD, HUDSON INSTITUTE OF MEDICAL RESEARCH, CLAYTON, AUSTRALIA, AND CHAIR, GUIDELINE TASK FORCE

It is commonly caused by a unilateral adrenal adenoma or bilateral adrenal hyperplasia. Rare causes include adrenal carcinoma or inherited familial hyperaldosteronism.

Accurate diagnosis and treatment are important because studies of patients matched by age, sex, and blood pressure show that "people with primary aldosteronism have a considerably higher cardiovascular risk profile than people with essential hypertension," Funder says.

Expansion of Screening

Given that prevalence and its consequences, the guideline recommends increased screening of patients at risk.

"We have recommended that all patients with blood pressures greater than or equal to 150/100 should be screened for primary aldosteronism," says Robert M. Carey, MD, a professor of medicine at the University of Virginia who also served on the guideline committee.

In addition to that rather straightforward standard, the guideline also recommends screening patients:

- whose hypertension is resistant to three conventional anti-hypertensive drugs;
- whose hypertension is controlled by four or more medications;
- who have both hypertension and low blood potassium levels;
- who have both hypertension and sleep apnea;
- who have hypertension and a family history of early-onset hypertension or stroke before age 40; or
- who have hypertension and a first-degree relative with primary aldosteronism.

How to Screen

The guideline recommends screening patients using the plasma aldosterone/renin ratio (ARR) test. The guideline notes that the test is more sensitive when samples are collected in the morning after patients have been out of bed for two hours. And ideally, patients should not restrict sodium intake before the test, should be potassium replete, and should have taken no mineralocorticoid receptor antagonists for four weeks prior to the test.

Patients with plasma renin below detection levels, a high plasma aldosterone concentration, and spontaneous hypokalemia require no further confirmatory testing.

But in other cases, patients with a positive ARR test should have one or more confirmatory tests. There is no gold standard confirmatory test, but useful possibilities include an oral sodium loading test, saline infusion test, fludrocortisone suppression test, and captopril challenge test.

Patients with positive confirmatory tests indicating the diagnosis of PA should next have an adrenal computed tomography (CT) scan to exclude the large masses that may represent adrenocortical carcinoma. Aldosterone-producing adrenal carcinomas are very rare but are identifiable because they are almost always greater than 4 cm in diameter.

The next step is the identification of which adrenal gland is the aldosterone source, which can be done by an experienced radiologist using adrenal venous sampling to distinguish between unilateral and bilateral adrenal disease.

Treatment Options

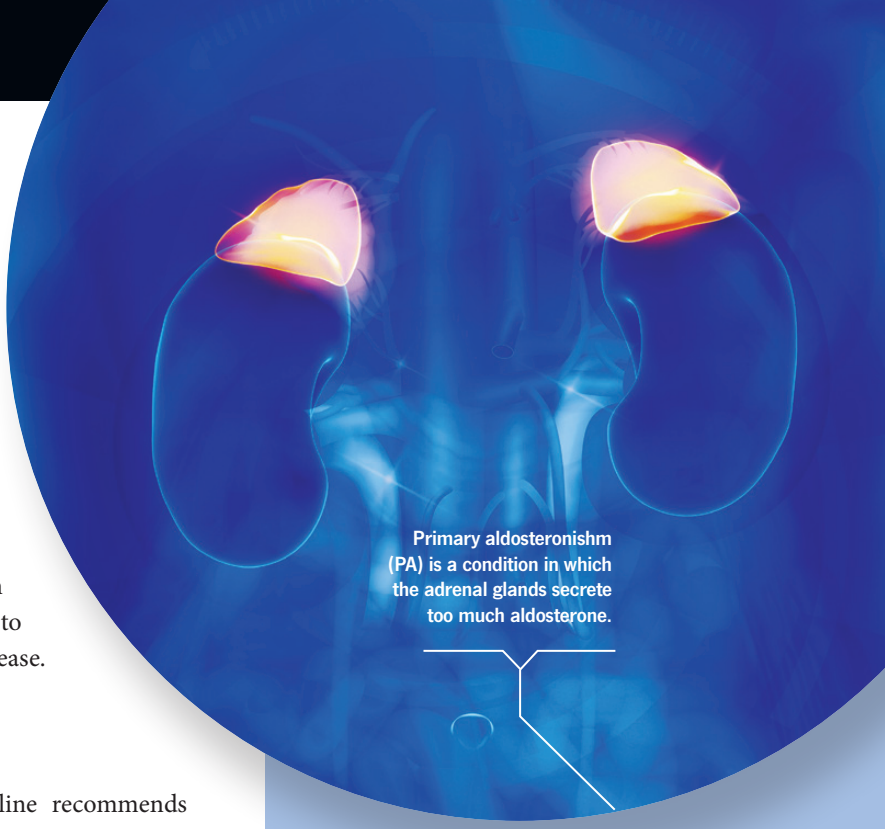
In cases of patients with unilateral PA, the guideline recommends removal of the affected organ via a laparoscopic procedure. Blood pressure and serum potassium concentrations improve in nearly all these patients after the procedure, with hypertension cured — defined as blood pressure brought below 140/90 mm Hg without drugs — in about 50% of patients.

