

FEBRUARY 2017

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

Endocrine news

INTERNATIONAL

Patients ARE A Virtue

Patient-centered care is not simply another passing fad. In fact, your clinical practitioner colleagues say it is something that ALL physicians should strive for in their practices.

HEART SMART:

The role of soy and air pollution in cardiometabolic disease

AN EVEN KEEL:

Watching hormone levels when treating hypopituitarism

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Hormone Science to Health

Endocrine news

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The concept of patient-centered care has as many definitions as there are practicing physicians. *Endocrine News* reached out to a handful of Endocrine Society members to get their opinions on this concept and how it can be used to the benefit of an endocrinology practice, as well as the patients.

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FROM THE **EDITOR**

FEBRUARY 2017

Endocrine news

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

Patient-Centered Care: It's Not Just A Trend

THIS MONTH'S COVER STORY, "HANDLE WITH CARE" (P. 22) by senior editor Derek Bagley, has proven to be an extremely popular topic among our practicing clinician members. In fact, it has proven so popular that we had to break it up into two parts! This is also a different type of article for *Endocrine News*, at least in the course of the past four years: It's a roundtable. Derek reached out to several members to discuss the notion of patient-centered care, and they had a lot to say about it. Overall, the consensus was that patient-centered care is something ALL physicians should strive for, as it lets the patient play a role in the decision-making process while taking into account each patient's unique needs and care goals.

According to Carol Greenlee, MD, FACE, FACP, a practicing endocrinologist at Western Slope Endocrinology, in Grand Junction, Colo., most clinicians think that they are already patient-centered because they care about their patients. "But that does not mean they provide patient-centered care or practice in a patient-centered approach," she says, adding, "I thought I was patient-centered because I cared ... but then I had to uproot my mental model to really become patient-centered."

In honor of American Heart Month, *Endocrine News* is devoting a significant amount of space to the topic of how the endocrine system and the cardiovascular system impact each other. On page 28, Kelly Horvath explores these interdependent links in "Take Heart," as well as the challenges endocrinologists have when they face patients who have a cardiovascular condition along with an endocrine disorder. Victor Novack, MD, PhD, of Soroka University Medical Center and Ben-Gurion University, in Beer Sheva, Israel, talks in great detail about his study published in *The Journal of Clinical Endocrinology & Metabolism* that explores the relationship between cardiovascular issues and the environment, specifically air pollution. "Several studies ... have addressed the link between air pollution and heart diseases," he says, "but the question whether the exposure to air pollution triggers or causes these events is yet unclear. Further studies are needed in order to address this gap in knowledge." The article also pursues another study regarding soy intake in patients with polycystic ovary syndrome who have seen their cardiometabolic measures improve. More potential good news from the world of endocrine science! **EN**

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

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Endocrine News informs and engages the global endocrine community by delivering timely, accurate, and trusted content covering the practice, research, and profession of endocrinology.



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The mission of the Endocrine Society is to advance excellence in endocrinology and promote its essential and integrative role in scientific discovery, medical practice, and human health.

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There Will Be Something for Everyone at ENDO 2017

A HIGHLIGHT OF MY PRESIDENCY HAS BEEN working with the Annual Meeting Steering Committee (AMSC) to craft an innovative program that brings distinguished speakers to present scientific advances, improvements in patient care, and dynamic educational offerings to be presented at **ENDO 2017**. Under the outstanding leadership of its chairs, Gary Hammer, MD, PhD, Carolyn Smith, PhD, Jack Leahy, MD, and Ann Danoff, MD, the AMSC has created a spectacular annual meeting, which is only two months away!

The plenary session topics are dramatically varied, ranging from the evolution of steroids and their receptors to the science and social issues surrounding transgender medicine. I am particularly excited about the Presidential Plenary in which Jeffrey Gordon, MD, and Martin Blaser, MD, pioneers in the study of the effects of the microbiome on health and behavior will provide their expert perspectives on the gut microbiome and its impact on health and the development of major endocrine disorders such as diabetes and obesity. [Editor's Note: An in-depth article on this session is on page 32.]

For investigators, there are many new technology sessions, including a symposium, "Big Data: New Resources for Endocrine Researchers," focused on how to access and analyze very large data sets and apply big data tools to your own research. A hands-on workshop will be included with this symposium. In addition, there are sessions that will look at calcium imaging in conscious animals, as well as a presentation on RNAi and CRISPR-Cas9 technologies and their application to genome-scale screens.

We are continuing the opportunities in the "Meet the NIH Program Directors" sessions where attendees can receive guidance on funding opportunities from representatives from the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD).

For clinicians, formats are varied, from the latest updates from the experts through Meet-The-Professor, the Case Management


Forum and Year-In sessions, Clinical Practice Guideline updates, and the Endocrine Debate. I am looking forward to the sparks flying as Daniel Drucker, MD, and David Nathan, MD, debate the value of the new drugs available to treat type 2 diabetes.

I am also very excited that the Endocrine Society and the American Association of Endocrine Surgeons will conduct joint programming at this year's **ENDO**. Sessions have been created for endocrinologists and endocrine surgeons to learn from each other through case-based presentations and debates about thyroid cancer, adrenal disorders, and much more.

Impressive gains in our understanding of endocrinology were published in 2016, and R. Paul Robertson, MD, editor-in-chief of *The Journal of Clinical Endocrinology & Metabolism (JCEM)*, has brought together the authors of the journal's most popular articles of 2016 for the "Best of JCEM 2016" session.

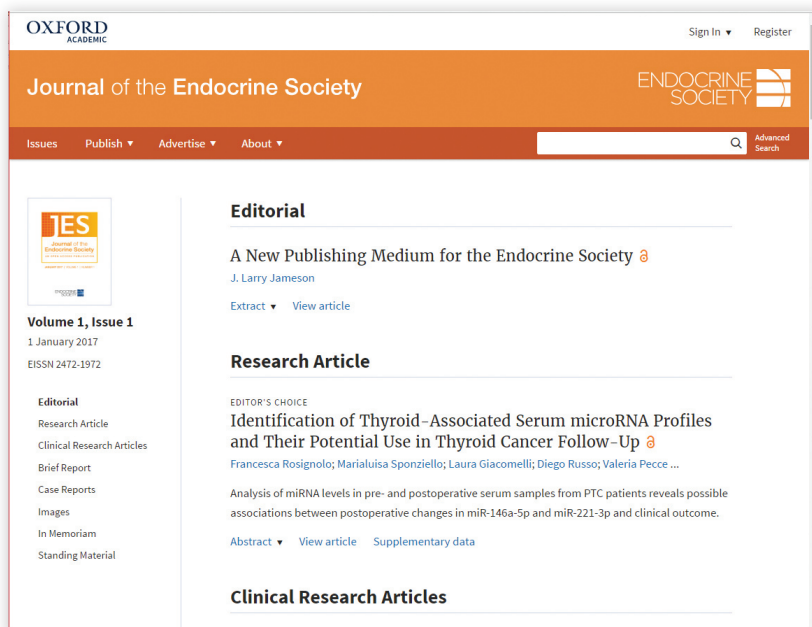
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As our next generation
of endocrine leaders
showcases its
work, it is vital that
we demonstrate
that the Endocrine
Society values their
contributions and
welcomes them into
our community.”

Our fellows and students, who represent some of the brightest and most innovative minds in every endocrine discipline, will join many other scientists and clinicians to present their work in posters and oral sessions. As our next generation of endocrine leaders showcases its work, it is vital that we demonstrate that the Endocrine Society values their contributions and welcomes them into our community. So be sure to show your support for them by attending their oral and poster sessions, and asking them questions about their work. New this year, we are highlighting top posters in theme-based Science Hubs located in the exhibit hall. Additionally, there are numerous programs designed specifically for fellows and students, such as the perennial favorite, the Early Career Forum. Be certain to steer your trainees to these valuable offerings.

If you have any questions or comments, feel free to contact me at president@endocrine.org. I look forward to meeting you all at **ENDO 2017!** 

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

Journal of the Endocrine Society Launches



On January 12, the Endocrine Society unveiled the first issue of its open access scholarly publication the *Journal of the Endocrine Society (JES)* today, marking the first time the Society has introduced a new journal under its ownership in nearly 30 years.

The online-only format is specifically intended to rapidly publish emerging science on a variety of endocrinology topics. The articles are available at no cost for non-commercial use to anyone in the world with an Internet connection.

The first issue of *JES* features research on post-treatment surveillance for thyroid cancer, pregnancy-induced Cushing's syndrome, and advanced methods for measuring testosterone levels in saliva.

The peer-reviewed articles published in *JES* span the Society's mission to cover advances in basic science, clinical science, and clinical practice. *JES* includes original research as well as reports, mini-reviews, commentaries, tools and methods, datasets, and other innovative contributions that advance the endocrinology field.

"Going forward, *JES* will undoubtedly play a central role in the dissemination of research and knowledge in our field," says Endocrine Society past-president J. Larry Jameson, MD, PhD, who serves as the journal's first editor-in-chief, and is the executive vice president of the University of Pennsylvania for the Health System and Dean of the Perelman School of Medicine. "Publishing is rapidly transitioning from bound journals delivered by mail to online sources of information."

The journal's open access format allows the Society to publish high-quality scientific research papers without being restricted by the page limitations of a print journal. The new journal creates the opportunity for more scientists to publish their work and offers an avenue for cutting-edge research to advance science and improve medical care.

Readers will continually have access to new content from *JES* as each article is accepted after peer review and published online. This efficient process is designed to meet the needs of readers who want access to the latest science as well as researchers who want their work to be rapidly reviewed and shared with the public.

JES and digital editions of the Society's other three journals — *The Journal of Clinical Endocrinology & Metabolism*, *Endocrinology*, and *Endocrine Reviews* — are now available exclusively through Oxford University Press (OUP) on its new, best-in-class, web platform. The platform allows for improved search and discovery with multimedia integration for optimal viewing on desktop computers, tablets, or smartphones. The Society appointed OUP as its digital distributor in July 2016.

The Society also has begun providing published authors with access to Kudos and Altmetric — digital tools that help scientists and researchers to promote and gauge the reach of their published work in real time.

To learn more about *JES* or to submit a manuscript, visit <https://academic.oup.com/jes>.

ENDO 2017

THE ENDOCRINE SOCIETY'S 99TH ANNUAL MEETING & EXPO

Call for ENDO 2017 Late-Breaking Abstracts

The deadline is Monday, February 13, 2017; 1:00 PM EST (US).

If you're thinking about submitting an abstract for **ENDO 2017** in Orlando, Fla., time is running out! Submit your late-breaking abstract and share your research with the largest gathering of scientists and physicians working in hormone research and clinical endocrinology.

Submit your best late-breaking science for oral, poster preview, and poster presentations! **ENDO 2017** is the premier venue to share research, exchange ideas, and network with more than 7,500 endocrine researchers and practitioners.

For more information, go to: www.endocrine.org/latebreaking.

AADE7™ SELF-CARE BEHAVIORS
HEALTHY EATING

Word Wall

If you've just learned that you have diabetes or prediabetes, you probably have a lot of questions about what you can or can't eat. Do you wonder if you can ever have your favorite food again? What happens when you are eating at a restaurant or a friend's house? Do you have to change your whole diet just because you have diabetes?

The answer is **NO**. There is nothing that you can't eat. You don't have to give up your favorite foods or stop eating at restaurants.

But, it is important to know that everything you eat has an effect on your blood sugar. Learning to eat regular meals, controlling the amount you eat, and making healthy food choices can help you manage your diabetes better and prevent other health problems.

Some skills are more complex, but your diabetes educator or dietitian can help you learn about:

- Counting carbohydrates
- Reading food labels
- Measuring the amount of a serving
- Developing a practical meal plan
- Preventing high or low blood sugar
- Setting goals for healthy eating

Pick one or two of these skills and discuss them with your healthcare provider.

DID YOU KNOW?

There are only 3 main types of nutrients in food: carbohydrates, proteins, and fats. A healthy meal will include all three types.

TRUE OR FALSE:

People with diabetes can't have sugar.
FALSE. Sugar is just another carbohydrate and can fit into a meal plan. Sugary foods, however, do not have the same nutrition as grains or vegetables, and can often be high in fat and calories. It's best to limit sugar-containing foods to small portions, and be sure to count the carbohydrates toward the total recommended in your meal plan.

QUICK TIPS

- Eat breakfast every day. Breakfast helps begin the calorie-burning process that provides you with energy. Include small snacks between meals as part of your daily intake to help keep your body going.
- Space your meals throughout the day. Going too long without eating may result in excessive hunger, which can lead to overeating later on. Try to eat every 4 to 5 hours during waking hours.

CARBOHYDRATE (AKA "CARBS"): One of the three main types of nutrients found in food. Bread, pasta, rice, fruits, vegetables (especially starchy vegetables such as potatoes, corn, peas, dried beans), milk, and sweets are all carbs. Don't forget that carbohydrates can be found in beverages, too.

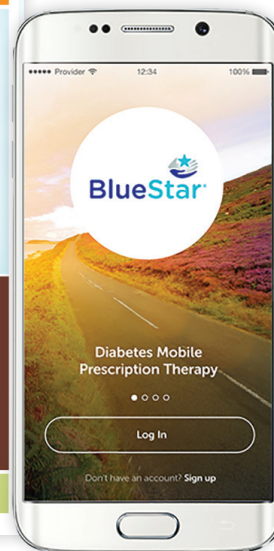
PORTION: How much of a food you eat

MEAL PLAN: A guide for healthy eating developed with your healthcare provider

HYPOGLYCEMIA: Low blood sugar

HYPERGLYCEMIA: High blood sugar

AADE American Association of Diabetes Educators
Supported by an educational grant from Eli Lilly and Company.



AADE Partners with WellDoc to Promote Digital Diabetes Self-Management Platform

The American Association of Diabetes Educators (AADE) will partner with digital healthcare company WellDoc to incorporate the "AADE Diabetes Education Curriculum: A Guide to Successful Self-Management" in the BlueStar® digital therapeutic platform. BlueStar® is a Food and Drug Administration-cleared digital therapeutic used to help adults living with type 2 diabetes self-manage their condition.

This partnership marks the first time AADE has partnered with an organization to provide its curriculum in a consumer-friendly digital format. The curriculum, built around the AADE7 Self-Care Behaviors™, focuses on the seven primary areas of self-management: Healthy Eating, Being Active, Monitoring, Taking Medication, Problem Solving, Reducing Risks, and Healthy Coping.

As part of this partnership, AADE and WellDoc will explore how to collectively engage AADE's members. The organizations will also look to jointly develop new strategies that bring innovative tools to diabetes education and intervention through digital health channels. BlueStar® currently provides a platform that allows healthcare professionals (including diabetes educators and care coordinators) to support people with type 2 diabetes in between office visits.

"Digital health is a strong complement to in-person care and education provided by diabetes educators. It is beneficial for AADE to leverage meaningful partnerships with digital health leaders, such as WellDoc, to make every tool available to people living with type 2 diabetes," says AADE CEO Charles MacFarlane, FACHE, CAE. "Integrating our curriculum into the BlueStar® platform is an important strategic decision for AADE and will benefit our members and people with type 2 diabetes in this evolving healthcare environment. We look forward to continuing to build on this relationship."

