

DECEMBER 2017

THE LEADING MAGAZINE FOR ● ENDOCRINOLOGISTS

Endocrine news

INTERNATIONAL

The Year in ENDOCRINOLOGY

***Endocrine News* wraps up 2017 with a look at what made this year so remarkable. From research breakthroughs and new products to Endocrine Society members making a difference, we celebrate another banner year in the science and practice of endocrinology.**

- Society journal editors reveal the year's top breakthroughs in endocrine science.
- The 2017 Progress Report details just a few of the new therapies that could improve the lives of patients.
- EndoGear of the year: Top diabetes products of 2017.
- Endocrine advocates raise their voices and tell you how you can too!

NEW MACRA RULES:
Who will be hit the hardest?

WORK/LIFE BALANCE:
Quality time in and out of your lab.

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Hormone Science to Health

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CONGRATULATIONS TO THE NEW 2018 ENDOCRINE SOCIETY LEADERSHIP

We are pleased to announce the new Officers and Council members who will be joining our leadership team on March 20, 2018 at the conclusion of ENDO in Chicago. Please join us in congratulating and welcoming our future leaders!

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Hormone Science to Health

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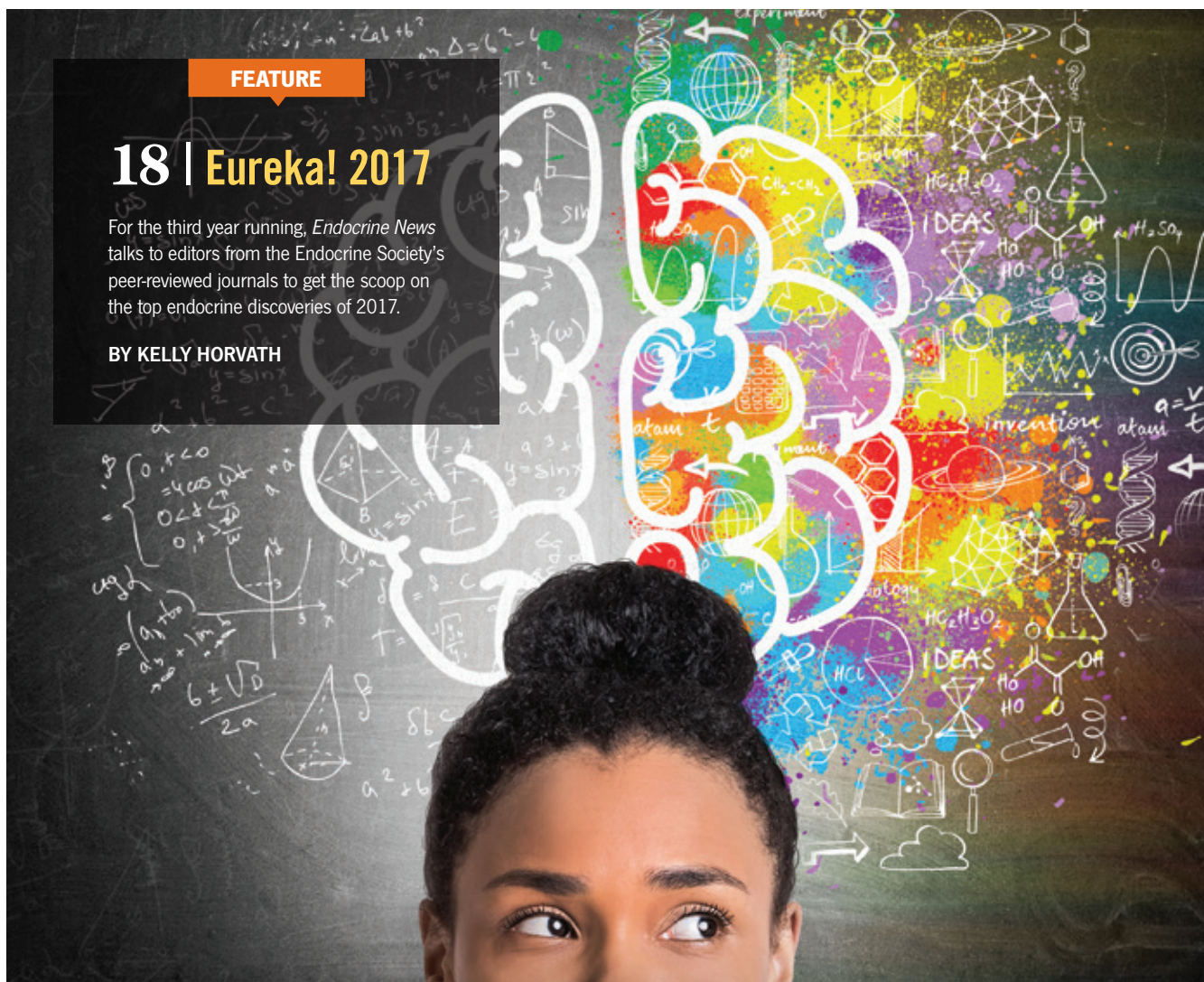
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impactful contacts come from the members, many of whom were on the front lines of this event. We spoke to Lindsey Trevino, PhD; T. Rajendra Kumar, PhD; Heather Patisaul, PhD; and Benson Akingbemi, PhD, about why they feel so strongly about becoming "endocrine advocates."