Patients with bilateral disease and those unable or unwilling to undergo surgery for unilateral PA should receive medical treatment with a mineralocorticoid receptor (MR) antagonist. The guideline suggests spironolactone as the primary agent, with epleronone as an alternative. "MR antagonists appear to be effective at controlling blood pressure and protecting target organs independent of effects of blood pressure," the guideline says.

Spironolactone has been the MR antagonist agent of choice in the medical treatment of PA for decades. Its side effects are dose-dependent and include gynecomastia, breast engorgement, erectile dysfunction, muscle cramps, and menstrual disturbances. The side-effect profile may lead to compliance issues as much from a patient being worried by Internet research as their actual incidence, Funder says.

Epleronone is a newer, selective MR antagonist without spironolactone's androgen- and progesterone-related side effects. However, epleronone's better tolerability profile needs to be balanced against its higher cost; its lower MR antagonist potency and potential to lower blood pressure in PA compared with spironolactone; and its shorter half-life.

The guideline also notes that the diagnosis can be difficult and involve many steps. In cases in which the evaluation is getting bogged down or a patient is resistant to more tests, treating the patient's hypertension with an MR antagonist can be an acceptable option.



Primary aldosteronism (PA) is a condition in which the adrenal glands secrete too much aldosterone.

AT A GLANCE

- Many physicians have been taught that primary aldosteronism is a rare and benign cause of hypertension, but it is now believed to affect about 10% of patients with essential hypertension.
- Patients with primary aldosteronism have higher cardiovascular morbidity and mortality than patients with essential hypertension, so increased screening of patients at risk could improve outcomes.
- Treatment with surgery or mineralocorticoid receptor antagonists can effectively reduce blood pressure in primary aldosteronism, but few patients are receiving appropriate care.

Adrenal gland showing the central (blue) medulla, surrounded by cortex with three distinct zones from outside to inside — zona glomerulosa, fasciculata (pale zone in the middle), and reticularis. An adrenal CT scan is used to exclude large masses that may represent adrenocortical carcinoma in cases of PA diagnosis.

Evaluating the Guideline

"There was a huge amount of literature published in the years since the first guideline, and it is summarized nicely," says Richard J. Auchus, MD, PhD, professor of internal medicine and pharmacology at the University of Michigan, who was not involved in writing the guideline. "The guideline committee did a really good job of assembling all of this and doing justice to the new developments."

Auchus also praised the guideline's writers for streamlining the diagnosis process. "The problem with this disease is that the evaluation can be really complicated, but they try to keep it appropriately simple, without dismissing the caveats," Auchus says. He notes that endocrinologists are not likely to be on the front lines of the diagnosis so they "are obligated to educate primary care doctors about the importance of screening the indicated patients for primary aldosteronism."

Alerting Primary Care Physicians

The guideline committee takes this obligation seriously, noting: "Many practicing physicians were taught that PA is a rare and benign cause of hypertension, and ... thus merely a footnote to the management of hypertension as a whole. In the next five years, cardiologists and endocrinologists need to work together so that those whose responsibility is primary care are made keenly aware [of the high prevalence] of PA ... in hypertensives."

To further this goal, the Endocrine Society is working to develop "a simple and accessible guideline for screening and referral for widespread national use, and, if possible, international distribution," with primary care doctors as a main target.

Funder notes that primary aldosteronism "is clearly a hormone disease," and primary care physicians should be made aware that many of their patients with hypertension should be referred to an endocrinologist rather than a cardiologist. EN

SEABORG IS A FREELANCE WRITER BASED IN CHARLOTTESVILLE, VA. HE WROTE ABOUT THE RIFT BETWEEN ENDOCRINE-DISRUPTING CHEMICAL RESEARCHERS AND REGULATORS IN THE AUGUST ISSUE.