MEMBERS
in the
NEWS

William T. Cefalu, MD, Named ADA's Chief Scientific & Medical Officer



Society member William T. Cefalu, MD, has been appointed chief scientific and medical officer (CSMO) of the American Diabetes Association (ADA) and will formally begin serving on February 20, 2017. He replaces another Society member, Robert E. Ratner, MD, who retired on December 31, 2016, after serving as CSMO for nearly five years.

Cefalu joins the ADA from Louisiana State University's (LSU) Pennington Biomedical Research Center, in Baton Rouge, La., where he has been a professor since 2003. At Pennington Biomedical, he held the positions of associate executive director and chief scientific officer, and he currently serves as executive director and holds the George A. Bray, Jr., Endowed Super Chair in Nutrition.

"I am excited to join the Association in this notable role that can make a difference in the lives of the millions of people with diabetes and prediabetes — here in the U.S. and around the world," says Cefalu. "Diabetes remains one of the world's major chronic disease threats, and the Association has an incredible human responsibility to change the trajectory of the disease. As a Louisianian and a physician, I've seen diabetes impact my state firsthand. This new role is a tremendous opportunity for me to continue to significantly influence health, mortality, and quality of life for so many, and I look forward to the challenges."

In his 30-plus-year career, Cefalu has been active in both clinical and basic science research, specifically interventions to improve the metabolic state of individuals with insulin resistance and type 2 diabetes, and in the cellular mechanisms for insulin resistance. As executive director of Pennington Biomedical, Cefalu directs the Center's basic, clinical and population science research functions, supports the training and educational missions of the Center, and aligns administrative functions in support of the Center's research mission. He has also served as a mentor to medical and graduate students, medical residents, fellows, and junior faculty

throughout his more than 30-year career in academic medicine, one of his personal passions.

Notably, Cefalu has had research support from the National Institutes of Health (NIH) for more than 25 years and is the principal investigator for two NIH research centers. Since 2005, Cefalu has directed the NIH-funded Botanical Dietary Supplements Research Center at Pennington Biomedical, as well as the NIH-funded Louisiana Clinical and Translational Science Center (LACaTS), a consortium of eight academic institutions and health care systems across the state of Louisiana. He has also been active on NIH study sections, is Pennington Biomedical's site principal investigator of the NIH-funded GRADE study and serves as the principal investigator for several multi-site trials.

According to Alvin C. Powers, MD, director of the Vanderbilt University Diabetes Center, the ADA is very fortunate to have a physician and scientist of Cefalu's caliber join as its scientific and medical leader. "Dr. Cefalu has made major contributions to diabetes research and care," he says, "and his leadership will bolster our comprehensive, multi-disciplinary, evidence-based healthcare recommendations for people with diabetes."

Cefalu earned his BS from Southeastern Louisiana University and his MD from LSU Health Science Center, New Orleans. He completed an internal medicine residency and served as chief resident at the University of California, Irvine, Veterans Affairs Long Beach Healthcare System. He completed a fellowship in endocrinology at the David Geffen School of Medicine, Center for Health Sciences at the University of California, Los Angeles. In addition, Cefalu is widely published in journals, books, and book chapters, including more than 280 manuscripts and 25 book chapters. He has also served as the editor of five books on the management of diabetes.



City of Hope Sets New Goal for Type 1 Diabetes Cure

Curing type 1 diabetes in six years is the new goal of City of Hope's Diabetes and Metabolism Research Institute.

Through the generosity of the Wanek family and gifts from anonymous donors, the institution will be able to devote more than \$50 million over the next six years to an innovative research effort that seeks to find a cure for type 1 diabetes. The family's gift will establish the Wanek Family Project for Type 1 Diabetes at City of Hope.

City of Hope, which has a long history in diabetes, conducted research that led to the development of synthetic human insulin by Arthur D. Riggs, PhD, in 1978. Insulin is still used today by an estimated 1.5 million Americans with type 1 diabetes and 27 million with type 2 diabetes.

Funding for this transformative research is being led by a gift from the Wanek family, who founded and currently owns Ashley Furniture Industries. The project will create a series of highly focused programs based at City of Hope that will use an integrated approach to curing type 1 diabetes, including immunotherapy approaches, as well as research into beta cell transplantation and preventing the body from rejecting those insulin secreting cells.

"City of Hope is best positioned to take on this challenge," says Robert W. Stone, president and CEO of City of Hope. "This is thanks to our 40-year institutional legacy of pioneering treatment and research advances in diabetes."

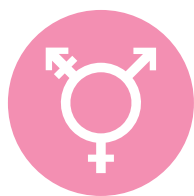


The Endocrine Society's Leadership Council spent two days in the Society's offices January 26 and 27. This was all part of a training program created to provide them information to enhance their roles as Society leaders. Over the course of these two days, they learned about governance strategies; roles and responsibilities of non-profit leadership; the Society's current Strategic Plan; as well as how they can work with staff to collectively achieve the Society's goals. Pictured are: Back: Cesar Boguszewski, MD, PhD; Carolyn Smith, PhD; Amy Rothberg, MD, PhD; Margaret Eckert-Norton, PhD, FNP-BC, CDE; Genevieve Neal-Perry, MD, PhD; Clifford Rosen, MD; Sherri-Ann Burnett, MD, MPH; and Anthony Hollenberg, MD. Front: Lynnette K. Nieman, MD; Society CEO Barbara Byrd Keenan, FASAE, CAE; and Susan J. Mandel, MD, MPH.



Endocrine Society member Deena Adimoolam, MD, (left) assistant professor, Division of Endocrinology, Diabetes and Bone Disease, Icahn School of Medicine at Mount Sinai, New York, N.Y., was on SiriusXM's Doctor Radio Friday January 27. Adimoolam was invited on the show by host Samantha Heller (right) to discuss type 1 diabetes after Mary Tyler Moore, a patient and tireless advocate, died on January 25. Adimoolam is a past contributor to *Endocrine News* and even hosted a diabetes Twitter chat for the Society in November.

Photo courtesy of SiriusXM.



TRANSGENDER

Survey: Endocrinologists Want Training in Transgender Care



Four out of five physicians who specialize in treating hormone health conditions have never received formal training on care for transgender individuals, according to a new study published in *The Journal of Clinical Endocrinology & Metabolism*.

“As awareness and insurance coverage of transgender healthcare has increased, there is growing demand for healthcare providers with expertise in this area,” says the study’s first author, Caroline Davidge-Pitts, MD, of the Mayo Clinic, in Rochester, Minn. “It is crucial for endocrinologists to receive the necessary training to feel confident providing the highest quality care for this population.”

The Mayo Clinic and the Endocrine Society conducted an online survey of practicing U.S. endocrinologists and directors of training programs that prepare fellows, residents, and medical students for endocrinology careers to gauge their understanding of transgender healthcare.


Of 411 practicing physicians who responded, nearly 80% had treated a transgender individual during their career. The survey found that most healthcare providers were comfortable taking a history or prescribing hormones to transgender individuals. Respondents felt less confident discussing surgery and other non-hormonal treatment options, which may require a referral to a surgeon or other healthcare provider. The survey respondents were interested in receiving additional training in transgender care from online training modules and medical meeting presentations.

Of the 54 endocrinology fellowship program directors who responded to the survey, 35 said their programs provided dedicated teaching on transgender health topics. The respondents said the biggest hurdles to providing more education were lack of faculty interest or experience, training resources, and funding.

“The survey results will help us develop strategies to educate endocrinologists who are currently in practice as well as those entering the field about transgender care,” Davidge-Pitts says. “Teaching transgender health topics earlier, in medical school or residency, is one way to ensure young professionals are prepared. Expanded continuing education through online modules or medical meetings can benefit current healthcare providers.”

The study, “Transgender Health in Endocrinology: Current Status of Endocrinology Fellowship Programs and Practicing Clinicians,” will be published online ahead of print.

Other authors of the study include: Todd B. Nippoldt, Lauren Radziejewski, and Neena Natt of the Mayo Clinic, in Rochester, Minn.; and Ann Danoff of the CPL Michael J. Crescenz VA Medical Center and the Perelman School of Medicine at the University of Pennsylvania, in Philadelphia, Pa.

The Endocrine Society is in the process of updating its 2009 Clinical Practice Guideline on gender dysphoria. The revised guideline will provide evidence-based recommendations on the best practices for treating transgender individuals. 



Orlando, Fla., 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

World Congress on Osteoporosis, Osteoarthritis, and Musculoskeletal Diseases, Florence 2017

Florence, Italy, March 23 – 27

European Society for Clinical and Economic Aspects of Osteoporosis, Osteoarthritis and Musculoskeletal Diseases (ESCEO), and International Osteoporosis Foundation (IOF) sponsor the world's leading clinical conference on bone, joint, and muscle health created for healthcare professionals, researchers, and young scientists. Abstract submission deadline: January 13.

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19th European Congress of Endocrinology

Lisbon, Portugal, May 20 – 23, 2017

The largest European gathering of endocrinologists and endocrine scientists from around the world converge at this annual meeting with the aim of shaping the future of endocrinology to improve science, knowledge, and health across Europe and beyond.

www.ece2017.org

EndoBridge 2017

Antalya, Turkey, October 19 – 22, 2017

Jointly organized by the Endocrine Society, European Society of Endocrinology, and The Society of Endocrinology and Metabolism of Turkey, EndoBridge will provide a comprehensive update in the field of endocrinology. Held on October 19–22, 2017 in Antalya, Turkey, this meeting is designed for the clinical endocrinologist. The official language of the meeting is English, but simultaneous translation will be available in Russian, Arabic, and Turkish.

info@endobridge.org

ADA 64th Advanced Postgraduate Course
Washington, D.C.,
February 17 – 19, 2017

This course is specifically designed for physicians, physician assistants, nurses, nurse practitioners, dietitians, pharmacists, psychologists, certified diabetes educators, and other healthcare professionals who care for patients with diabetes or who manage the complications related to this disease.

www.professional.diabetes.org

2017 Gordon Research Conference on IGF & Insulin System in Physiology and Disease
Ventura, Calif., March 12 – 17, 2017

This meeting will present cutting-edge research on the roles of IGFs and insulin and their signaling pathways in normal physiology and in major diseases. The program will bring together investigators from around the globe who are at the forefront of this exciting field to discuss key aspects of the IGF and insulin biology.

cduan@umich.edu

Sex and Gender Factors Affecting Metabolic Homeostasis, Diabetes, and Obesity

Tahoe City, Calif., March 19 – 23, 2017

The goal of this meeting is to fill a need in the scientific community by connecting interdisciplinary groups of scientists who normally would not have an opportunity to interact, such as investigators studying sex differences, the role of sex hormones, the systems biology of sex, and the genetic contribution of sex chromosomes to metabolic homeostasis and diseases.

info@keystonesymposia.org

Endocrine Board Review 2017

Chicago, Ill., September 26 – 27

Unlike other board preparation meetings, the Endocrine Society's Board Review (EBR) courses offer a comprehensive mock-exam format with case-based American Board of Internal Medicine-style questions forming the bulk of the presentations. Each section follows the ABIM blueprint for the board exam, covering the breadth and depth of the certification/recertification examination. Each case will be discussed in detail, with the correct and incorrect answer options reviewed. The mock exam appeals to endocrine fellows who have completed or are nearing completion of their fellowship and are preparing to take the board certification exam. Practicing endocrinologists may appreciate the EBR's comprehensive self-assessment of endocrinology either to prepare for recertification or to update their practice.

www.endocrine.org/ebr



WHY ENDOCRINOLOGY?

A Pathway to Better Health

BY LAURA N. VANDENBERG, PHD, assistant professor, University of Massachusetts – Amherst, School of Public Health & Health Sciences, Department of Environmental Health Science, Amherst, Mass.

It may sound like a cliché, but I am quite certain I have been a biologist my entire life. I grew up in a fairly rural area, and my father was a hunter, so my exposure to anatomy and physiology started at a very young age. I remember my first dissection, and how I removed the lungs from a duck and wondered how this magnificent piece of tissue could be responsible for such a critical life function. I was probably about eight years old, and my interest in understanding how the body worked — really worked — was piqued.

I was an undergraduate at Cornell University when I fell in love with developmental biology. This field helped me to pursue my love of understanding ‘how things work.’ I was amazed learning how embryos from different model organisms self-organize, and the processes involved in the differentiation of tissues and the progression from single cells to complex body structures. At that time, I started working in a research lab with Dr. Mariana Wolfner, a molecular biologist who studies proteins passed from male drosophila to females during mating. Our work identified a prohormone in seminal fluid, ovulin, which is cleaved in the female reproductive tract to stimulate ovulation.

My interests in reproductive science and developmental biology led me to Tufts University School of Medicine, where I pursued a PhD with Drs. Ana Soto and Carlos Sonnenschein. It was in their laboratory that my interests pivoted from the general concept of signaling molecules to a deep appreciation for the role that hormones play to direct not only physiological responses, but development itself. I began working on a project to quantify the effects of estrogen on the pubertal mouse mammary gland; although genetic knockout

models had revealed the essential role that estrogen signaling plays in various aspects of mammary gland development, there was little understanding of how various doses of estradiol might impact quantitative features in mammary gland growth. We were surprised to find a non-monotonic (inverted-U shaped) relationship between estrogen doses and mammary gland growth, where moderate doses of estrogen induced the largest ductal trees.

“

To me, endocrinology has served as a bridge across multiple scientific disciplines including developmental biology, molecular biology, neuroscience, and environmental health.

”

It was during my work with Drs. Soto and Sonnenschein that I became involved in the study of endocrine-disrupting chemicals (EDCs). Dr. Soto was one of the first researchers to show that low doses of bisphenol A (BPA) alter development of the mammary gland and female reproductive tract. In fact, several publications from her lab had revealed that in utero exposures to BPA could induce visually striking changes in mammary gland phenotypes that became apparent at puberty and in adulthood, long after exposures had ceased. I became fascinated with the developing mammary gland and hypothesized that BPA likely altered the gland during the period of exposure, predisposing it to abnormal architectures in adulthood. Our work showed that numerous aspects of the mammary gland were disrupted

by BPA during gestation including accelerated fat pad maturation and decreased induction of ductal lumen formation.


The world of endocrinology continued to loom large as I progressed through a postdoctoral fellowship with Dr. Michael Levin, first at the Forsyth Institute at Harvard University and then at Tufts University. Although my projects in Dr. Levin’s lab focused on understanding broad questions in developmental

As the Endocrine Society embarks on its second century, *Endocrine News* will continue to tell the stories of how endocrinologists chose this remarkable field. If you would like to share your story with our readers around the world, contact Editor Mark A. Newman at mnewman@endocrine.org.