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www.endocrine.org



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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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FROM THE **EDITOR**



2017 Highlights of Endocrine Research & Treatments

WE WRAP UP 2017 WITH TWO ARTICLES THAT PROVIDE A somewhat comprehensive overview of what took place over the course of the year from an endocrine science and treatment perspective. In "2017: A Progress Report" on page 44, senior editor Derek Bagley has compiled an exhaustive roundup of some of the new products, therapies, and treatments that hit the market this year. From newly approved pharmaceuticals to the latest innovations in technology, we've done our best to cover all the bases in this extensive feature.

This year was no different from previous years in terms of endocrine research breakthroughs. For the third consecutive year, we are running "Eureka! The Year's Biggest Discoveries in Endocrine Science." This topic has proved to be so popular in the past that we decided to make this an annual feature (p. 18). This year's roundup is put together by Kelly Horvath, and she has talked with some of the editors from the Endocrine Society's own scientific journals to get their input on new breakthroughs that could easily affect the future of endocrine science for years to come.

Being an advocate for endocrine research is one of the Society's chief rallying cries, so we decided to highlight four members who have become "endocrine advocates" and have traveled to Washington, D.C., to make their voices heard. Our special roundtable, "Taking Action on Endocrinology" (p. 38) by Jessica Harris, takes a look at the members who have bravely stepped up and proudly served as representatives for endocrine research at a time when their voices are needed the most.

As 2017 comes to a close and the new year is dawning, that means that **ENDO 2018** is closer than you think! Taking place in Chicago from March 17 to 20, there's no time like the present to start planning your trip. Last March we featured the city of Orlando to entice any last-minute planners to get busy and come to **ENDO 2017** in April. However, we want to be proactive and let you contemplate your after-session activities even earlier, so we've included a Chicago travelogue this month. "Breezing Through the Windy City" (p. 30), once again written by Courtney Carson, will give you plenty of ideas of how to spend your time after the scientific sessions have ended. (And yes, tickets to *Hamilton* are available during **ENDO 2018**!) **EN**

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



Strengthening International Partnerships

THIS MONTH I'D LIKE TO UPDATE YOU ON SOME of our successful collaborations with sister organizations worldwide. During my presidential year, I have participated in several of these activities, many of them already becoming an ongoing annual event. Through these partnerships, we have the opportunity to meet our international colleagues, share research data, and identify ways to improve patient care worldwide.

European Congress of Endocrinology (ECE) – Joint Obesity Session

At the ECE in May 2017 in Portugal, we partnered with the European Society of Endocrinology (ESE) and the International Society of Endocrinology (ISE) to sponsor the second Joint Global Symposium, focusing on the prevention and treatment of childhood obesity. The first joint symposium took place in August 2016 at the International Congress of Endocrinology in Beijing, China. Next spring, we will host the third Joint Global Symposium at ENDO on March 17, 2018.