THE ENDOCRINE SOCIETY IS PLEASED TO ANNOUNCE THE

2017 Laureate Awards Winners

FRED CONRAD KOCH LIFETIME ACHIEVEMENT AWARD
Walter L. Miller, MD

GERALD D. AURBACH AWARD FOR OUTSTANDING TRANSLATIONAL RESEARCH
Eva L. Feldman, MD, PhD

INTERNATIONAL EXCELLENCE IN ENDOCRINOLOGY AWARD
Chandrika Wijeyaratne, DM

OUTSTANDING CLINICAL INVESTIGATOR AWARD
Joel S. Finkelstein, MS, MD

OUTSTANDING CLINICAL PRACTITIONER AWARD
Daniel Einhorn, FACE, FACP, MD

OUTSTANDING EDUCATOR AWARD
Laurence Katznelson, MD

OUTSTANDING INNOVATION AWARD
Matthias Tschöp, MD

OUTSTANDING LEADERSHIP IN ENDOCRINOLOGY AWARD
Teresa K. Woodruff, PhD

OUTSTANDING MENTOR AWARD
Margaret E. Wierman, MD

OUTSTANDING PUBLIC SERVICE AWARD
Larry D. Bowers, PhD

OUTSTANDING SCHOLARLY PHYSICIAN AWARD
Rebecca S. Bahn, MD, FRCPI

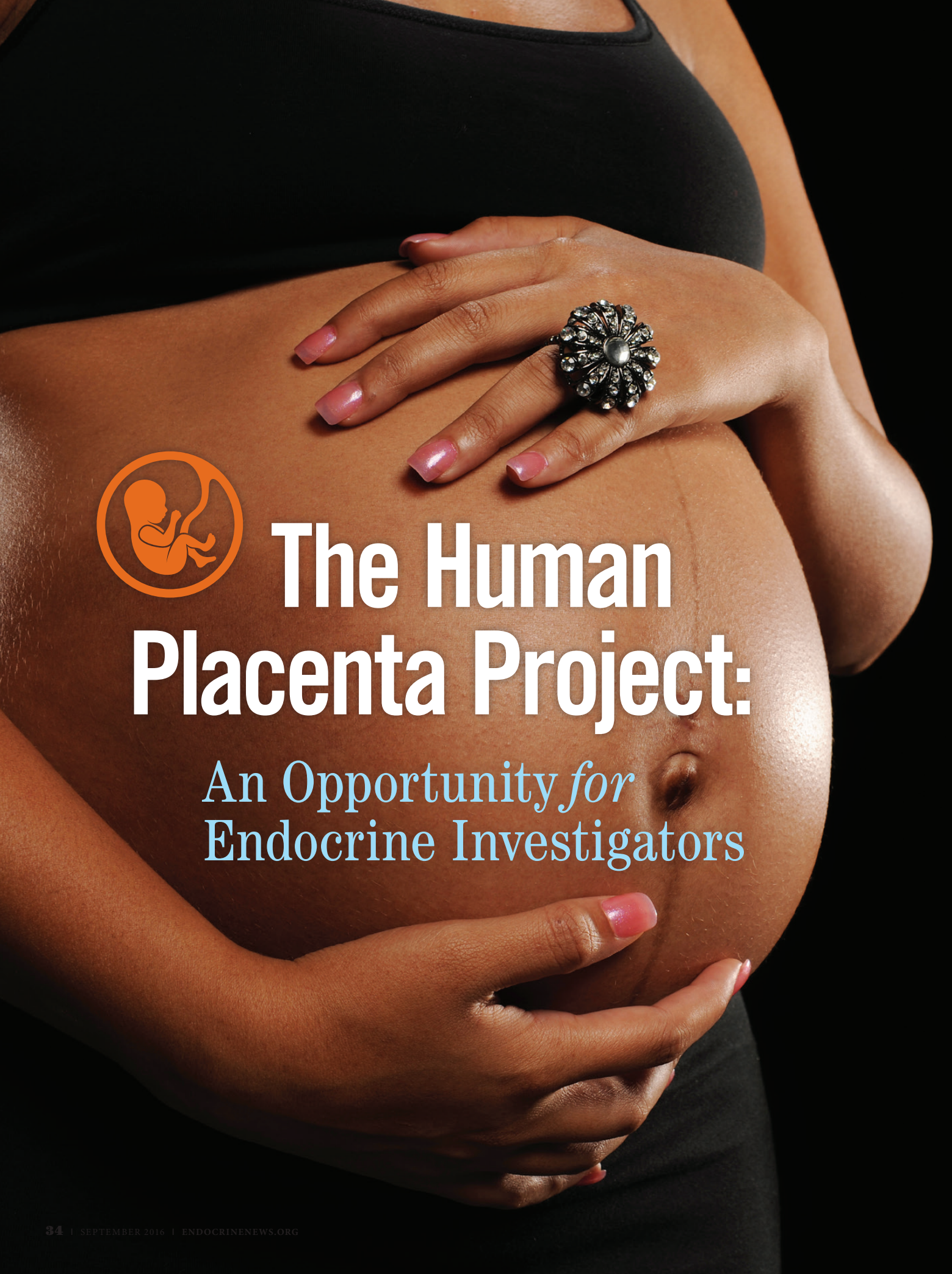
RICHARD E. WEITZMAN OUTSTANDING EARLY CAREER INVESTIGATOR AWARD
Nima Sharifi, MD

ROY O. GREEP AWARD FOR OUTSTANDING RESEARCH
Klaus H. Kaestner, PhD

SIDNEY H. INGBAR AWARD FOR DISTINGUISHED SERVICE
Janet E. Hall, MSc, MD

Awards will be presented at ENDO 2017: The 99th Annual Meeting & Expo in Orlando, FL, April 1-4, 2017.

ENDOCRINE SOCIETY 1916-2016 100 YEARS OF HORMONE SCIENCE TO HEALTH



The Human Placenta Project:

An Opportunity *for* Endocrine Investigators

Endocrine News spoke with David Weinberg, PhD, project lead for the Human Placenta Project, about why this new initiative is so important and how Endocrine Society members can become involved.