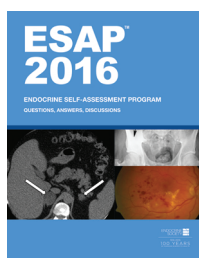
biology (namely, how patterns arise during embryogenesis), I found myself using chemical reagents that were known EDCs to probe these fundamental biological processes.

Since joining the Department of Environmental Health Sciences at the University of Massachusetts Amherst in September 2013, I have begun to identify areas for novel research projects. One major focus of my work capitalizes on my laboratory training in endocrinology and developmental biology to examine the effects of estrogenic EDCs on the development and health of estrogen-sensitive organs including the mammary gland, female reproductive tract, and brain. I received a K22 grant from the National Institute of Environmental Health Sciences to characterize the mechanisms by which environmental estrogens alter sexually dimorphic development of the mouse mammary gland. I have also developed a collaboration with Dr. Joseph Jerry, an expert in the mammary gland and estrogen signaling, to evaluate the effects of EDCs on mice during pregnancy and lactation. I have become deeply interested in understanding

whether pregnancy and lactation should be considered a sensitive period of “development” for the mother herself, and not just her offspring. Finally, I have built collaborations with other members of the Endocrine Society including Drs. R. Thomas Zoeller, J. Peterson Myers, and Fred vom Saal, to examine how different kinds of data are used in hazard assessments and regulatory decision making for EDCs. Our work has focused on every aspect of EDC research from study design to risk assessment, and from policy to regulatory implementation.

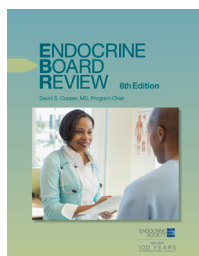
To me, endocrinology has served as a bridge across multiple scientific disciplines including developmental biology, molecular biology, neuroscience, and environmental health. It provides the undercurrent to the most interesting questions: How do organisms create such beautiful bodies, putting everything in the right place at the right time? And, what happens when environmental factors impinge on those biological processes? It is through endocrinology that I see a path to better understanding, as well as better public health. 

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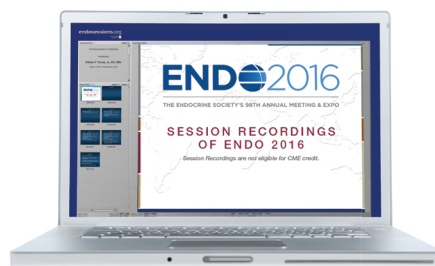
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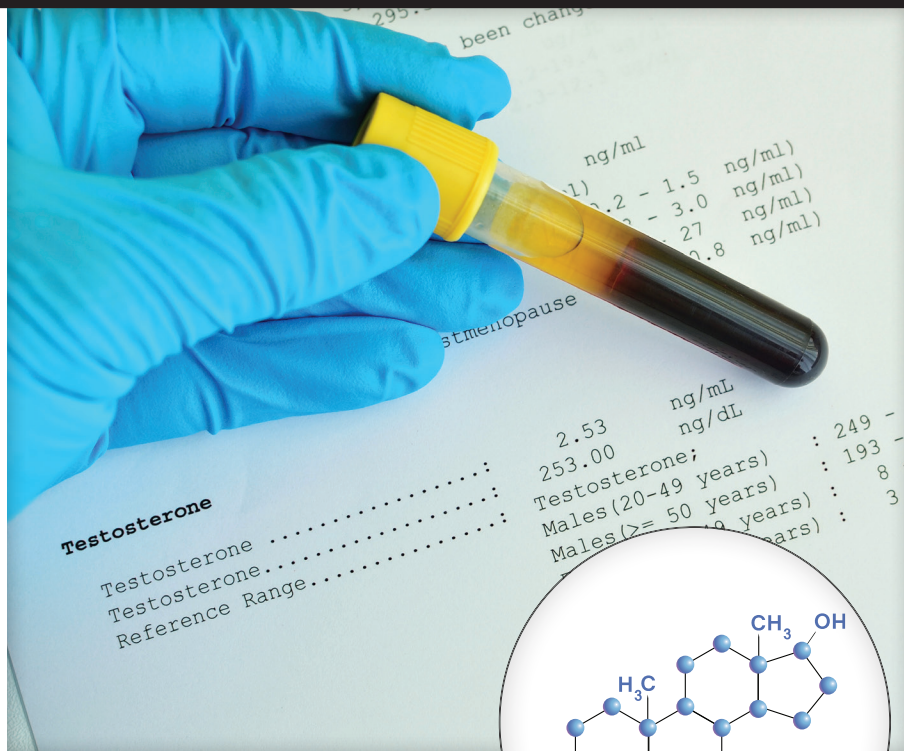
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BY DEREK BAGLEY

Study Defines Normal Ranges for Testosterone Levels



Testosterone

A study of more than 9,000 men from the United States and Europe has defined a harmonized range for total testosterone in non-obese men ages 19 to 39, according to a study recently published in *The Journal of Clinical Endocrinology & Metabolism*.

Researchers led by Shalender Bhasin, MD, of Brigham and Women's Hospital, Harvard Medical School, in Boston, Mass., point out that "rigorously derived reference ranges are essential for distinguishing 'healthy' from 'diseased' individuals and constitute the foundation of our contemporary approach to making the diagnosis of clinical disorders." Therefore, the authors write, they wanted to establish reference ranges of testosterone to distinguish between low and normal ranges, in order to better diagnose hypogonadism.

"Well-defined reference ranges are at the heart of clinical practice and without them clinicians can make erroneous diagnoses that could lead to patients receiving costly, lifelong treatments that they don't need or deny treatments to those who need them," Bhasin says. "Our data establish a reference range for testosterone. These data also show that variations in assays is an important contributor to variation in testosterone levels in cohorts from different geographic regions. Clearly, we need standardization in all hormone assays."

The researchers obtained serum testosterone samples from men who had already had their testosterone levels assayed locally. The samples were sent to the Centers for Disease Control and Prevention's (CDC) Clinical Standardization Programs at the National Center for Environmental Health where testosterone concentrations were measured using a higher order liquid chromatography tandem mass spectrometry method.

Findings: They then used the results from both measurements to generate harmonized values, which were in turn used to derive standardized, age-specific reference ranges overall. The harmonized normal range for testosterone in a non-obese population of European and American men, ages 19-39 years, is 264-916 ng/dL.

"Without harmonized reference ranges and standardized assays, tests can lead to misdiagnoses and unfortunately this happens every day around the world," says Hubert Vesper, PhD, who is also a co-author of the study and co-chair of the Partnership for the Accurate Testing of Hormones (PATH). "Now we have a reference range for testosterone, and it's important that we take this into consideration in the tests that clinicians and patients depend on for accurate diagnoses."



“ In fact, one GHRKO mouse lived for almost five years and currently holds the record for the longest-lived laboratory mouse.”

Disruption of GH Receptor Increases Lifespan in Female Mice

Disrupting the growth hormone receptor (*Ghr*) gene in adult mice increased the maximal lifespan in the female mice but not the males, according to a study recently published in *Endocrinology*.

Researchers led by John J. Kopchick, PhD, of the Edison Biotechnology Institute and Ohio University in Athens, write that many animals have shown increased lifespans when GH/insulin/IGF-1 actions are reduced. Yet, GH and IGF-1 have unique and overlapping actions. Kopchick and his team note that they have previously disrupted the *Ghr* gene globally and found that those mice (labeled GHRKO for “GHR gene knockout”) had increased lifespans. “In fact, one GHRKO mouse lived for almost five years and currently holds the record for the longest-lived laboratory mouse,” the authors write.

For the current study, the researchers wanted to determine whether temporally controlled *Ghr* gene deletion in adult mice would affect metabolism and longevity. Therefore, they analyzed male and female mice separated into two cohorts. To induce conditional *Ghr* gene disruption, six-week-old mice received 100- μ L ip injections of 10-mg/mL tamoxifen dissolved in peanut oil once per day over five consecutive days for a total of 5 mg of tamoxifen. Control mice received injections of just peanut oil.

Findings: The researchers found that when adult mice have their *Ghr* gene disrupted, they showed improved insulin sensitivity but only females showed improved longevity. The authors note that this sex-specific result should be studied more. They also write that there are some limitations to this study, namely that the *Ghr* gene was not disrupted in similar fashion in all tissues. Finally, the authors note that “if further studies confirm that blocking GH action in adulthood provides successful health outcomes, then GHR-targeted therapeutics should be considered for improving health and longevity in humans.”

Unique Biomarkers Identified for Use in Thyroid Cancer Follow-Up

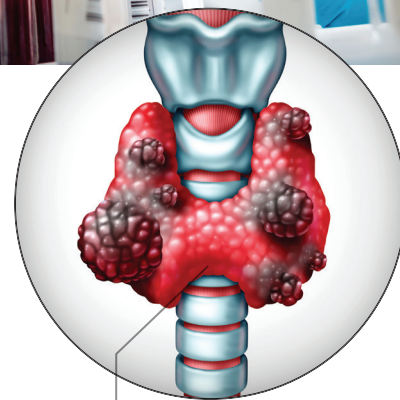


Researchers have identified two unique biomarkers that show promise for monitoring patients who have received treatment for papillary thyroid cancer (PTC), according to a study recently published in the new open access *Journal of the Endocrine Society*.

The team, led by Sebastiano Filetti, MD, of the Dipartimento di Medicina Interna e Specialità Mediche, “Sapienza” Università di Roma, point out that serum thyroglobulin (Tg) is the main biomarker used to detect persistent or recurring thyroid cancer, but “its specificity is limited in the presence of anti-Tg autoantibodies and residual normal thyroid tissue.” The residual normal thyroid tissue is especially a concern, showing up more often because of the decline in total thyroidectomy procedures. “Consequently, the search is on for new, more specific tumor biomarkers to ensure optimal postoperative follow-up of today’s thyroid cancer patients,” the authors write.

The researchers wanted to identify thyroid tumor-associated microRNAs (miRNAs) in the hopes of finding some with potential for development as unique biomarkers to detect PTC recurrence. They measured expression of 754 miRNAs in serum from 11 patients with PTC before and 30 days after thyroidectomy. The investigators then re-evaluated major candidates using an absolute quantitative polymerase chain reaction analysis in an independent cohort of patients with PTC (n = 44) or benign nodules (BN, n = 19) and healthy controls (HC, n = 20). “The two miRNAs most significantly associated with thyroid tumors were then assessed in matched serum samples (before and 30 days and one to two years after surgery) from the 20 PTC patients with complete follow-up datasets and results correlated with American Thyroid Association (ATA) responses to therapy,” the authors write.

The researchers found eight promising miRNAs, but two — miR-146a-5p and miR-221-3p — stood out as the most promising candidates. “Serum levels of both miRNAs after one to two years of follow-up were consistent with ATA responses to therapy in all patients, including two with structural evidence of disease whose Tg assays remained negative (<1 ng/mL),” they write.



Thyroid gland with a malignant tumor growth

Findings: Based on these results, the authors conclude that “serum levels of miR-146a-5p and miR-221-3p might one day be used as complementary biomarkers for the early noninvasive detection of persistent/recurrent PTC, particularly in the expanding population of patients undergoing more conservative treatment of these tumors.” They also note that studies to validate these findings are already underway. ^{EN}

“

Patient-centered care in clinical practice means listening to the patient and exploring the patient’s views on the disease, its impact on the patient’s quality of life, and the patient’s understanding of disease management and treatment. **I believe that the patient is the driver and I am the navigator.**”

— PENDAR FARAHANI, MD, MSC, FRCPC, DABIM, FACP, FACE, assistant professor in the Department of Health Research Methods, Evidence, and Impact at McMaster University in Toronto, Ontario, Canada, discussing the advent of patient-centered care in “Handle with Care” on page 22.

FROM THE CENTURY OF
ENDOCRINOLOGY TIMELINE

2012:

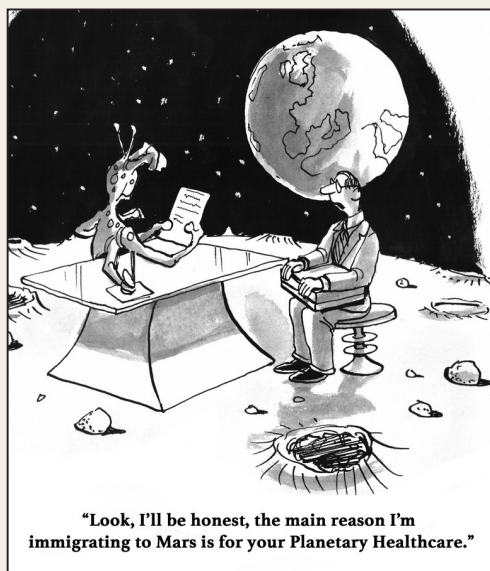
Nobel Prize in Chemistry Awarded to Robert J. Lefkowitz and Brian K. Kobilka



The 2012 Nobel Prize in Chemistry was awarded to Society member Robert J. Lefkowitz and Brian K. Kobilka “for studies of G-protein-coupled receptors.” “G-protein-coupled receptors (GPCRs) form a remarkable modular system that allows transmission of a wide variety of signals over the cell membrane, between cells and over long distances in the body. Today, we understand the molecular mechanism of how these receptors work in intricate detail, in large part because of the studies by Kobilka and Lefkowitz.”

— SOURCE: The Royal Swedish Academy of Sciences

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



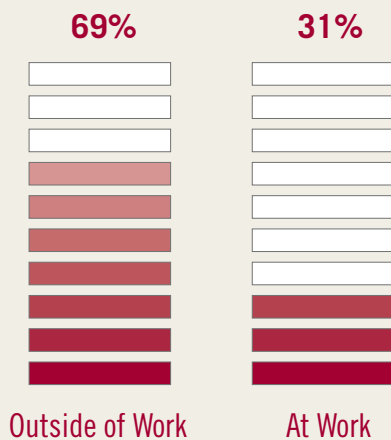
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The number of type 2 diabetes cases that would disappear each year in Great Britain if that country’s sugar-sweetened beverage (SSB) tax were to be enacted.