EndoCares: Diabetes in Peru, Argentina, Brazil, and Myanmar

As I mentioned last month, we held the second year of EndoCares: Diabetes in Lima, Peru, in August, following its successful launch in 2016. The program is a partnership with the Sociedad Peruana de Endocrinología, Asociación de Diabetes del Peru, and Liga Peruana de Lucha Contra la Diabetes. Similar to last year, EndoCares included sessions targeted to healthcare providers and sessions for type 1 and type 2 patients and their families. Additionally, several of our members, myself included, participated as speakers during the Peruvian Congress held just before the EndoCares program.

EndoCares expanded its global reach this year with the launch of programs in Argentina, Brazil, and Myanmar, again

as a partnership with local societies. In August, EndoCares: Diabetes was held in Buenos Aires, Argentina, in collaboration with the Sociedad Argentina de Diabetes. The two-day program comprised a series of educational workshops and lectures for general health care providers and patients with type 1 and type 2 diabetes. On the second day, a symposium and roundtable discussion about treatment for diabetes were attended by approximately 1,000 diabetologists and endocrinologists.

In November, we launched the first EndoCares: Diabetes in Brazil. The program was held in partnership with the Brazilian Diabetes Society during its 2017 meeting in Sao Paulo and included healthcare provider and patient-focused sessions. We are already working with our local partners to participate in next year's Brazilian Congress of Endocrinology and Metabolism.

In mid-November, I joined some of our colleagues to attend the 19th ASEAN Federation of Endocrine Societies (AFES) Congress in Yangon, Myanmar, along with approximately 900 attendees. In addition to our speaking roles, we participated in "Meet the Professor" sessions, and Dolores Shoback, MD, Bill Young, MD, and I discussed case management with the endocrine trainees and faculty at

one of the medical school hospitals. Prior to the meeting, the Endocrine Society co-hosted an ENDOCares: Diabetes with our local partner, the Myanmar Society of Endocrinology and Metabolism. As an example of the vigorous intellectual exchange that occurred, after speaking on Betel nut chewing as a secondary cause of diabetes, I had a number of conversations about gaps in understanding of this phenomenon and what additional research would be desirable.

Endocrine Summit and Dimensions in Diabetes

We continue our ongoing educational programs in India.

“
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”

This year we offered a record number of four live meetings and numerous enduring programs to endocrinologists, diabetologists, and a new audience for the Society: cardiologists.

EndoBridge®

EndoBridge®, our collaboration with the Society of Endocrinology and Metabolism of Turkey (SEMT) and European Society of Endocrinology, was held successfully for its fifth consecutive year. This year, more than 400 delegates gathered in Antalya, Turkey, to present and discuss clinical endocrinology topics. I attended the meeting as one of the invited speakers and also participated in a press conference to promote awareness of endocrine disorders, at which Dr. Yildiz's presentation on the microbiome generated great interest.

Highlights of ENDO: Saudi Arabia


The Saudi Diabetes and Endocrine Association (SDEA), in collaboration with the International Diabetes Federation (IDF) and the Endocrine Society, held its congress in early November in Al-Khobar, Saudi Arabia. Several Endocrine Society members participated as faculty in this three-day event focusing on diabetes.

Joint Meeting of Argentinian Biosciences Societies

Also in November, through a new partnership with the Argentinian Society of Clinical Investigation, we co-sponsored the 2017 Joint Meeting of Argentinian Biosciences Societies in Buenos Aires. The meeting had approximately 4,000 attendees, including basic and clinical scientists from Argentina, Brazil, and Chile. The goal of this meeting was to promote the exchange of ideas about the biochemical and molecular basis of human disease, and to promote the networking of young scientists from South America with colleagues from around the world.

These collaborations align completely with the global focus of SP4 (more on that in January's letter), and with our rapidly increasing non-American membership demographic. President-elect Susan Mandel, MD, and other Endocrine

Society members have already met with the program organizing committee for the International Congress of Endocrinology to be held in South Africa in 2018, and other partnerships are planned also. Many of you are members of local/national societies as well the Endocrine Society — please let me know if you would like to broker this type of collaboration between the two organizations.

In closing, I'd like to wish everyone a productive, invigorating, and healthy New Year, and look forward to seeing you at our March Chicago meeting (or elsewhere around the world). 