> “We recognize the tremendous value of endocrinologists to this important effort and are **eager for their input and contributions.**”
>
> — DAVID WEINBERG, PHD

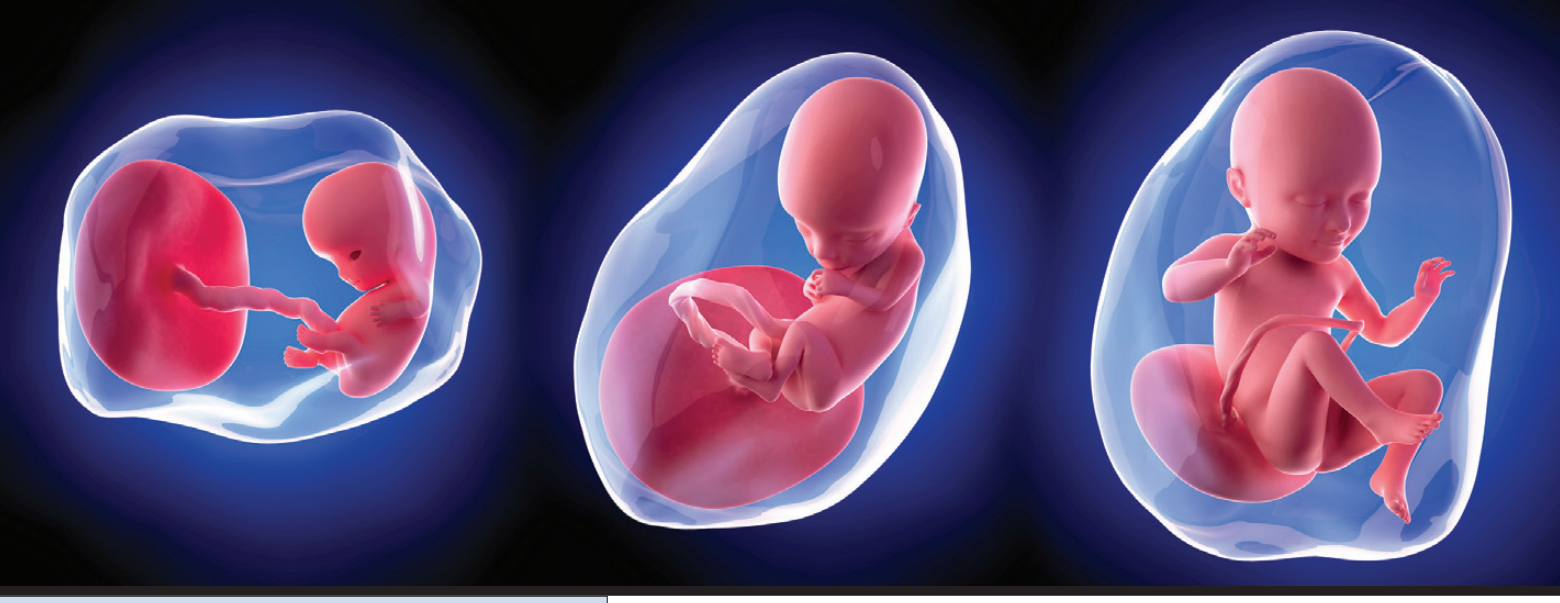
The Human Placenta Project (HPP) was launched in the spring of 2014 by the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD). The goal of the project is to develop the tools and technologies necessary to safely and non- or minimally invasively assess placental structure, function, and development across pregnancy in real time.

Endocrine News: Why is the Human Placenta Project important?

David Weinberg: Proper development and functioning of the placenta is critical to the health of the developing fetus. It serves as the lungs, kidneys, liver, immune system, and endocrine system, making hormones to help the fetus grow. We know that placental dysfunction can lead to pregnancy complications and health problems for mother and baby that extend far beyond birth.

Yet despite its importance, the placenta is perhaps the most poorly understood of human organs. Assessment of the placenta across pregnancy presents special challenges due to the need to avoid risk to the pregnant woman and developing fetus. Thus, most information on human placental biology is obtained by studying placental tissue obtained after delivery, often from pathological pregnancies such as preterm deliveries occurring predominately in the third trimester, from term deliveries in which placental development has already crested, or from in vitro model systems. There is a paucity of information obtained earlier in gestation when many pregnancy pathologies have their origins and limited information gleaned throughout gestation from normal pregnancies.

The development of real-time, non- or minimally invasive methods to assess the development and function of the placenta in vivo safely throughout gestation would serve as valuable research and clinical tools for enhancing understanding of placental biology and rooted pathologies and for patient management. These research efforts may yield new insights into other areas of medicine as well, such as organ transplantation, cancer, and immunology.



RESEARCH OBJECTIVES

The Human Placenta Project has five main research objectives:

- Improve current methods and develop new technologies for real-time assessment of placental development across pregnancy.
- Apply these technologies to understand and monitor, in real time, placental development and function in normal and abnormal pregnancies.
- Develop and evaluate non-invasive markers for prediction of adverse pregnancy outcomes.
- Understand the contributions of placental development to long-term health and disease.
- Develop interventions to prevent abnormal placental development, and hence improve pregnancy outcomes.