— SOURCE: THE LANCET PUBLIC HEALTH

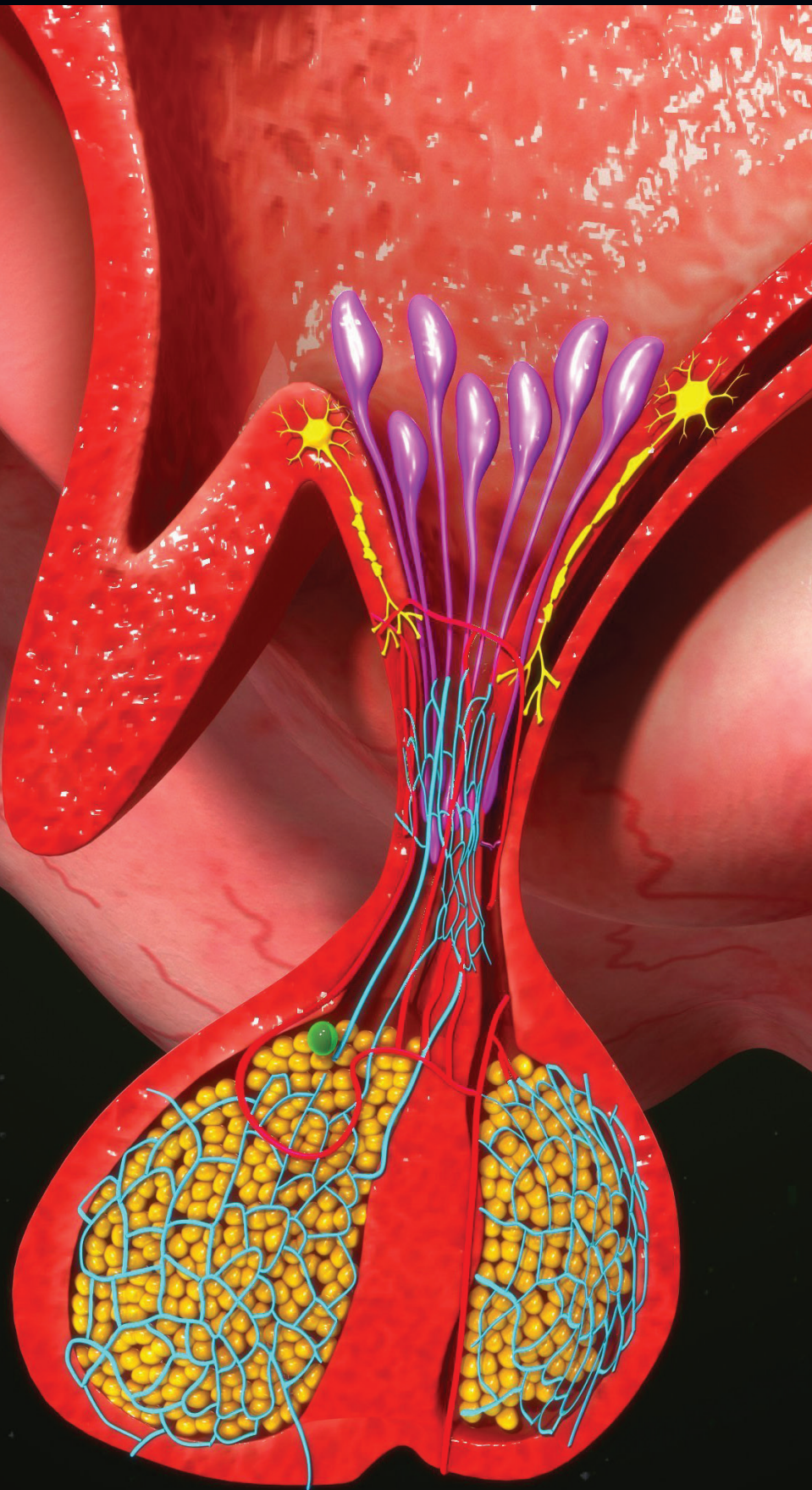
When Endocrinologists Are Happiest

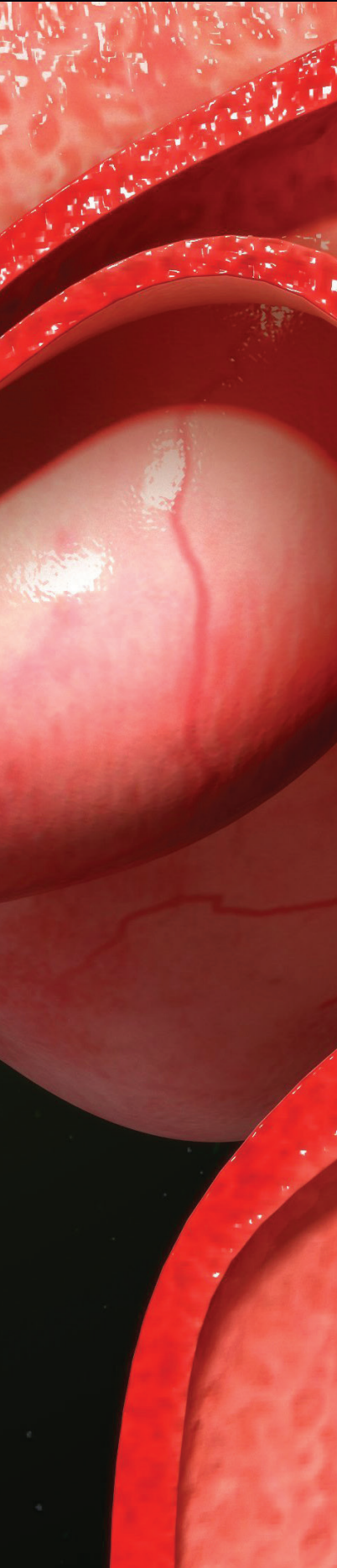


According to a new survey of physicians in a variety of specialties, endocrinologists are more than twice as happy when they’re not actually working. While this could prove true for virtually every single profession, it is heartening to know that according to this particular survey endocrinologists are happier while doing their jobs than nephrologists and rheumatologists (24%), emergency room docs (28%), family medicine (29%), and critical care physicians (30%). The physicians who had the highest levels of work happiness were dermatologists at only 43%.

— SOURCE: MEDSCAPE LIFESTYLE REPORT 2017

A new Endocrine Society guideline states that restoring hormones to natural levels requires careful monitoring and understanding of the assays used to measure them.





BY ERIC SEABORG

An Even

KEEL:

Treating Hypopituitarism in Adults

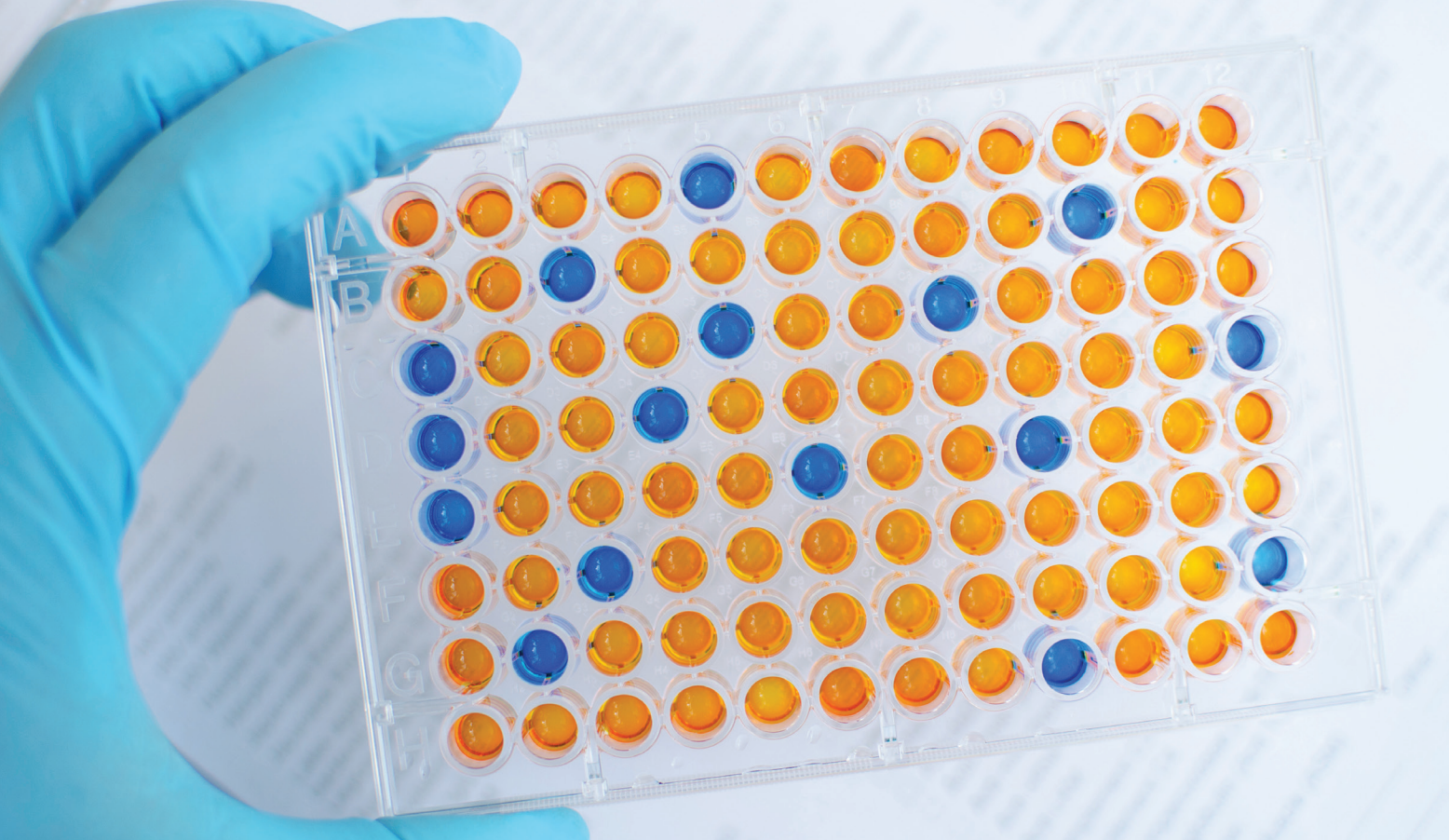
The major goal in treating adults with hypopituitarism should be to replace their hormones at levels as close to the body's natural patterns as possible, according to a new Endocrine Society clinical practice guideline. And that process requires a careful balance of countering various hormonal deficiencies by adjusting their levels and being aware of their interactions and feedback mechanisms.

“Hormonal Replacement in Hypopituitarism in Adults: An Endocrine Society Clinical Practice Guideline” was published in the November 2016 print issue of *The Journal of Clinical Endocrinology & Metabolism (JCEM)* and is available online at: www.endocrine.org/HypoCPG.

“Hypopituitarism can manifest as low levels of a variety of hormones, including cortisol, thyroid hormone, estrogen, testosterone, and growth hormone,” says Maria Fleseriu, MD, who chaired the task force that developed the guideline. Fleseriu is a professor and director of the Northwest Pituitary Center at Oregon Health and Science University in Portland. She notes that “current replacement strategies do not restore the physiologic feedback regulation of an intact hypothalamic pituitary axis,” so clinicians need to monitor this complex system and make adjustments as best they can.

Understanding the Interactions and Assays

“The interactions between these hormones are very important, and patients might require dose changes of one or more of the replacement hormones after starting or discontinuing another one. It is always a moving target, so the guideline covers in detail which medications might interact more with specific hormonal replacement,”



There are many technical considerations about the assays' characteristics and limitations that need to be considered, so the guideline also provides specifics on the various assays. To ensure the accuracy of this guidance, the American Association for Clinical Chemistry participated as a co-sponsor, along with the Pituitary Society and the European Society of Endocrinology.

“ Given the complexity of hypopituitarism, patients are best managed in specialized centers, especially when they have enlarging pituitary tumors, desire pregnancy, have had pituitary hemorrhage, or have a persistent decrease in quality of life despite the treatment.”

— MARIA FLESERIU, MD, PROFESSOR, DIRECTOR,
NORTHWEST PITUITARY CENTER, OREGON HEALTH AND
SCIENCE UNIVERSITY, PORTLAND

Fleseriu says. “Furthermore, accurate and reliable hormonal measurements are central to diagnosing and monitoring therapeutic interventions. There are many technical considerations about the assays' characteristics and limitations that we need to keep in mind” so the guideline also provides specifics on the various assays. To ensure the accuracy of this guidance, the American Association for Clinical Chemistry participated as a co-sponsor, along with the Pituitary Society and the European Society of Endocrinology.

Management in Specialized Centers

“Given the complexity of hypopituitarism, patients are best managed in specialized centers, especially when they have enlarging pituitary tumors, desire pregnancy, have had pituitary hemorrhage, or have a persistent decrease in quality of life despite the treatment,” Fleseriu says.

This is the first comprehensive guideline for diagnosis and management of hypopituitarism in adults, which it defines as “the consequence of diseases that either reduce or destroy secretory function or interfere with the hypothalamic secretion of pituitary-releasing hormones.” The downstream effects of complete or partial deficiency in pituitary hormones can include secondary adrenal insufficiency, central hypothyroidism,

growth hormone deficiency, central hypogonadism, and (more rarely) diabetes insipidus.

Given these wide-ranging effects and conditions, the guideline does not provide overarching solutions, but pieces together a complex mosaic involving hormones, their assays, and the many interactions and special cases that need to be taken into account. “We have covered in detail many special circumstances, such as treatment of patients with hypopituitarism in pregnancy, after pituitary surgery or other surgeries, after pituitary apoplexy, or during treatment with antiepileptic drugs,” Fleseriu says.

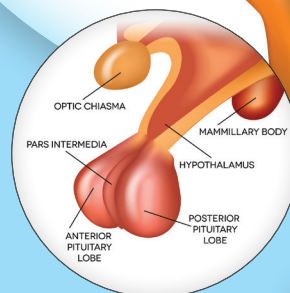
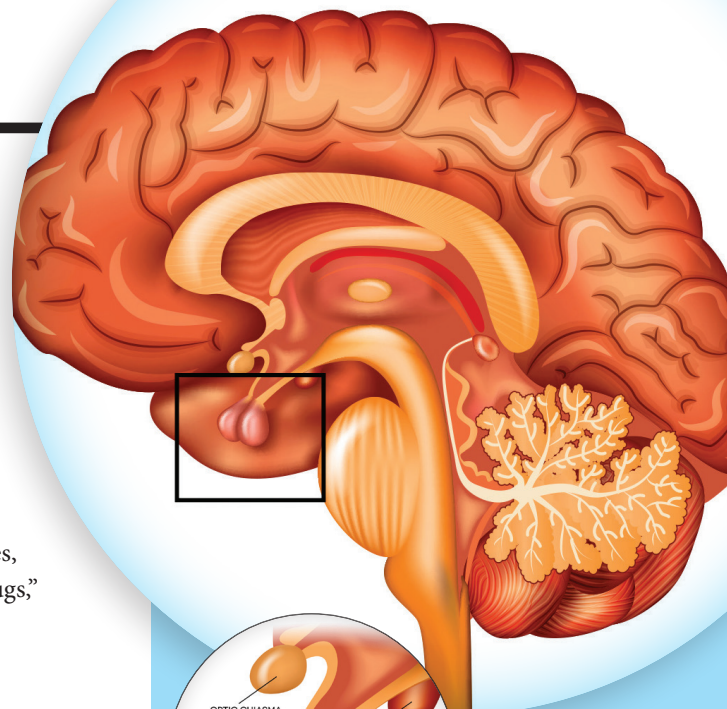
The Costs of Hypopituitarism

Despite clinicians’ efforts, the guideline notes: “Hypopituitary patients exhibit increased incapacitation and sick days, lower health status, and higher cost of care. Those with growth hormone deficiency are less often working full time, more often on sick leave/disability, and often live alone or with parents. Despite receiving long-term growth hormone replacement, the working capacity of hypopituitary patients remains lower than the general population.”