— **Lynnette Nieman, MD**, President, Endocrine Society

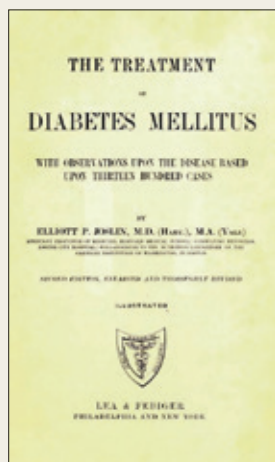
“Whether you participate in MACRA or not, if you provide healthcare, you are going to be doing so in a value-based world. Even if your fee schedule is not adjusted, your referral physician may be working in an alternative payment model, and you may have commercial contracts that are value-based. To be successful, we’re all going to need to work on making this transition.”

— DANIEL T. MCCALL IV, MD, MSPH, of Hattiesburg Clinic, Hattiesburg, Miss., discussing the Medicare Access and CHIP Reauthorization Act (MACRA) in this issue’s “MACRA Exclusions: A Mixed Blessing?” on page 24.

FROM THE CENTURY OF
ENDOCRINOLOGY TIMELINE

1916:

*Treatment of
Diabetes Mellitus
by Elliott Joslin
First Published*



Before the discovery of insulin, Elliott Proctor Joslin, published his first edition of *The Treatment of Diabetes Mellitus*. Joslin, considered a pioneer in the treatment of diabetes, was the first doctor in the U.S. to specialize in the disease, and this distinction is the first of many “firsts” associated with him.

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

20%

Number of American adolescents who are obese according to a new report issued by the Centers for Disease Control and Prevention on October 13. This is the highest rate of obesity ever recorded for the U.S.

— SOURCE: CDC.GOV

79 million

The number of
Americans estimated
to have pre-diabetes

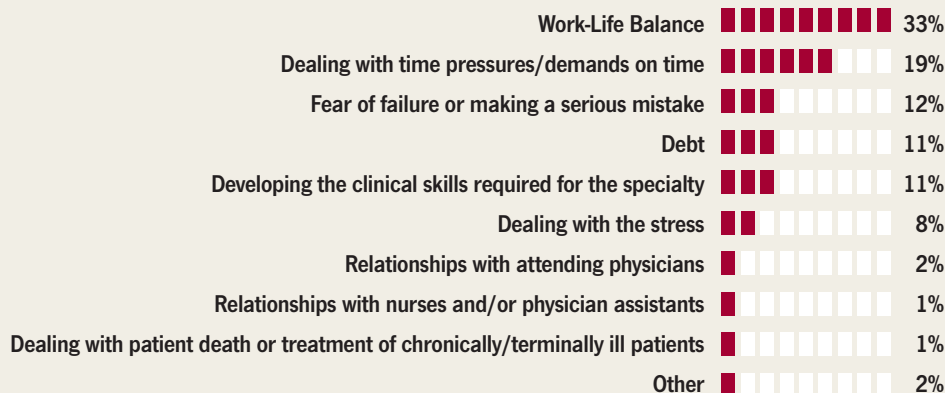
— SOURCE: U.S. CENTERS FOR DISEASE CONTROL & PREVENTION

9%

The number of
expectant mothers
diagnosed with
gestational diabetes

— SOURCE: U.S. CENTERS FOR
DISEASE CONTROL & PREVENTION

Biggest Challenges Clinicians Face in Residency



— SOURCE: RESIDENTS LIFESTYLE & HAPPINESS REPORT 2017/MEDSCAPE



Event faculty and volunteers all “muscling up for diabetes prevention.”

On November 18, the Endocrine Society, George Washington University, and the Consulate General of Peru partnered to educate the local expatriate and immigrant communities about diabetes.

As part of Diabetes Awareness Month, the organizations held an outreach event and health fair at the Consular office, marking the first time that the Society’s global outreach campaign has hosted a program in the U.S. The Society launched the award-winning campaign, EndoCares, with a two-day program for healthcare providers and individuals with diabetes in Peru in 2016.