EN: What do you hope to accomplish through the Human Placenta Project?

DW: In preparation for studying the human placenta, the goal of the HPP is to develop the tools and technologies necessary to safely and non- or minimally invasively assess placental structure, function, and development across pregnancy in real time. We believe this can be achieved by drawing in researchers from diverse areas of science and by leveraging technologies developed for other organs or diseases. For example, non-invasive imaging methods such as MRI, ultrasound, and optical technology have shown tremendous utility in the areas of cancer, brain, and cardiovascular research, and suggest that application of these technologies to the placenta may be feasible. In addition, increased assay sensitivity for analytes present in body fluids and miniaturization of sensing devices offer the promise of minimally invasive continuous monitoring capability. Many of these technologies in their current forms cannot be applied directly to pregnant women, but they provide a window into what may be accomplished.

Once we have a clearer picture of normal placental development, we may be able to spot — and possibly even prevent — potential problems earlier in pregnancy, to ensure better outcomes for mother and baby.

EN: How is NICHD supporting this effort?

DW: The HPP is a key priority for our institute, and we are supporting the effort with outreach and funding. Our first task is to increase interest in the broader scientific research community; to engage not just placental biologists and obstetricians, but also researchers in other fields who haven't spent time thinking about the placenta but may have creative ideas to contribute. The success of our efforts relies on research across these disciplinary boundaries.

To raise awareness and encourage scientific interest and collaboration, we are speaking at national and international meetings and hosting meetings of

> **Once we have a clearer picture of normal placental development,** we may be able to spot — and possibly even prevent — potential problems earlier in pregnancy, to ensure better outcomes for mother and baby."
>
> — DAVID WEINBERG, PHD

our own. We've held a number of meetings at the NIH campus in Bethesda, Md., and we would love to have more members of the Endocrine Society attend and help inform our research plans.

The NIH has also made significant investments in the HPP. Since the project launch in 2014, we have issued funding opportunity announcements (FOAs) totaling more than $50 million. The initial FOA provided funds for the development of transformative technologies, the generation of diverse research teams, and the exploration of environmental influences on placental development and function in vivo during pregnancy. The subsequent FOA will support the use of "omics" to monitor placental development and function across pregnancy. The most recent FOA will support studies that use existing data sets. We look forward to seeing what our grantees produce. Stay tuned for details about future funding opportunities.

EN: How can endocrine researchers get involved?

DW: The endocrine system plays a vital role in placental development and function across gestation. The basic research provided by the endocrine research community has provided the foundational knowledge that makes the goals of the HPP seem feasible and will continue to be critical as novel technologies and assessments become available.

So, the HPP could benefit tremendously from the contributions of Endocrine Society members both as investigators and as intellectual drivers of the research plan moving forward. We welcome placental research grant applications from endocrinologists and would be happy to see more endocrine researchers at HPP meetings. There is already strong support from the endocrine community, and we look forward to continued partnership in this effort. We recognize the tremendous value of endocrinologists to this important effort and are eager for their input and contributions. EN

FOR MORE INFORMATION

The project's website, http://www.nichd.nih.gov/hpp, has full details about the HPP, funding opportunities, and meetings, including links to archived videos from past events.

Endocrine Society members may also contact Weinberg directly about the HPP at NICHDHPP@mail.nih.gov.

Too Much Information

With more in-depth scientific research comes more data. And with more data, comes more problems. What are the obstacles facing "Big Data" research in healthcare?

BY MELISSA MAPES

For years now, chatter about the potential of big data for healthcare research has rippled through the scientific world. Talk of collaborative databases and advanced analytics have led to a bumper crop of initiatives — ranging from federal programs to for-profit software platforms — but the outcomes of these projects have been mixed. Rather than eureka moments, researchers are running into a common series of obstacles that threaten to undermine the bright prospects of big data for medical studies.

At the center of many data debates is genetics. Now that complete genome sequencing is more accessible than ever, thousands of genetic studies and vast quantities of individual genomic data are being generated each year from labs across the globe — a possible boon for finding mutations behind various diseases and developing targeted treatments. But what happens to this data after it's gathered? Where does it go?

The answers to these questions vary from data set to data set. Researchers eager to advance medicine through existing big data must often navigate a decentralized, Kafkaesque maze to obtain the information they seek.

These three issues outline the most prevalent hurdles facing scientists and bureaucrats alike in the quest to turn big data into big discoveries.

Irreconcilable Differences

Different formats, processes, regulations, and languages can all contribute to the challenge of combining data sets. In the U.S. alone, the variety of electronic health record (EHR) systems still number in the hundreds. Rarely do two systems communicate easily — making it exceedingly difficult to share data across hospitals and other institutions.

The problem has become less about collecting big data and more about using what already exists. According to Eric Dishman, director of the Obama administration's Precision Medicine Initiative (PMI) Cohort Program and a cancer survivor, only 4% of cancer patients' data is available to researchers among all those who have participated in clinical trials.