Fleseriu says a meta-analysis done as part of the guideline process found higher all-cause mortality among hypopituitarism patients compared with the general population, with risk factors associated with increased mortality including female gender, younger age at diagnosis, the presence of an aggressive tumor, and the presence of diabetes insipidus.

Perhaps the guideline can contribute to better management. “I believe these guidelines are very timely and greatly needed,” says Michael McDermott, MD, director of endocrinology and diabetes practice at the University of Colorado Hospital in Aurora. McDermott was not on the guideline-writing committee but did review and comment on it. “They address many of the unanswered questions in this area and provide evidence-based recommendations for decisions we’ve previously made empirically based on our clinical experience and judgment. They provide a good summary of the literature and should make a significant contribution to the practice of endocrinology in an area that previously had a significant data void.”

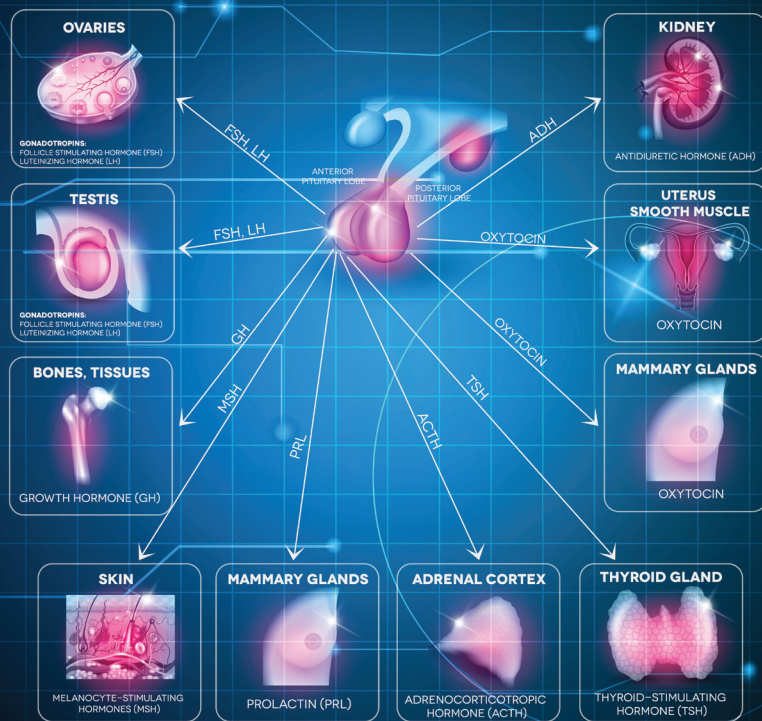
A reassuring finding was from another meta-analysis, which showed no association between growth hormone replacement and pituitary tumor recurrence or risk of secondary cancer. Fleseriu says that the finding is important because it puts to rest a concern that many providers have had when providing this therapy — especially considering that growth hormone is a key component in the overall goal of restoring hormone levels in these patients to levels as close as possible to those in healthy adults.



AT A GLANCE

- ▶ **The goal of hormone replacement in treating hypopituitarism should be to mimic the body’s natural functioning as closely as possible in dosing and timing.**
- ▶ **The hormones replaced are part of a complex system, and the addition or subtraction of one hormone can affect the levels of other hormones.**
- ▶ **Given this interplay, clinicians need to consistently monitor hormone levels, and to do so they need an understanding of the complexities and limitations of hormone assays.**

THE PITUITARY GLAND HORMONES



“ I believe these guidelines are very timely and greatly needed. They address many of the unanswered questions in this area ... and should make a significant contribution to the practice of endocrinology in an area that previously had a significant data void.”

— MICHAEL MCDERMOTT, MD, DIRECTOR, ENDOCRINOLOGY AND DIABETES PRACTICE, UNIVERSITY OF COLORADO HOSPITAL, AURORA

SOME KEY RECOMMENDATIONS

A few examples of the guideline's wide-ranging recommendations include:

The evaluation of central hypothyroidism needs to include measurements of both free thyroxine (which is not needed in primary hypothyroidism) and thyroid-stimulating hormone.

The treatment of central hypothyroidism requires levothyroxine in doses sufficient to raise levels of free thyroxine to the upper half of the reference range.

Pregnant women with central hypothyroidism may require increased doses of levothyroxine to maintain levels within the target ranges for pregnancy.

Suspected cases of growth hormone deficiency should be diagnosed using growth hormone stimulation testing. Because higher body mass index is associated with lower growth hormone secretion, a patient's body mass is an important consideration in determining the appropriate growth hormone cut-off after stimulation to determine true growth hormone deficiency.

People who have proven cases of growth hormone deficiency and no contraindications should be offered growth hormone replacement as a treatment option.

Premenopausal women who have central hypogonadism can be safely given hormone treatment, provided there are no contraindications.

Patients suspected of having central diabetes insipidus should be evaluated by analysis of the concentration of their blood and urine.

Patients needing glucocorticoid replacement can be given hydrocortisone daily in either a single or divided dose, generally totaling 15–20 mg, which are much lower doses than have been used in the past.

All patients with hypopituitarism should be instructed to obtain an emergency card, bracelet, or necklace warning about the possibility of adrenal insufficiency.

Central adrenal insufficiency should be treated long-term with the lowest tolerable dose of hydrocortisone replacement to reduce the risk of metabolic and cardiovascular disease.

Patients suspected of having an adrenal crisis due to secondary adrenal insufficiency should receive an immediate injection of 50 to 100 milligrams of hydrocortisone.

Clinicians should monitor pituitary axes in pituitary apoplexy patients treated with either surgical decompression or conservative management because these patients may develop hypopituitarism over time.

Patients being treated for hypopituitarism who also receive enzyme-inducing antiepileptic drugs need to receive education on early signs of adrenal insufficiency. Antiepileptic drugs can also affect the needed dosages of dexamethasone and levothyroxine. ^{EN}

SEABORG IS A FREELANCE WRITER BASED IN CHARLOTTESVILLE, VA. HE WROTE ABOUT ARTIFICIAL SWEETENERS IN THE JANUARY ISSUE.

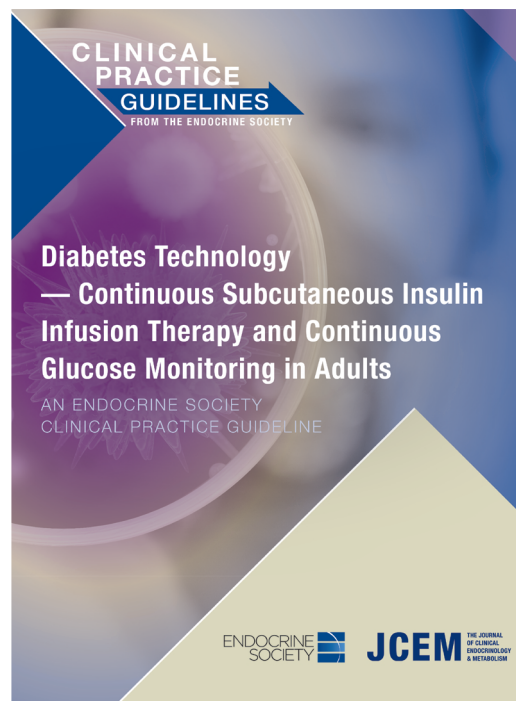
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- ▶ Thorough device usage education and training for patients and healthcare providers
- ▶ Call for Medicare coverage to extend CGM technology to older adults with Type 1 diabetes

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Part 1

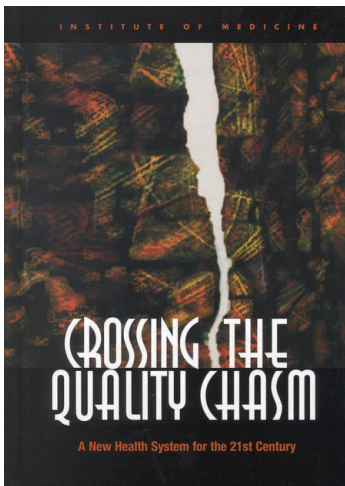
Handle

with **Care**

BY DEREK BAGLEY

The concept of patient-centered care has as many definitions as there are practicing physicians. *Endocrine News* reached out to a handful of Endocrine Society members to get their opinions on this concept and how it can be used to the benefit of an endocrinology practice, as well as the patients.

In 2001, the Institute of Medicine published a book called *Crossing the Quality Chasm: A New Health System for the 21st Century*.

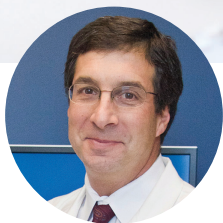


In the book, the institute identified six aims for improvement, one of which was “patient-centered care,” defined as “providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions.”

Ten years later, Ronald M. Epstein, MD, and Richard L. Street, PhD, published an article in *Annals of Family Medicine* called “The Values and Value of Patient-Centered Care,” writing that the concept is now “center stage in discussions of quality,” but confusion and concerns remain about what “patient-centered care” really means. They point to hospitals adopting models used by boutique hotels (“greeters, greenery, and gadgetry”) in the name of “patient-centeredness” as superficial, they note that giving a patient unnecessary antibiotics is not patient-centered care, and they write that patients’ and physicians’ perceptions of what actually happened during the examination can differ; the patient may think he or she participated, but an observation of the encounter would say otherwise.

Epstein and Street conclude that while “patient-centered care” is front and center of conversations in terms of high-quality medical care, “our measures are not yet up to the challenge of ensuring that it is happening.”

However, they also write in their conclusion: “Fortunately, several groups with sufficient expertise and infrastructure are developing new measures, building on the laudable efforts of their predecessors.” In that case, *Endocrine News* asked several of our members about what “patient-centered care” means to them. Here are their answers.



Alan Dalkin, MD, professor of medicine at the University of Virginia, Charlottesville

Alan Dalkin, MD

In my opinion, patient-centered care relates to the notion that the medical providers and processes are shaped/built to provide the highest-quality care to fit the patient's needs/goals. For instance, one approach to getting an MRI of a patient's pituitary gland may be simply fitting him or her into the next available slot (which may be a separate trip) or conversely trying to have that study done so it fits into an efficient schedule for having the patient seen by physicians, surgeons, and other support staff. Reality is often somewhere in between since there is not unlimited flexible capacity in doctors and radiologists and labs and such. This extends to after-visit care as well. Patient-centered care includes getting patients and referring providers' information and a care plan in a timely and helpful manner. It means coordinating care for patients that live at a distance. It means making sure that medical records are available to the patient and providers as their healthcare evolves in other areas.

As an example for the communication piece, I have tried for all patients to provide them with their results shortly after the visit, and to do so via an electronic written communication (email or electronic medical record) that shows both results and interpretation. In this way, they can ask further questions or use these notes for reference at a later time. I try to answer all calls/questions within 24 hours.

Finally, I think that much of medicine is not black and white, and with the goal of empowerment of patients, I try to have a discussion with each regarding the steps taken in their medical care. Some tests are better than others, but there are choices. Some medications are better than others, but there is often multiple reasonable options. By directly involving the patients in their prospective planning, that puts patients at the center of their medical care.

“
I think that much of medicine is not black and white, and with the goal of empowerment of patients, I try to have a discussion with each regarding the steps taken in their medical care.
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Pendar Farahani, MD, MSc, FRCPC, DABIM, FACP, FACE

Patient-centered care in clinical practice from my perspective means listening to the patient and exploring the patient's views on the disease, its impact on the patient's quality of life, and the patient's understanding of disease management and treatment. I believe that the patient is the driver, and I am the navigator.

Therefore, after I explore the patient's views and understanding, as the navigator, I will provide information on treatment options and management plans. And finally, the patient who is the driver will choose the road for the journey of his or her care. The most crucial aspect in the process of "navigation" is amalgamation of the patient's perspectives with available medical evidence alongside important factors such as the patient's comorbidities, age, sex/gender, ethnicity, socioeconomic status, education, geography, and healthcare accessibilities.



Carol Greenlee, MD, FACE, FACP

One of the most important things is partnership with the patient and what is called "contextualized" care, which means taking into account a patient's needs and circumstances, goals and values.

Another aspect is moving from the physician being at the center of the care model, with staff working to help the physician (doing tasks for the physician or other clinician such as "rooming" the patient or "scheduling" the patient for the clinician) to the staff also "taking care of the patient" as their job, with different roles on the patient-centered care team (getting the patient in for a needed appointment). It is doing what is best for the patient (not giving the patient what he or she wants, e.g., pain meds, MRI, antibiotics) or ask for (those things are not often best for the patient but takes time to discuss through).

It's taking our best science and knowledge and technology and then adapting it to meet the patient's unique needs, circumstances, values, and goals. It requires clearing up misconceptions (such as asking what the patient currently understands about a condition or a test or treatment), helping discuss risks and benefits in the context of that individual patient. It requires asking not just telling, but it is not dumping everything back on to the patient. It is taking into account the "work" (the job) of care (self-care that the patient or family needs to do) on top of the illness and the rest of life that the patient and his or her family have to deal with and do (i.e., consideration)

Most clinicians think that they are already patient-centered because they care about their patients. But that does not mean they provide patient-centered care or practice in a patient-centered approach. I thought I was patient-centered because I cared ... but then I had to uproot my mental model to really become patient-centered.



Pendar Farahani, MD, MSc, FRCPC, DABIM, FACP, FACE, assistant professor in the Department of Health Research Methods, Evidence, and Impact at McMaster University in Toronto, Ontario, Canada

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I believe that the patient is the driver and I am the navigator.

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Carol Greenlee, MD, FACE, FACP, Western Slope Endocrinology, Grand Junction, Colorado

“

I thought I was patient-centered because I cared... but then I had to uproot my mental model to really become patient-centered.

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Karl Nadolsky, DO

Karl Nadolsky, DO,
Diabetes Obesity & Metabolic
Institute Walter Reed
National Military Medical
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University, Bethesda, Md.


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Providing patient-centered care is about a holistic approach with the patient as the leader of his/her management plan.

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Providing patient-centered care is about a holistic approach with the patient as the leader of his or her management plan. I'm a big advocate of all medical care being holistic and enabling the patient to make well-informed decisions with physicians acting as coaches or advisors.

Part of the reason I went into endocrinology and continue to focus on obesity is because I think we have the opportunity to play an integral role in optimizing a holistic approach to patient-centered care. In my practice, it is a goal to establish a multidisciplinary team providing personal or individualized education, support, coordination, and treatment through lifestyle/

behavioral therapy and medical or surgical therapy. This likely succeeds when the patient is the center and in control, utilizing the medical team instead of being dictated to, per se. 

[Editor's Note: *Endocrine News* will continue the conversation on this compelling topic as more clinical practitioner members of the Endocrine Society give their thoughts on patient-centered care in the March issue.]

BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. HE WROTE ABOUT DIABETES AND THE AGING PATIENT IN THE DECEMBER 2016 ISSUE.