According to Nicole Ehrhardt, MD, of George Washington University in Washington, D.C., who was one of the volunteers staffing the health fair, the event was a great success “as we screened almost 50 people for diabetes and engaged approximately 75 to 100 people about lifestyle, health, and diabetes prevention with topics including label reading, the healthy plate, and increasing activity,” she says. “Small changes in lifestyle can make a huge impact on long-term health and we hope to have helped encourage those changes in this Latino population that is at potential increased risk for developing diabetes. The GW students loved the event as they got to interact with participants and were able to use their Spanish. As I jokingly said at the beginning of the event, the reason we are doing this health fair is so no one here ever needs us.”

The health fair at the Consular office in Washington featured handouts on healthy Peruvian recipes and exercise demonstrations by George Washington University physical therapy students. Attendees had their A1c levels tested on site. Endocrine Society members and George Washington University faculty oversaw the event and were available to share their medical expertise. The free event was open to the public.

“We are thrilled to give back and educate area residents about preventing and managing diabetes,” Ehrhardt says. “Hispanic adults are 1.7 times more likely than Caucasian adults to be diagnosed with diabetes. We want to empower everyone to understand his or her individual risk factors and suggest ways to adopt healthy habits.” She adds that the program could not have been the success that it was without the contributions

GW faculty members Nisha Nathan, MD, assistant professor of medicine, Michael Irwig, MD, associate professor of medicine and director for andrology, as well as Ellen Costello, PT, PhD, associate professor and associate director of the GW Program in Physical Therapy who brought her PT students to the event.

EndoCares was recognized by the American Society of Association Executives with a Power of A Silver Award. More information on EndoCares is available at www.endocrine.org/about-us/endocares.



George Washington University medical student volunteers were important members of the team and spent the day providing guidance and education on nutrition and healthy choices to prevent diabetes.

AACE and Endocrine Society Partner to Address Insulin Affordability and Access



“We are concerned rising insulin prices have created a barrier hindering people with diabetes who are insulin-dependent from obtaining the treatments they need. The approved initiatives will engage stakeholders to work together to improve access to lifesaving therapies.”

— SUSAN J. MANDEL, MD, MPH, ENDOCRINE SOCIETY PRESIDENT-ELECT

The American Association of Clinical Endocrinologists (AACE) and the Endocrine Society have teamed up to address the high cost of insulin and the associated burdens placed on the millions of Americans who rely on costly daily insulin injections.

Together AACE and the Endocrine Society introduced a resolution in November at the 2017 Interim Meeting of the AMA House of Delegates that called on the AMA to pursue several initiatives aimed at improving insulin affordability for patients with diabetes. The resolution called on the AMA to convene a summit to identify potential solutions to the dramatic increase in insulin costs and also advocate for initiatives to reduce patient cost-sharing for insulins, stabilize drug formularies throughout a plan year to reduce non-medical switching of insulin products; facilitate greater transparency of insulin pricing, and integrate drug formularies into electronic health records.

Overwhelming support for addressing insulin costs and their impact on patients expressed on the floor of the House of Delegates led to a unanimous vote for the AMA to study these issues and provide a report with findings and recommendations to the House of Delegates at the 2018 Annual Meeting in June.

“We are concerned rising insulin prices have created a barrier hindering people with diabetes who are insulin-dependent from obtaining the treatments they need,” says the Endocrine Society’s president-elect Susan J. Mandel, MD, MPH. “The approved initiatives will engage stakeholders to work together to improve access to lifesaving therapies.”

“This is an important and encouraging step toward addressing the issues affecting insulin costs and the challenges that our patients face in accessing this medication,” says AACE president Jonathan D. Leffert. “AACE is pleased to partner with our friends at the Endocrine Society to help address this issue that is so critical to all of our patients.”



One of the press conferences during EndoBridge 2017. The experts who spoke to the press included (l to r): Sevim Gullu, Ankara University, Ankara, Turkey; Bulent Yildiz, MD, EndoBridge founder; Lynnette Nieman, MD, Endocrine Society president; and Felix Beuschlein, MD, University Hospital Zurich, Zurich, Switzerland.

EndoBridge Celebrates Fifth Year in Turkey

The fifth annual meeting of EndoBridge® — co-hosted by the Society of Endocrinology and Metabolism of Turkey, Endocrine Society, and European Society of Endocrinology — took place in Antalya, Turkey October 19-22.