"This is one of the biggest of the big data challenges that we're ever going to have to solve," Dishman says.

As the leader of the new PMI Cohort Program, he and his team aim to gather more than one million volunteers to participate in an ambitious longitudinal study that will collect health information over the course of many years. While this initiative is just getting off the ground, the National Institutes of Health (NIH) Big Data to Knowledge (BD2K) project has been working to support biomedical data science-based research since 2012. BD2K is pushing for open access and better tools to help scientists extract actionable findings from big data.

The organization has been holding international data forums, hackathons, and other community-focused events with the hopes of bringing experts together to solve incompatibility and foster cooperation. There is no singular solution on the horizon, but efforts like PMI and BD2K are building a foundation for greater access and compatibility in the future.

A Decentralized Growth Spurt

It's not just about integrating different repositories — the sheer quantity of medical data being collected makes storage and analysis an ungainly endeavor.

"If you sequenced the genes of the 1.65 million Americans who are going to be diagnosed with cancer this year just once, and then you add clinical and imaging data from their electronic health records, you'd have 4 exabytes of data. That is the equivalent of all of the data that's in the Library of Congress," Dishman explained to *U.S. News & World Report.*

Genome sequencing is a primary contributor to the quantity problem, given that the associated costs have dropped and demand has sharply spiked. A study published in *PLOS Biology* estimates that the storage needs for genetic data alone will outpace those of major social media channels like YouTube and Twitter by 2025.

This enormous growth is occurring in a mostly decentralized manner, resulting in many inefficiencies and a lack of consensus among data sets. As challenging as it may be to figure out technical issues like formatting, philosophical issues, like the definition of "good data," are even trickier. The meaning of this phrase is widely open to interpretation, but without agreed upon parameters for quality, the consistency of big data is being compromised.

These questions of quantity and quality are hindering the rate of analysis. The scientific journal *Nature* describes genetic data repositories as "balkanized" — implying that the subsets of groups collecting genomic data are not only uncoordinated and overflowing, but potentially hostile toward one another.

Competing Interests

Due to the way incentives are structured, organizations look to safeguard their data assets to keep other institutions from receiving credit for their efforts and ultimately profit in funding for further research. Sharing data is thus perceived as risky, and collaboration becomes tricky.

"Research dollars and grants flow in the direction of who gets credit," said President Barack Obama during a speech about the Precision Medicine Initiative. "Redesigning…grant making to encourage collaboration rather than siloing — that's going to be important."

Another hindrance to accessibility is the interest of privacy. In the digital age, there is no way to be 100% certain about the data security — a fact that concerns patients, providers, and institutions alike.

"Privacy is one of the big reasons that data can't be shared," writes technology journalist Sean Captain in an article about the PMI for *Fast Company.* "In theory, it can be anonymized and/or shared with a patient's consent, but institutions are wary of the liabilities if data gets out."

The White House has drafted a proposal for maintaining data security in the PMI, yet it remains a sensitive issue for big data across the medical community.

Like a first draft of a great literary work, the story of big data in healthcare is messy. The only way to refine the associated systems is through creativity, organization, and collaboration. While the potential for massive data sets remains promising, leaders in science and policy are still figuring out how to wrangle the mass of medical information that's being gathered every day — highlighting certain weaknesses in the world's healthcare hierarchy along the way. EN

MAPES IS A WASHINGTON, D.C.–BASED FREELANCE WRITER AND A REGULAR CONTRIBUTOR TO *ENDOCRINE NEWS*. SHE CONDUCTED A Q&A WITH DAN GORELICK, PHD, IN THE AUGUST "LABORATORY NOTES."

Where to find BIG DATA

A number of private, governmental, and nonprofit institutions publicly offer information and research that can be further analyzed and incorporated into original studies. The U.S. National Library of Medicine offers a long list of health data resources under the Health Services Research Information Central, ranging from the Center for Disease Control and Prevention's "Sortable Stats" of state-level data to the World Bank's Health, Nutrition, and Population Data and Statistics.

These items have been curated based on quality, authority, uniqueness, and can all be accessed at www.nlm.nih.gov/hsrinfo/datasites.html.

LAST CALL

VOTE

2017 ELECTION

TIME IS RUNNING OUT TO VOTE.

Who will be your future Endocrine Society leadership? Cast your vote today at endocrine.org/election.

Questions should be directed to election@endocrine.org or call 202.971.3636.

VOTES MUST BE SUBMITTED BY OCTOBER 2, 2016 AT MIDNIGHT (EDT).

ENDOCRINE SOCIETY

1916-2016 100 YEARS OF HORMONE SCIENCE TO HEALTH

Medicare Physician Fee Schedule Rule Released; Includes Revisions to Codes, NDPP Expansion

The Centers for Medicare and Medicaid Services (CMS) released the Proposed Rule for the 2017 Medicare Physician Fee Schedule (PFS), which sets payment policy for the Medicare program for the upcoming year.

CMS is proposing a number of new policies that will improve Medicare payment for those services provided for patients with multiple chronic conditions, improve payment accuracy for cognitive services, and expand the National Diabetes Prevention Program (NDPP).