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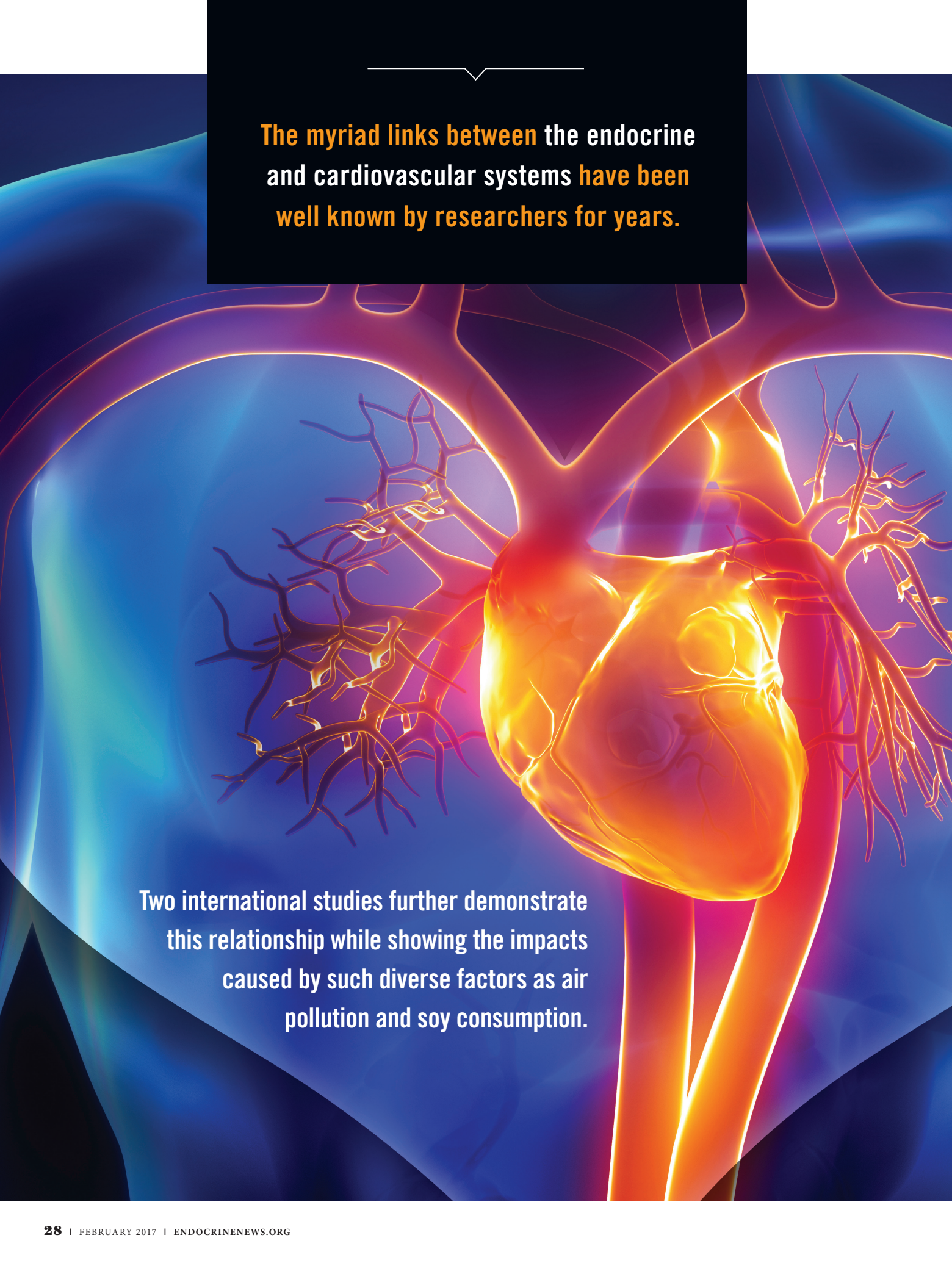
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The myriad links between the endocrine and cardiovascular systems have been well known by researchers for years.

Two international studies further demonstrate this relationship while showing the impacts caused by such diverse factors as air pollution and soy consumption.



TAKE Heart

BY KELLY HORVATH

According to the Endocrine Society's Facts and Figures report on Cardiovascular & Lipids, cardiovascular disease is the number one cause of mortality in the U.S. Although the death rate from cardiovascular disease has declined in the 2000s, due in part to improved lipid levels in U.S. adults, more than half of these adults age 20 years and older still have abnormal lipid profiles.

SOMETHING IN THE AIR

In "The Association Between Air Pollution Exposure and Glucose and Lipids Levels," published in *The Journal of Clinical Endocrinology & Metabolism*, senior author, Victor Novack, MD, PhD, of Soroka University Medical Center and Ben-Gurion University, in Beer Sheva, Israel, and team in collaboration with the Harvard School of Public Health pick up the thread started by prior studies exploring the association between exposure to air pollution and increased risk of cardiovascular, respiratory, and metabolic diseases. Particulate matter is especially hazardous in desert areas, such as the Negev region in southern Israel.

"The scientific evidence supports a causal association between air pollution and oxidative stress, possibly involving impaired metabolism of glucose and lipids," Novack says. "In a recent study performed by our group, we observed a significantly increased risk for ischemic stroke among young adults, associated with air pollution exposure. Following these findings, and as a part of the possible theory linking the association between air pollution exposure and cardiovascular diseases, we sought to investigate if this association might be mediated through the well-established cardiovascular risk factors such as abnormal lipid and glucose metabolism."

In a population-based retrospective cohort study, the team took blood samples from 73,117 adult participants in southern Israel from 2003 to 2012, diagnosed with stroke, ischemic heart disease, dyslipidemia, diabetes, or hypertension or being a known smoker, to assess glucose, low-density lipoprotein (LDL), high-density lipoprotein (HDL), triglycerides, and hemoglobin (Hb)A1c levels.



“... Women with PCOS who incorporate foods high in soy ... in their diets, such as soy milk, soy nuts, and miso soup, could improve both metabolic and cardiovascular health.”

— Zatoollah Asemi, PhD, Kashan University of Medical Sciences, Kashan, Iran

“ Several studies ... have addressed the link between air pollution and heart diseases, but the question whether the exposure to air pollution triggers or causes these events is as yet unclear. Further studies are needed in order to address this gap in knowledge.”

— VICTOR NOVACK, MD, PHD, SOROKA UNIVERSITY MEDICAL CENTER AND BENGURION UNIVERSITY, BEER SHEVA, ISRAEL

“We observed significant increases of up to 0.57% in blood glucose, 2.37% in LDL, and 0.31% in triglycerides, and a decrease of up to 1.13% in HDL levels associated with increases of interquartile range (IQR) in average concentrations of particulate air pollution $<10 \mu\text{m}$ in the three months preceding the test (IQR = $20 \mu\text{g}/\text{m}^3$),” Nocack explains. “Similar associations were observed with particulate air pollution $<2.5 \mu\text{m}$.”

Of note, short-term exposures (one to seven days) did not produce similar effects. However, these associations were stronger among patients with diabetes not treated with antidiabetic medications (other than insulin), such as metformin, which seem to protect against the air pollution-induced changes in serum glucose.

“Although the health effects reported in this study are relatively small, these findings are significant in light of the broad extent of exposed population and the continuous nature of exposure,” Novack says. Although genetics play a major role in the development of diabetes, the link between air pollution exposure and the development of diabetes and diabetes-related deaths has been demonstrated. Maintaining glycemic control and managing glucose values can translate into clinically meaningful variations in cardiovascular disease risk, he explains. Furthermore, regarding lipids, lowering LDL cholesterol even by a very small amount reduces cardiovascular mortality and morbidity (Facts & Figures: Cardiovascular & Lipids reports a 29% lower death rate in the U.S. since 1999, attributable to lipid-lowering drugs).

“Several studies, similar to our study, have addressed the link between air pollution and heart diseases, but the question whether the exposure to air pollution triggers or causes these events is as yet unclear. Further studies are needed in order to address this gap in knowledge,” Novack says.

HEARTENING NEWS FOR PCOS PATIENTS

Dyslipidemia also plays a significant role in polycystic ovary syndrome (PCOS), which is also associated with hyperinsulinemia, impaired glucose metabolism, hyperandrogenism, and oxidative stress. Because soy isoflavones have demonstrated protective effects against a variety of conditions, notably, coronary heart disease and hyperlipidemia, in studies in human and animal models, possibly due to the phytoestrogens' inhibitory activity on estrogen metabolism enzymes and on insulin discharge by the pancreatic islets, a team led by Zatoollah Asemi, PhD, of Kashan University of Medical Sciences, in Kashan, Iran, used them to determine their effects on the metabolic status of women with PCOS.



In “The Effects of Soy Isoflavones on Metabolic Status of Patients with Polycystic Ovary Syndrome,” also published in *The Journal of Clinical Endocrinology & Metabolism*, the team report on their prospective randomized, double-blind, placebo-controlled clinical trial in which 70 patients with PCOS ages 18–40 years from December 2015 to February 2016 were divided into soy isoflavone supplement or placebo groups. The 35 participants in the supplement group were given 50 mg/d (an amount comparable to 500 mL soy milk) of soy isoflavones comprising 37.5 mg genistein, 10 mg daidzein, and 2.5 mg glycitein for 12 weeks. Participants in both groups were instructed to maintain ordinary physical activity levels, to avoid nutritional supplements, and to keep food records during the trial.

By analyzing blood samples from the two groups, researchers found that participants receiving soy isoflavone supplements had significantly lower serum insulin, testosterone, and very-low-density lipoprotein and triglyceride levels than their counterparts in the placebo group.

“Soy isoflavone administration for 12 weeks in women with PCOS may improve clinical and metabolic signs through decreased markers of insulin resistance; hormonal profiles, especially androgens; and biomarkers of oxidative stress,” Asemi says. “These findings suggest that women with PCOS who incorporate foods high in soy isoflavones in their diets, such as soy milk, soy nuts, and miso soup, could improve both metabolic and cardiovascular health.” ^{EN}

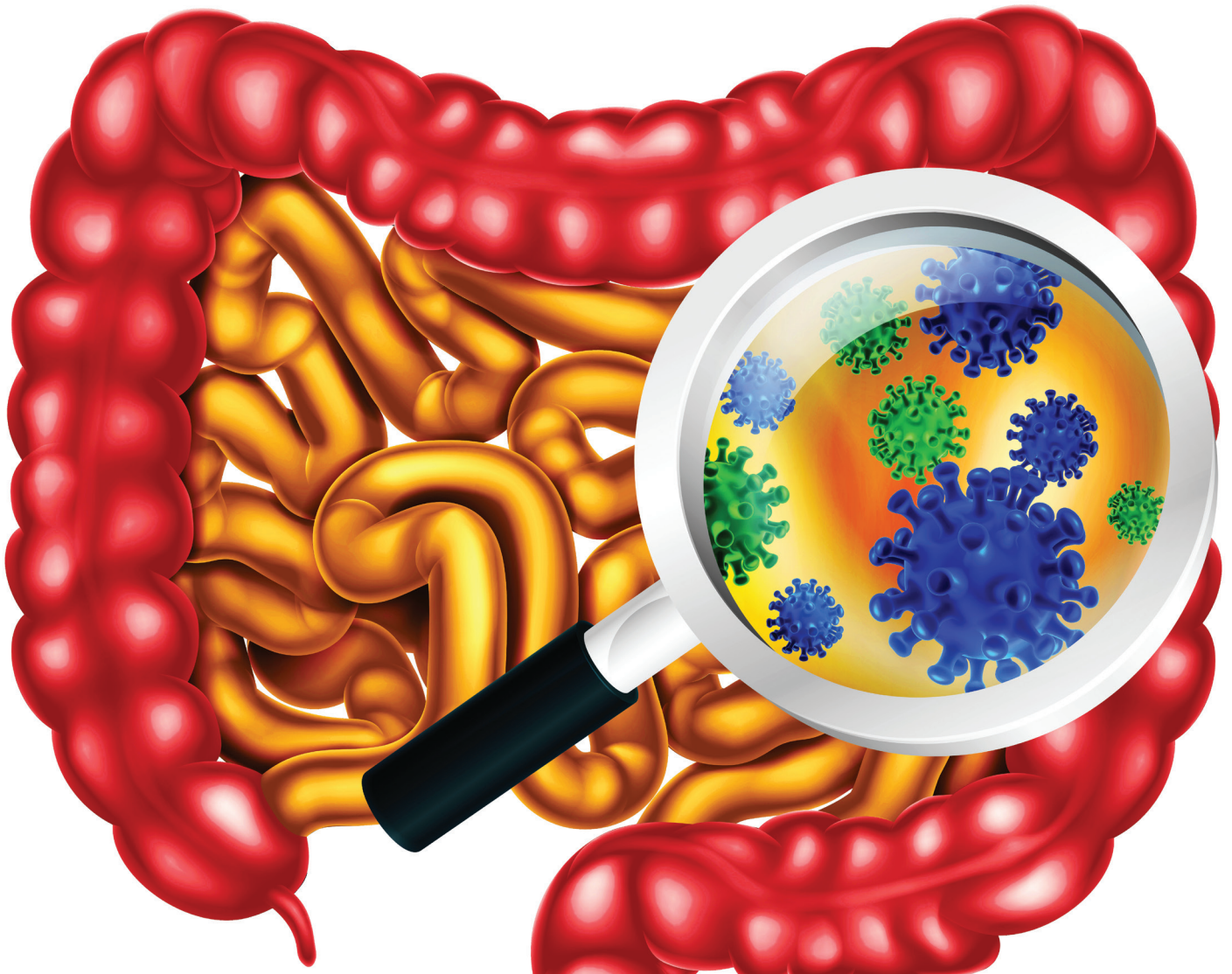
AT A GLANCE

- ▶ Intermediate-term exposure to particulate air pollution is associated with alterations in blood glucose and lipids, especially among patients with diabetes.
- ▶ By increasing LDL cholesterol and decreasing HDL cholesterol, cumulative lifetime exposure to air pollution may increase the risk of developing cardiovascular disease.
- ▶ Regularly consuming soy isoflavones can significantly improve markers of insulin resistance, hormonal status, triglycerides, and biomarkers of oxidative stress in women with PCOS.

HORVATH IS A FREELANCE WRITER BASED IN BALTIMORE, MD. SHE WROTE ABOUT THE NUMBER OF LYMPH NODES THAT NEED TO BE REMOVED IN ORDER TO DETERMINE METASTASES WITH THYROID CANCER IN THE JANUARY ISSUE.

GUT CHECK

BY GLENDA FAUNTLEROY



Endocrine News previews **ENDO 2017** in Orlando with an overview of the Presidential Plenary session, which focuses on the microbiome in pediatric patients.



The early years of a child's life is a critical period for the foundation of a healthy outcome.

It is during the first two years of childhood that optimal nutrition is crucial as it lowers a child's morbidity and mortality, reduces the risk of chronic disease, and fosters his or her better development overall. Whether a child is exposed to antibiotics during these early years is also a crucial component of long-term health.