The meeting brought together global leaders of endocrinology and 473 delegates from 39 countries, and was held in English with simultaneous translation into Russian, Arabic, and Turkish. Accredited by the European Accreditation Council for Continuing Medical Education (EACCME) and covering all aspects of endocrinology, the three-day program included 24 state-of-the-art lectures, 16 interactive case discussion sessions, and poster case presentations with over 80 clinical cases.

“This year we had a record number of participants, countries, and clinical cases presented,” says Bulent Yildiz, MD, a faculty member at Hacettepe University School of Medicine in Ankara, Turkey, and the founder and president of EndoBridge. “As usual, we heard inspiring lectures and discussed several interesting and challenging clinical cases, but more importantly the meeting again provided a great opportunity for our colleagues from



The faculty for EndoBridge 2017 hailed from around the world and included experts who gave presentations on more than 80 clinical cases.

around the world to interact with each other and share their experience and perspectives. In an era where building bridges becomes more and more important every day, the unique and highly influential model of EndoBridge continues to enhance cross-cultural dialogue, understanding, and collaboration beyond the national borders in the world of hormones.”

The sixth annual meeting of EndoBridge® will be held in Antalya, Turkey, October 25 – 28, 2018. Further information is available at www.endobridge.org.



EndoBridge 2017 had a record number of attendees from around the world which lent even more credence to the conference's goal of creating a cross-cultural dialogue beyond international borders while increasing knowledge about hormones.

Society's Hypoglycemia Twitter Chat Received Over 1 Million Impressions

Last month, the Endocrine Society hosted a Twitter chat as part of Diabetes Month, focusing on hypoglycemia, what it is, and how it affects patients — especially elderly patients — and efforts being made to reduce the risk of this dangerous condition.

Robert W. Lash, MD, professor of medicine at the University of Michigan in Ann Arbor and soon-to-be Society chief professional and clinical affairs officer, moderated the chat. Participants in the chat included Society chief executive officer Barbara Byrd Keenan, FASAE, CAE; the American Geriatrics Society; Health and Human Services Office of Disease Prevention and Health Promotion (ODPHP); the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK); Pharmacy Quality Alliance (PQA); and others. It was an interesting conversation, with participants answering questions about hypoglycemia's symptoms and treatment options, providing resources for physicians and patients, and sharing personal accounts of their or their family members' hypoglycemia episodes.

Twitter users saw the event hashtag, #EndoChat, an estimated 1.2 million times in the days leading up to the discussion and during the chat itself, according to the social media analytics firm Symplur.

The event successfully engaged several key stakeholders:

- The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) participated in the discussion. NIDDK's Twitter account has more than 3,400 followers.
- The American Geriatrics Society's Twitter chat posts were seen by Twitter users an estimated 115,300 times.
- The U.S. Department of Health and Human Services' Office of Disease Prevention and Health Promotion tweeted 13 times leading up to and during the chat.



- The Pharmacy Quality Alliance (PQA) and medical trade publication Medscape also joined the conversation.

Here are a few highlights from the chat:

- The NIDDK tweeted: "Severe symptoms of hypoglycemia require help from another person: Being unable to eat/drink, having seizures or convulsions (jerky movements), and falling unconscious."
- The ODPHP tweeted: "Our Nat'l Action Plan for ADE [adverse drug events] Prevention addresses the burden of #hypoglycemia as a serious public health issue."
- The American Geriatrics Society tweeted: "Older adults w #diabetes = more likely to visit a hospital for #hypoglycemia. Know treatment options."
- Keenan tweeted: "My mom said #hypoglycemia felt like dying; no one should have to feel that way. Better #Awareness #treatment needed."
- And PQA tweeted: "Managing #diabetes is a balancing act, especially when using #insulin. People who use insulin must closely match their insulin dose to how much food they eat, as well as their physical activity and other daily factors."



The Society will hold more Twitter chats throughout next year, covering a variety of endocrine health topics, so be on the lookout for the hashtag #endochat, and feel free to join the conversation. ^{EN}

ENDO2018

Chicago, Ill.