CMS is proposing several revisions to the PFS billing code set to more accurately recognize the work of primary care and other cognitive specialties to accommodate the changing needs of the Medicare patient population. Historically, care management and cognitive work have been "bundled" into the evaluation and management (E&M) visit codes used by all specialties. This has meant that payment for these services has been distributed equally among all specialties that report the visit codes instead of being targeted toward practitioners who manage care and/or primarily provide cognitive services.

CMS' efforts to address this inaccuracy have included the creation of new codes that separately pay for chronic care management and transitional care management services. Proposals for 2017 include:

- Making separate payments for certain existing Current Procedural Terminology (CPT) codes describing non-face-to-face prolonged evaluation and management services.
- Revaluing existing CPT codes describing face-to-face prolonged services.
- Making separate payments for codes describing chronic care management for patients with greater complexity.
- Making several changes to reduce administrative burden associated with the chronic care management codes to remove potential barriers to furnishing and billing for these important services.

The Endocrine Society has been working with a coalition of cognitive specialty organizations to urge CMS to revalue the E&M codes to account for the changing role of the cognitive specialist in management of patients with complex conditions. We are pleased that CMS has proposed these policy changes in the Proposed Rule and believe they will lead toward more equitable payment for cognitive services by our members.

TAKE ACTION:

Congress must pass appropriations bills in September to keep the government operating after September 30th.

Send a letter to your members of Congress today about the importance of NIH and the need to prioritize and support NIH. Enter your ZIP code at www.endocrine.org/advocacy to send your letter today.

The Rule also proposes to expand the duration and scope of the NDPP pilot and refer to the new program as the Medicare Diabetes Prevention Program (MDPP). The proposed rule provides a basic framework for the MDPP, and CMS notes that if finalized, it will engage in additional rulemaking within the next year to establish specific MDPP requirements. CMS proposes MDPP will be a 12-month program using the Centers for Disease Control and Prevention (CDC)-approved DPP curriculum. CMS' overview of the MDPP program includes the following proposals:

- A program with 16 core sessions over 16 – 26 weeks and the option for monthly core maintenance sessions over six months thereafter if beneficiaries achieve and maintain a minimum weight loss.
- Any organization recognized by the CDC to provide DPP services would be eligible to apply for enrollment in Medicare beginning on January 1, 2017.
- Full implementation of the MDPP expansion would begin on January 1, 2018.
- Payment for MDPP services would be tied to the number of sessions attended and achievement of a minimum weight loss of 5% of baseline weight.
- MDPP suppliers would be required to attest to beneficiary session attendance and weight loss at the time claims are submitted to Medicare.
- MDPP is available to Medicare beneficiaries who: 1) are enrolled in Medicare Part B; 2) have a body mass index of at least 25 or at least 23 if self-identified as Asian; and 3) have within 12 months prior to attending the first core session a hemoglobin A1c test with a value between 5.7 and 6.4, or a fasting plasma glucose of 110-125 mg/dL, or a 2-hour post-glucose challenge of 140-199 mg/dL.
- Providers could deliver DPP services in-person or via remote technologies.

The Society has advocated for the expansion of the NDPP for many years, and we are pleased that CMS has recognized the important role that the NDPP plays in reducing the progression of pre-diabetes to diabetes.

We will provide comments on the Proposed Rule to CMS. The final rule is expected in early November.

Robert M. Califf, MD, FDA's Commissioner of Food and Drugs

Society Meets with FDA Commissioner to Discuss Regulatory Priorities

The Society met with the U.S. Food and Drug Administration (FDA) commissioner Robert Califf, MD, in August to discuss the agency's priorities for the coming year.

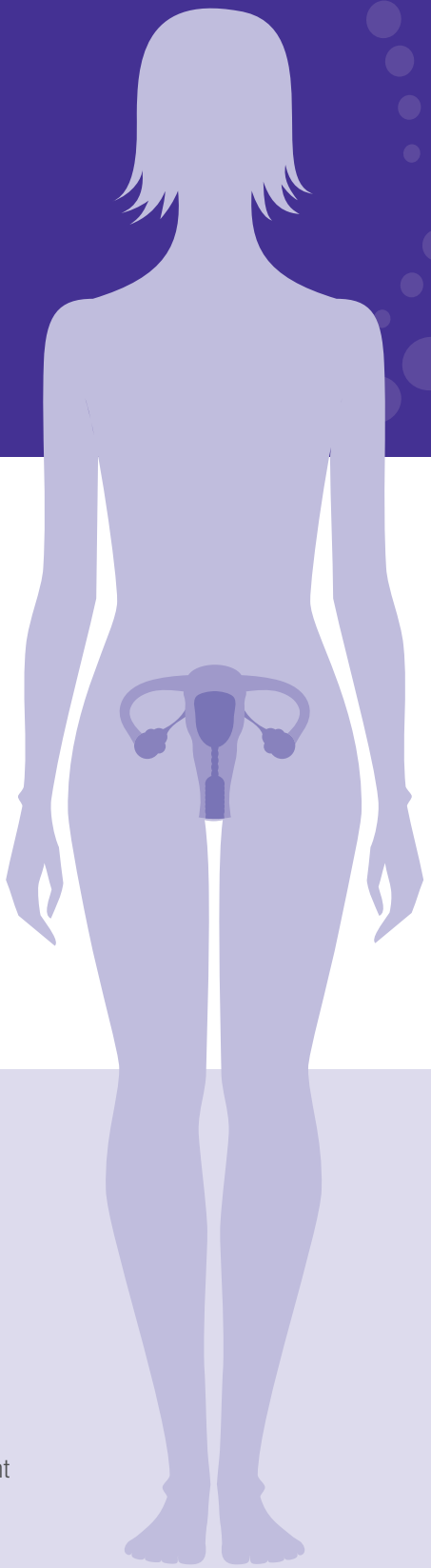
The meeting was held in conjunction with other stakeholders in the areas of endocrinology and metabolism, pulmonary, heart, and kidney diseases to examine ways in which the Society can work with them to address regulatory gaps under the purview of the FDA.