At **ENDO 2017** in Orlando, Fla., the Presidential Plenary will highlight two scientists dedicated to finding solutions to improving the health of children impacted by dietary challenges and antibiotic exposure. The Presidential Plenary session will focus on "The Influence of the Microbiome in Childhood" and will feature presentations by Martin J. Blaser, MD, professor of Microbiology and the director of the Human Microbiome Program at New York University Langone Medical Center, and Jeffrey I. Gordon, MD, director of the Center for Genome Sciences at Washington University in St. Louis.

Early Life Microbiota and Physiologic Development

Blaser's remarks will highlight his research on "Early Life Microbiota and Physiologic Development." He gave *Endocrine News* a preview of his current studies:

"A central feature of mammalian development across an evolutionary time frame is the high fidelity intergenerational transfer of resident microbes. Yet, the developing microbiome, crucial in the early-life window of development, has limited resilience, and is vulnerable to perturbation. We have shown that early-life antibiotic exposures can alter microbiota development with both metabolic and immunological consequences. We have extended these studies to more fully examine both antibiotic and dietary effects. These affect important endocrinologic diseases including obesity and juvenile (type 1) diabetes in susceptible individuals. In total, our work highlights the importance of early events in shaping the microbiome of developing animals, with effects that may not be limited to the current generation."

The average U.S. child receives about three courses of antibiotics by the age of two and 10 courses by the age of 10, according to an article co-authored by Blaser appearing in *Science Translational Medicine*.

The microbiome research of Blaser and his team of investigators at NYU's Blaser Lab Group has evolved over the years.

Societal Considerations for Microbiota-directed Interventions for Childhood Undernutrition

A recent review article in *Science*, co-authored by Jeffrey Gordon, MD, offered the following suggested societal interventions to address childhood undernutrition with microbiota therapies, which includes:

- ▶ Educating women about the microbiota and health
- ▶ Envisioning the impact of this knowledge and empowerment on child-rearing practices
- ▶ Assessing the cultural acceptability of microbiota-directed food products (includes labeling and associated public educational/advertising efforts)
- ▶ Defining price points for “affordability” and development of strategies that promote consumer compliance
- ▶ Identification of sources of ingredients and designing manufacturing systems and distribution infrastructures that provide local economic benefit in order to ensure sustainable production of these products
- ▶ Ensuring partnerships between governmental, nongovernmental organizations, and other potential stakeholders to enable broad implementation and mitigate risk for investment by industrial partners

Source: “Childhood undernutrition, the gut microbiota, and microbiota-directed therapeutics,” *Science*, June 24, 2016.

“We began about 30 years ago with studies of *Helicobacter pylori*, the ancestral major constituent of the human gastric microbiome,” Blaser explains. “This brought us to study the esophagus, skin, and colonic microbiome about 15 years ago.”


The Gut Microbiota and Childhood Undernutrition

Gordon has published extensive research on the global health challenge of childhood undernutrition and will lecture session attendees on “The Gut Microbiota and Childhood Undernutrition.”

Undernutrition is estimated to be linked with 2.7 million child deaths annually or 45% of all child deaths, according to the World Health Organization (WHO). Around the globe in 2015, the WHO also estimated that 156 million children under five years of age were found to be stunted, 50 million were found to be wasted, and 42 million were overweight or obese.

Gordon and fellow researchers have written several studies on the global crisis, notably a June 2016 article in *Science*. In the review article, the authors wrote that although current therapies have reduced mortality in children with severe disease, the approaches have been less effective in curbing the long-term negative impacts of undernutrition, such as stunting, immune dysfunction, and neurocognitive deficits. They believe this suggests that certain features of host biology are not being adequately repaired, which has led to the thought that healthy growth depends, in part, on normal postnatal development of the gut microbiota and that disruptions in its development may be related to undernutrition.

“Developing effective strategies for sustained repair of microbiota immaturity through food or microbial interventions requires preclinical studies of these mechanisms and modeling of the effects of different rates and routes of repair,” wrote Gordon and his co-authors in *Science*.

The Presidential Plenary will be held on the first day of **ENDO 2017** on April 1. 

In Concert:

BY DEREK BAGLEY

TREATING DIABETES AND HEART DISEASE



As the numbers of people with cardiovascular disease and diabetes are on the rise, so is the research on how to treat these comorbidities together. While no one treatment can apply to all patients, helping patients make proper lifestyle choices appears to be the key to longevity.



Cardiovascular disease (CVD) is the leading cause of death for men and women of most ethnicities in the U.S., and one of the main risk factors for CVD is diabetes, a disease whose numbers are skyrocketing.

According to a study published in *The New England Journal of Medicine* by Steven M. Haffner, MD, et al, patients with diabetes who have never had a myocardial infarction (MI) before have the same risk as suffering a MI as a nondiabetic patient with previous MI episodes. And patients with diabetes are 10 times more likely to suffer coronary artery disease (CAD) than their nondiabetic counterparts.

While none of this is uncharted territory for endocrinologists, it's a trend that continues to be investigated, and the prevalence of CVD in so many patients with diabetes is another example of diabetes' complicated nature. For example, in a paper published in December of 2015 in *Clinical & Investigative Medicine*, researchers led by Pendar Farahani, MD, MSc, assistant professor in the Department of Clinical Epidemiology and Biostatistics at McMaster University in Hamilton, Ontario, Canada, wrote that disparities exist in CVD outcomes between men and women with diabetes, with women having a more than 40% increased risk of coronary heart disease than men. The authors lay out a possible reason for this: lack of LDL cholesterol control, stemming from the fact that women are less tolerant of statins than men due to physiological differences between sexes.

Farahani explains that these findings point to the fact that when treating diabetes and its comorbidities, it's important to tailor treatment. A variety of factors — age, gender, socioeconomic status, and so on — contribute to how patients with diabetes and CVD respond to treatment. “My perspective is that we need to start [CVD] risk modification early and be proactive,” says Anne Peters, MD, professor of medicine at the University of Southern California, director of USC Westside Center for Diabetes, and a practicing physician at Keck Medicine of USC — Beverly Hills. “This is true for people with both type 1 and type 2 diabetes, although I always individualize my treatment.”

Peters says she uses coronary calcium scans in her patients with type 1 diabetes when she has trouble discerning true CVD risk, i.e., in someone with no family history of CVD, no metabolic syndrome feature, higher HDL and lower HDL, and active. In patients who have had type 1 diabetes for more than 20 years, she says, most, but not all, will have positive coronary artery calcium.

First Line of Defense

The American Diabetes Association (ADA) recommends that patients with diabetes be screened for CVD at least annually, and most endocrinologists agree that lifestyle modification is the first line of defense in preventing patients from developing CVD. “I see much more cardiac disease in my patients who are obese and inactive,” Peters says. “Lifestyle is always incredibly important.”

The big news coming out of last year's ADA annual meeting were the results of the LEADER trial, first presented at the meeting in New Orleans and then published in *The New England Journal of Medicine*. Researchers led by John Buse, MD, PhD, of the University of North Carolina School of Medicine concluded that liraglutide reduced CVD events in patients with type 2 diabetes. The Cleveland Clinic included this drug, as well as empagliflozin, in its top 10 medical innovations for 2017. "I love the fact that diabetes medications, particularly empagliflozin and liraglutide, have CVD risk reduction benefits," Peters says.

"Lifestyle Trumps Everything"

In an article for the *2015 Meet-the-Professor: Endocrine Case Management* book, Sam Dagogo-Jack, MD, director of the University of Tennessee Health Science Center Division of Endocrinology, wrote that one of the barriers to optimal treatment of CVD in patients with diabetes is "processing and integrating the multiple and mutating guidelines from numerous professional organizations regarding treatment goals for diabetes, hypertension, dyslipidemia, etc." This makes sense; in Farahani's study, the gaps in how men versus women respond to statin treatment didn't reveal themselves until guidelines called for higher and higher doses over the years.

Diabetes is already a complicated enough disease, and the development of CVD only compounds the problem. Peters says that she goes with her patients to their angiograms to prove to their cardiologists that people with diabetes whose risk has been well modified don't have stent-requiring CVD. Then again, there are times when CVD is inevitable; Peters says that CVD is "always lurking, but modifiable," so in that case, it's important to stay vigilant.

She relates the case of a 68-year-old female who has had type 1 diabetes since her mid-30s. The patient is on a pump and a sensor and Peters says she's been able to keep the patient's A1C to around 6.6% to 6.8% for the past 15 years. The patient is on a statin and ARB, and her blood pressure and lipids are well controlled. She's lean, eats well, swims five days a week, and directs a non-profit organization. "Last week I got a call from her," Peters says. "She was in the ER having terrible left side chest pain and was told she had a myocardial infarction. I felt so horrible! My preventive measures failed!"

The patient had a cardiac catheterization that fortunately revealed minimal plaque, and her troponins were all negative. However, Peters says that it's important to be aware that women present with myocardial infarctions differently than men do. Still, the patient may have had a much worse outcome had it not been for her active lifestyle and healthy diet. "This patient," Peters says, "like many of my type 1 [patients], is really health conscious. Lifestyle trumps everything."



ANNE PETERS, MD, professor of medicine, University of Southern California; director, USC Westside Center for Diabetes; practicing physician, Keck Medicine of USC – Beverly Hills

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My perspective is that we need to start [cardiovascular disease] risk modification early and be proactive.

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DEREK BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. HE WROTE ABOUT DIABETES AND THE AGING PATIENT IN THE DECEMBER 2016 ISSUE.

Put IT IN Print

BY GLENDA FAUNTLEROY



Navigating journal publishing can be an arduous task when you're up to your neck in research. However, *Endocrine News* offers up these tips to make the process smoother.

Your laboratory is conducting excellent research that promises significant results. Publishing a paper on your work in a scientific peer-reviewed journal is the main way to promote your laboratory's findings. Getting published has also become a major requirement in career advancement, although many scientists bristle at the writing and review process.

By following a few simple steps, you will fast become a pro at navigating this often daunting endeavor.

Choose Wisely

Do your homework when considering which journal best suits your research area of interest. An "endocrinology" keyword search in the National Library of Medicine journal catalog (www.pubmed.gov) yielded about 100 titles — both foreign and domestic. Start with the publications you and your fellow researchers read. Have any colleagues previously published their work or served as reviewers or journal editors? If so, they may help suggest the appropriate publication. The key is to assess whether the publication's audience will find your research interesting and noteworthy.

Good Research, Good Writing

Detailing your laboratory's study in a clearly written paper increases the chances of publication. Explain the points in each section, such as the abstract, methods, and discussion, with logic that is crisp and clean. Even while you're still conducting your research, start planning the structure of your paper. An increasing number of biomedical journals, such as *American Journal of Preventive Medicine* and *Fertility and Sterility*, now require authors to follow the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist. This checklist of 22 items was created to guide authors in the writing process to avoid "incomplete and inadequate" reporting of their research. To learn more about the STROBE list, visit www.strobe-statement.org. Be sure to circulate your drafts to all co-authors for their input and consider asking a respected colleague or mentor to review your paper for an extra critique.


Format, Format

Review the journal's website for its "Information for Authors." All journals are not created equal when it comes to style and format specifications. To avoid delays in your manuscript making it to the next step, make sure it follows the rules listed in the Information for Authors, including maximum word count, figure and table requirements, and reference style.

The Reviews Are In

It is very unlikely that your article will be accepted the first time without any correction. Chances are that it will be returned as either: "accept with minor revision," "revise and resubmit," or "rejected." All of these, however, can have good outcomes. Most often "minor revisions" can mean you forgot to cite a table or figure or you need to reorganize your references in alphabetical order. If your paper receives a "revise and resubmit," look over the reviewers' feedback and determine if you can make all the requests. Sometimes, researchers are not able to provide sufficient answers to reviewers' request because of how their study's methodology was initially structured. Keep in mind that the reviewers and journal editors aim to help improve your submission and see it published. Make all possible attempts to comply with their requests, thank them for their critique, and return the revised manuscript with a detailed letter of how you addressed each of their comments. What about a rejection? Rejections are not the end of the road. Follow the comments from the reviewers to improve your paper as much as possible and submit it elsewhere. An article in *Science* magazine reported its editors reject more than 90% of submitted papers. But the good news was the editors found that about 70% of the papers they rejected were eventually published in other journals.

Have Patience

Due the competitiveness of peer-review journal publishing, many researchers complain about the time it takes for a paper to meander through the stages of submission, review, revise, and publication. The wait can be long. At *Nature*, the median time it takes a paper from submission to publication has grown from 85 days to just above 150 days over the past 10 years, according to an article in the journal's February 2016 issue. Likewise, the article reported the review times at *PLoSOne* has jumped from 37 to 125 days over about the same period. While the days tick by, track your status in your online account, but know that when there is news, you'll be the first to know. 

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Keep in mind that the reviewers and journal editors aim to help improve your submission and see it published.

Make all possible attempts to comply with their requests, thank them for their critique, and return the revised manuscript with a detailed letter of how you addressed each of their comments.

”



FAUNTLEROY IS A FREELANCE HEALTH WRITER BASED IN CARMEL, IND., AND A REGULAR CONTRIBUTOR TO *ENDOCRINE NEWS*. SHE WROTE ABOUT THE ISSUES SURROUNDING THE FIRST UTERUS TRANSPLANT IN THE U.S. IN THE SEPTEMBER 2016 ISSUE.

Endocrine Society Sets Diabetes Legislative Agenda for 2017



As it is expected that more than half of Americans could develop diabetes or prediabetes by 2020, Congressional action to ensure patients have access to educational resources and an adequate physician workforce is critical. The Society continues to work with the Congressional Diabetes Caucus to address these important issues and is working with its members to underscore the importance of the following policy solutions for patients with diabetes:

- ▶ Reauthorizing the Special Diabetes Program, which enables NIH research on type 1 diabetes and access to diabetes prevention programs for at-risk American Indians and Alaska Natives.
- ▶ Appropriating \$25 million in FY 2017 CDC funding for the National Diabetes Prevention Program, an evidence-based lifestyle intervention program which has been shown to reduce the onset of diabetes by 71% among at-risk seniors.
- ▶ Implementing policy recommendations to reduce hypoglycemia noted in the Hypoglycemia Quality Collaborative Blueprint, a comprehensive approach developed by more than 15 specialty societies, patient advocacy groups, health plans, and industry stakeholders in diabetes that can be accessed at endocrine.org/hypoglycemia.

- ▶ Ensuring any replacement of the Affordable Care Act considers the health needs of the 29 million Americans with diabetes including the elimination of pre-existing condition exclusions, extending parental coverage of children until age 26, and access to high-quality diabetes care to prevent avoidable costs and complications.
- ▶ Creating a National Diabetes Clinical Care Commission to coordinate and streamline federal diabetes programs and to support clinicians in providing high quality care to people with diabetes and prediabetes. Legislation to create the Commission was one of four public health bills passed by the House at the start of Congress in January; now the Senate must take action.
- ▶ Obtaining Medicare coverage of continuous glucose monitors (CGM) and the creating a benefit category for CGM and related therapies to support access for artificial pancreas technology as it becomes available.