March 17 – 20, 2018

www.endocrine.org/endo-2018



With over 7,000 attendees, nearly 2,000 abstracts, and over 200 other sessions, **ENDO 2018** is the leading global meeting for endocrinology research and clinical care. Join us for the most well attended and valued translational endocrinology meeting in the world. Bringing together leading experts, researchers, and the most respected clinicians in the field, **ENDO 2018** represents a convergence of science and practice that highlights and facilitates breakthrough discoveries in the field of endocrinology. Spend time connecting with peers and colleagues, exchanging ideas and information, and getting out in front of the latest trends and advancements in hormone health. The meeting also hosts other satellite and pre-conference events.

Key Dates:

- **Advance Registration:**
December 1, 2017 – January 16, 2018
- **Late-Breaking Abstract Submission:**
January 11 – February 5, 2018
- **Housing Deadline:**
February 22, 2018

54th Annual Clinical Diabetes and Endocrinology Conference

Snowmass Village, Colo.,

January 20 – 23, 2018

The 54th Annual Clinical Diabetes & Endocrinology conference will address multifaceted approaches to the management and treatment of type 1 diabetes and type 2 diabetes, including both existing and emerging therapeutics; case studies in obesity and diabetes; updated diabetes technologies; and much more.

www.njhealth.org/diabetes-conference

2018 ISCD Annual Meeting

Boston, Ma., February 28 – March 3, 2018

The International Society for Clinical Densitometry's Annual Meeting will provide thought-provoking, case-based Plenary Lectures, Ask-the-Expert sessions and special education sessions covering the latest research, diagnosis, treatment and advances in bone densitometry and osteoporosis.

www.icsd.org/

9th International Congress of Neuroendocrinology

Toronto, Ontario, Canada, July 15 – 18, 2018

At the ICN 2018, 64 state-of-the-art speakers and eight plenary lecturers will cover the excitement of modern neuroendocrinology from molecules to behavior, across four main themes – metabolism, reproduction, stress, and timing. Highlights include four concurrent symposium sessions, poster sessions with networking opportunities, and top research in neuroendocrinology from around the world.

www.icn2018.org

EndoBridge 2018

Antalya, Turkey, October 2 – 28, 2018

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 25–28, 2018 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.

www.endobridge.org

18th International Congress of Endocrinology and 53rd SEMDSA Congress

Cape Town, South Africa,
December 1 – 4, 2018

The Society for Endocrinology, Metabolism and Diabetes of South Africa (SEMDSA) is proud and excited to have been selected to host ICE 2018 together with the 53rd annual SEMDSA Congress. The Program Organizing Committee is currently putting together a stimulating program including cutting-edge academic endocrinology for basic scientists and clinicians, as well as practical clinical sessions empowering doctors with the knowledge to optimize care for their patients with endocrine disorders.

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WHY ENDOCRINOLOGY?

Fine Tuning the “Hormonal Symphony”

BY MESUT SAVAS, MD, MSc, Department of Internal Medicine, Division of Endocrinology, Erasmus MC, University Medical Center Rotterdam, Rotterdam, The Netherlands

The human body has always captivated me with its delicate manner of maintaining homeostasis while also being able to adjust and adapt to changing circumstances. It was during secondary school that I learned that hormones play an important role in this balance. I remember the moment after my biology class when I enthusiastically tried to list all hormones I could think of, not knowing that this list was only getting bigger with time.

So far, my family history is free of serious endocrine disorders, so my first actual patient contact with endocrine pathologies took place during clinical rotations. During one of the bedside lectures, we encountered a young patient who had a variety of complaints that were difficult to assign to a single problem. We released a string of questions hoping that it would lead us in the direction of the problem. When I realized that the patient suffered from hypopituitarism confounded by deficits on almost all related hormonal axes, I felt a sense of euphoria that I'm sure many other young physicians-in-training can understand. It was the first time when all the diagnostic pieces seemingly fell into the right place.

This and many other similar cases fascinated me in the way that the “hormonal symphony” is responsible for many of our daily functions we normally take for granted. The moment one of the players, or more importantly the conductor, deviates from the score, this can impact our lives reflected in both physical and psychological complaints. This

can simultaneously show up in a single or a combination of several physical signs that can guide us in the diagnostic process. The latter was actually the greatest personal motivation to write my first medical book dedicated to physical examination.