The Society highlighted its work in advancing access to diabetes therapies, ensuring that sex is a critical biological variable in clinical trials, developing a regulatory framework for reducing harmful exposure to endocrine-disrupting chemicals, regulating compounding pharmacies, and addressing clinical trials for orphan drugs during this meeting.

We look forward to continuing to work with the FDA to address these and other issues in the future. EN

POLYCYSTIC OVARY SYNDROME WHAT YOU NEED TO KNOW

The endocrine system is a network of glands and organs that produce, store, and secrete hormones. Normally, women make small amounts of "male" hormones (called androgens), but women with Polycystic Ovary Syndrome (PCOS) produce slightly higher amounts of androgens. This hormone imbalance causes an assortment of health problems, many of which are related to the reproductive system.



WHAT IS PCOS?

A hormonal disorder that may be characterized by a constellation of symptoms that may include:

- Irregular or absent menstrual periods
- Infertility
- Weight gain (especially at the waist)
- Acne
- Excess hair on the face and body
- Thinning scalp hair
- Skin tags
- Darkening skin
- Depression or anxiety
- Poor sleep

When the body cannot use insulin properly, it secretes more insulin to make glucose available for cells. Often linked to **obesity**, many women with PCOS tend to make too much insulin. The resulting excess in insulin is thought to also boost male hormone or **androgen production** by the ovaries.

POTENTIAL PCOS CAUSES

Although we don't know for sure what causes PCOS and none of these is a direct cause, each one is highly related to the condition.

Insulin Resistance — some women are less sensitive to insulin than normal, which makes their ovaries produce too many male hormones.

Genetics — PCOS appears to run in families, so having a mother or sister with the condition makes you more likely to have it.

Obesity — because women and girls with PCOS are more likely to gain excess weight and women and girls who are obese are more likely to have the condition, there is a tight, but not absolute, link between the two.

Visit hormone.org for more information.

Additional Editing by Genevieve Neal-Perry, MD, PhD,
University of Washington

Hormone Health NETWORK®
Keep your body in balance

PCOS CAN AFFECT A WOMAN'S:

- Menstrual cycle
- Ability to have children
- Hormones
- Heart
- Blood vessels
- Appearance
- Mental health
- Risk for cancer
- Metabolic syndrome

On ultrasound, the ovaries appear to have a multiple number of small follicles (also called cysts) that are often arranged in a ring around the ovary. Science indicates these are related to arrested egg development and failed ovulation.

DID YOU KNOW?

Women with PCOS often have type 2 diabetes, low levels of good cholesterol (HDL), and high levels of bad cholesterol (LDL) and other blood fats, including triglycerides. These may increase the risk of heart attack or stroke.

PCOS affects **7-10%** of women of childbearing age and is one of the most common causes of infertility.

In the United States, an estimated **5-6 million** women have PCOS.

Sleep apnea may occur in up to **50%** of women with PCOS.

Pregnant women with PCOS appear to have higher rates of:

- Miscarriage
- Diabetes during pregnancy
- Pregnancy-induced high blood pressure (preeclampsia)
- Premature delivery
- Endometrial cancer

Source: U.S. Department of Health and Human Services and National Institutes of Health

TREATMENT

In addition to medications to help manage your symptoms, a healthy diet and brisk physical activity are nearly always part of a treatment plan for PCOS. Attention to blood sugar levels is also very important. Be sure to follow your treatment plan exactly as your doctor prescribes so you can control your PCOS symptoms and reduce risk factors that can change the quality of your life.

5 STEPS TO LIVING BETTER WITH PCOS

- Limit processed foods
- Add more whole grains
- Eat more fruits, vegetables, and lean meats
- Maintain a healthy weight
- Get moving

Patients have questions. We have answers.

The Hormone Health Network is your trusted source for endocrine patient education. Our free, online resources are available at **hormone.org**.

Hormone Health NETWORK® FROM THE ENDOCRINE SOCIETY