Society Weighs in on Top Policy Priorities with New Congress and Administration

Join Our Advocacy Campaigns to Have Your Voice Heard

On January 3, the 115th Congress was sworn in; on January 20th, Donald J. Trump took the oath of office as the 45th president of the United States. The Endocrine Society already has reached out to the president's transition team and congressional leadership to share our top policy priorities and offer our assistance as a resource on endocrine-related health and research issues.

In a letter to the new president, the Society's president, Henry Kronenberg, pointed out that every chronic disease of the 21st century has a link to hormonal issues, making endocrinologists indispensable to other physicians, patients, and policymakers who depend on their unique training, expertise, and perspective. He shared the Society's recommendations and highlighted the following policy priorities:

- Ensuring access to affordable healthcare
- Addressing the global epidemic of diabetes and obesity
- Supporting federal funding for biomedical research
- Reducing exposure to endocrine-disrupting chemicals (EDCs)
- Protecting women's healthcare
- Recognizing the value of endocrinologists
- Reducing regulatory burdens in research

TAKE ACTION: Members of Congress need to hear from their constituents about their concerns. We encourage all our U.S. members to join our current online advocacy campaigns and share our messages about the importance of funding for the National Institutes of Health and considerations for health reform. This will only take a moment of your time, but will have real impact. Please visit www.endocrine.org/advocacy. Our program provides a letter and directs it to your representative and senators. All you need to do is provide your ZIP code OR your membership ID.



CMS Lays Groundwork for CGM Coverage

Endocrine Society Advocacy Victory

On January 12, the Centers for Medicare and Medicaid Services (CMS) announced that it would be including continuous glucose monitors (CGM) in a new category of durable medical equipment for therapeutic use. This ruling follows many years of advocacy by the Endocrine Society and its coalition partners to expand coverage for CGM to the Medicare population. The Society is pleased with CMS's decision to move forward in laying the pathway for coverage of CGM and hopes this changes will result in expanded coverage for some of America's most vulnerable population.

Dr. Nicholas Argento testified on behalf of the Endocrine Society last year to advocate that the U.S. Food and Drug Administration (FDA) allow patients to use the Dexcom G5 CGM for non-adjunctive use. "This is a huge step forward for our T1D seniors, and a victory for the diabetes community," Argento says. "The Endocrine Society and other major diabetes organizations regard CGM as the standard of care for T1D and this decision is a critical first step in making a lifesaving tool accessible to those who are often most in need — seniors with T1D, many of whom are long-term survivors." The FDA recently ruled in favor of allowing non-adjunctive use of the Dexcom G5 CGM which enabled CMS to move forward with this decision.

Dr. Anne Peters, chair of *Diabetes Technology—Continuous Subcutaneous Insulin Infusion Therapy and Continuous Glucose Monitoring in Adults: An Endocrine Society Clinical Practice Guideline* stated that the ruling is in line with "guideline recommendations which clearly state that patients with type 1 diabetes should have access to CGM. Just because someone turns 65 or has Medicaid health coverage doesn't mean they shouldn't be able to use CGM — in fact, since those individuals have higher rates of hypoglycemia and poorer diabetes outcomes, it seems imperative that they have access to this technology."

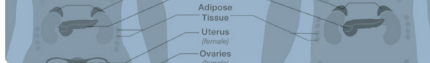
The Society has been working to expand coverage for CGM for a number of years and looks forward to continuing to work with the agency to ensure patient access to these lifesaving tools.



Manufacturers Take Action to Address Rising Insulin Prices; Patients May Be Eligible for New Discount Program

Eli Lilly and Company announced that it will offer discounted prices on insulin products purchased through certain online platforms as a step toward addressing increasing insulin prices. Starting January 1, 2017, Lilly's discounts, offered through a partnership with Express Scripts, will benefit people with diabetes who have no insurance and those who are covered by a high-deductible insurance plan and have not yet met the deductible. Lilly said people who currently buy insulin products at full price may save 40% by purchasing the products through Blink Health's web and mobile platforms (www.BlinkHealth.com).

The Society is concerned rising insulin prices have created a barrier that makes it challenging for people with diabetes who are insulin-dependent to obtain treatments they need. We continue to call on entities throughout the insulin supply chain – including manufacturers, pharmacy benefit managers, and insurers – to take action to ensure this life-saving therapy remains accessible to patients who need it. With greater transparency across the supply chain, we believe stakeholders can work together to help patients and providers maintain access to affordable, patient-centered therapies.



INTRODUCTION TO ENDOCRINE DISRUPTING CHEMICALS (EDCs) A GUIDE FOR PUBLIC INTEREST ORGANIZATIONS AND POLICY-MAKERS



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December 2014




ENDOCRINE SOCIETY
Hormone Science to Health



Society Creates New Web Resources for EDC Information

As policymakers develop modern regulatory structures for chemicals management, they increasingly seek the expertise of the Endocrine Society for policies governing endocrine-disrupting chemicals (EDCs). For example, in the U.S. the Endocrine Society has been engaged in efforts to reform the Toxic Substances Control Act, and regulatory oversight of personal care products. Internationally, Society members have been in meetings with European Commissioners and members of the European parliament, and we are an active participant in the Strategic Approach to International Chemicals Management. At the same time, Endocrine Society members have also been developing valuable content, tools, and resources for a variety of audiences, from scientific articles in our journals to fact sheets and other public education materials.

To make the most up-to-date, high-quality content easily accessible for all our audiences, the Endocrine Society has created a new web page where members and non-members can see and learn about the latest activities and Society content on EDCs. This new resource will have the latest news on the science of EDCs, updates on EDC regulatory policies and Endocrine Society statements, tools for scientists and non-scientists, and other information and resources. We hope that you will use this new website to engage with the Society and learn more about EDCs. For more information, please visit the Society's Endocrine-Disrupting Chemicals website at www.endocrine.org/edc. 

HORMONES AND YOUR HEART

WHAT YOU NEED TO KNOW

The endocrine system is a network of glands and organs that produce, store, and secrete hormones. Hormones influence many aspects of the cardiovascular system, which includes the heart and blood vessels. While hormones play a key role in maintaining cardiovascular health, high levels of some hormones can contribute to cardiovascular disease.

HORMONES AND HEART FACTS

The **pancreas** is a large gland behind the stomach and next to the small intestine. It produces insulin, a key hormone that “opens” cells to receive blood glucose needed for energy.

Insulin Resistance — cells don’t “open” normally and, in response, the pancreas creates too much insulin.

When too much glucose remains in the bloodstream, you can develop **type 2 diabetes** and **cardiovascular problems**, including **unhealthy cholesterol levels**, **high blood pressure**, and **heart disease**.



CARDIOMETABOLIC RISK FACTORS

- **High Blood Pressure (Hypertension)** is a main cause of heart and blood vessel (cardiovascular) disease
- **Unhealthy Cholesterol (Hyperlipidemia)** occurs when low density lipoprotein (LDL) or bad cholesterol is too high and/or high density lipoprotein (HDL) or good cholesterol is too low. Either or both of these changes may lead to plaque accumulation on the inner walls of arteries
- **High Triglycerides (Hypertriglyceridemia)** in combination with unhealthy cholesterol may add to plaque formation on the walls of arteries
- **Metabolic Syndrome** is a cluster of risk factors (high blood pressure, high blood triglycerides, low HDL, increased abdominal fat) that increase the chances of developing heart disease, stroke, and diabetes

Visit hormone.org for more information.

Additional Editing by Robert M. Carey, MD, MACP, *University of Virginia*

Sources: American Heart Association



Hormone Health
NETWORK®
FROM THE ENDOCRINE SOCIETY

YOUR DOCTOR CAN DETECT RISK FACTORS BY TAKING KEY MEASURES OF YOUR OVERALL HEALTH. HERE ARE HEALTHY RANGES:

Measure	Healthy Range
Waist circumference	under 40" (men); under 35" (women)
Triglycerides level	under 150 mg/dL
Fasting blood glucose level	under 100 mg/dL
Blood pressure	under 120 mm Hg (systolic) and 80 mm Hg (diastolic)
High-density lipoprotein (HDL) cholesterol	over 40 mg/dL (men); over 50 mg/dL (women)
Low-density lipoprotein (LDL) cholesterol	under 100 mg/dL

DID YOU KNOW?

Cardiometabolic problems often come from low activity levels and the foods we eat, but other factors — your genes, hormonal diseases, and certain medications — can also contribute to these conditions.

At least **68%** of people age 65 or older with diabetes die from some form of heart disease and **16%** die of stroke.

Adults with diabetes are **2-4** times more likely to have heart disease.

Diabetes is **1 of 7** major controllable risk factors for cardiovascular disease.



KNOW YOUR RISKS FOR HEART DISEASE:

- 2 to 4 times more likely to have heart disease or stroke if you have diabetes
- 1.8 times more likely to be hospitalized for a heart attack if you have diabetes
- 3 times more likely to have a heart attack if you are a woman with diabetes
- 2 times more likely to have a heart attack if you smoke

Source: American Heart Association

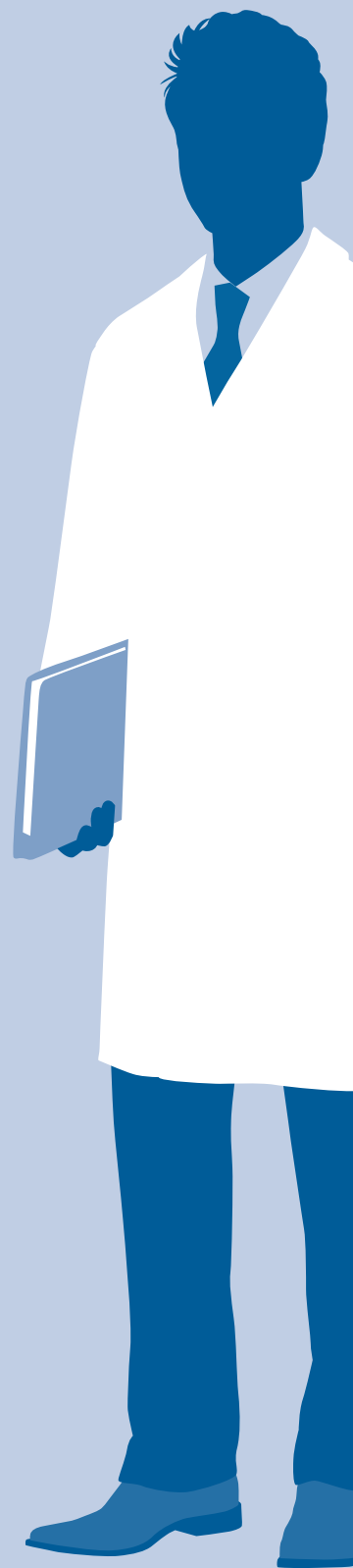
TREATMENT

A heart-healthy diet and brisk physical activity are nearly always part of a treatment plan for cardiometabolic risk factors. For many, medications will also be part of the plan. Be sure to follow your treatment plan exactly as your doctor prescribes so you can control your cardiovascular risk factors.

7 SIMPLE STEPS TO PREVENTION

- Control cholesterol
- Manage blood pressure
- Reduce blood sugar
- Eat right
- Lose weight
- Get moving
- Stop smoking

Source: American Heart Association



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

Change lives. Start with your own.

Aspirus is a nationally recognized, physician-driven health system based in Wausau which is located in the center of Wisconsin. The care we give to others is the reason Aspirus is thriving and unifying in spite of national health care changes.

There's a simple reason you chose a career in Endocrine Medicine.

We invite you to practice it here:

- Join our Endocrinologist and three Nurse Practitioners who practice 100% outpatient consultative endocrinology
- Collaborate with a dedicated and experienced support team, including Certified Diabetic Educators
- Flexible scheduling
- Large referral area that includes 20 counties, willingness to do outreach is preferred
- Potential teaching opportunities available through the Aspirus Wausau Family Medicine Residency program and the Medical College of Wisconsin both onsite
- Above average compensation package that includes income guarantee and production bonuses
- Other incentives: potential for residency stipend, loan repayment of up to \$200,000 and sign-on bonus options
- J1 and H1-B visa possibilities
- We pride ourselves on excellence: Aspirus Wausau Hospital recently received recognition as one of the 100 Best Hospitals in America for 2016
- EPIC EMR used throughout the system



Details at www.aspirusprovideropps.org

Contact Jamie Sitko at Jamie.Sitko@aspirus.org or 800.792.8728

PHYREC-163

Endocrinologist



Ochsner Health System in New Orleans is seeking **BC/BE ENDOCRINOLOGISTS** to join our expanding team that includes seven Endocrinologists, seven Advanced Practice Clinicians, and five Certified Diabetes Educators.

Opportunity details:

- Leadership opportunities available.
- Flexible call schedules.
- Sign-on bonuses and relocation assistance.
- Clinical practice opportunities include serving as investigator on diabetes clinic trials; US guided thyroid FNAs, as well as CGMS, thyroid US and Bone Density interpretation.
- Opportunity to engage in mentoring our four endocrinology fellows, as well as internal medicine residents and medical students on rotation.

Ochsner Health System is southeast Louisiana's largest non-profit, academic, multi-specialty, healthcare delivery system. Coordinated clinical and hospital patient care is provided across the region by Ochsner's 30 owned, managed and affiliated hospitals and more than 60 health centers. Ochsner employs more than 1,000 physicians in over 90 medical specialties and subspecialties and conducts over 600 clinical research studies. Ochsner is the only Louisiana hospital recognized by U. S. News & World Report as a "Best Hospital" across three specialty categories caring for patients from all 50 states and more than 80 countries worldwide each year. Our medical school, the Ochsner Clinical School, in partnership with the University of Queensland in Australia, enrolls 130 medical students each year. For more information, please visit our website at www.ochsner.org.

New Orleans is one of the most exciting and vibrant cities in America. Amenities include multiple universities, academic centers, professional sports teams, world-class dining, cultural interests, renowned live entertainment and music.

Interested physicians should email CV to profrecruiting@ochsner.org or call 800-488-2240.

Reference # NOEND-8

Sorry, no J-1 visa opportunities exist.

Ochsner is an equal opportunity employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, sexual orientation, disability status, protected veteran status, or any other characteristic protected by law.



REGISTER NOW FOR PRE-CONFERENCE PROGRAMS

ENDO 2017

ORLANDO, FL
ORANGE COUNTY CONVENTION CENTER
APRIL 1-4, 2017 (SATURDAY-TUESDAY)

Start ENDO 2017 early with special, hot topic programs featuring the most current, relevant information in endocrinology. Both researchers and clinicians at all levels will benefit from the enhanced learning at these special sessions.

KEY DATES

WEDNESDAY, MARCH 29 – THURSDAY, MARCH 30

Endocrine Fellows Series: Type 1 Diabetes Care and Management

FRIDAY, MARCH 31

Hands-On Thyroid Ultrasound Workshops:
Introductory Hands-On Thyroid
Advanced Hands-On Thyroid

EndoCareers® Early Career Forum

Diabetes Diagnosis & Management Workshop

Obesity Management Workshop

Don't wait, seats fill up fast.
For complete program and
registration fees, visit
ENDO2017.ORG