Besides my clinical goals, I realized quite early during my medical education that I also wanted to pursue a career in scientific research. From my peers, I understood that there was an internist-endocrinologist at our academic center who was leading brilliant research of stress (glucocorticoids) and obesity. Both topics immediately grabbed my attention since I had already a great deal of interest in the pathophysiology of the stress system and its widespread effects on the body and because a large part of the general population was suffering from these conditions.

Knowing the busy schedule many of the internists have, I decided not to take the usual way of trying to make an appointment via the secretary but instead knocked on her door and directly introduced myself. Luckily, professor Elisabeth van Rossum was kind enough to let me tell my story, and I remember one of her first questions was exactly like the title of this column: “*Why endocrinology?*” Since this first meeting, I am fortunate to say that under her guidance I gained much experience in many aspects of science and am currently pursuing my doctoral degree in professor van Rossum's group.


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The combination of different perspectives and expertise has not only enhanced my personal growth but has also led to new insights, which in the end will hopefully benefit our patients.

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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.

The combination of doing research, seeing patients at our expertise obesity clinic, and educating medical students really fills me with enthusiasm and joy. One of the recent memorable moments so far is that our research, demonstrating strong relationships between local corticosteroid use and metabolic syndrome, was selected as one of a few from thousands of submitted studies to get press attention at **ENDO 2017** in Orlando. I felt that we may actually be able to contribute on a large scale to improving major health problems.

One of the other most intriguing features of my research, and I assume also of several other (endocrine) topics, is the fact that it comprises many aspects of the human body. This systemic involvement has opened the door for collaboration with scientists from all disciplines. The combination of different perspectives and expertise has not only enhanced my personal growth but has also led to new insights, which in the end will hopefully benefit our patients. 



EDITOR'S NOTE: The opinions and views of the author do not necessarily represent those of *Endocrine News* or the Endocrine Society.



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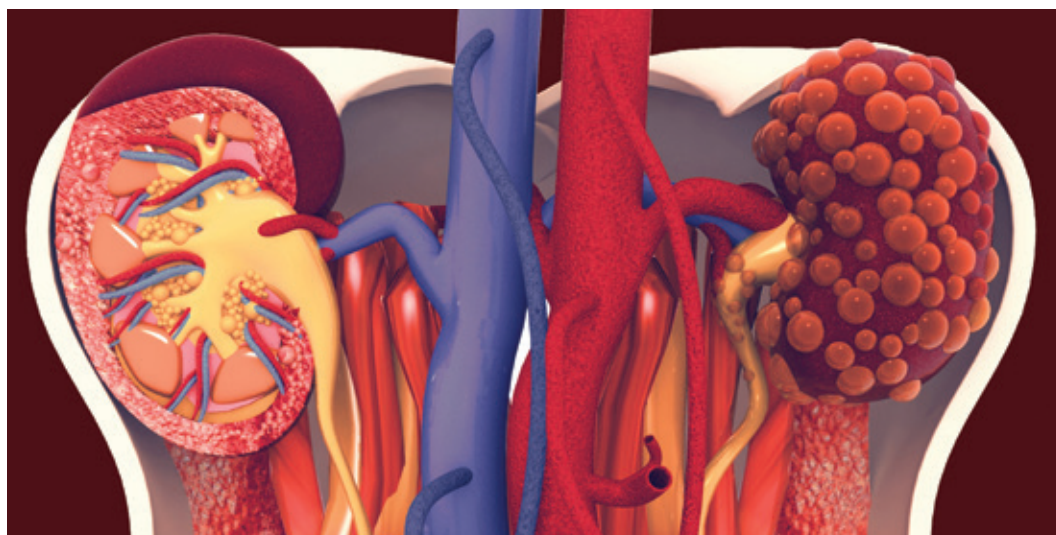
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BY DEREK BAGLEY
Senior Editor

TRENDS & INSIGHTS

Low Incidence of End-Stage Renal Disease in Childhood-Onset Type 1 Diabetes Followed for up to 42 Years



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Information was collected from the Norwegian Childhood Diabetes Registry (NCDR), a nationwide, population-based registry of childhood-onset T1D (diagnosis before 15 years of age) in Norway.

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Researchers in Norway have found very little incidence of end-stage renal disease (ESRD) among those with childhood-onset type 1 diabetes who were followed for up to 42 years, according to a study recently published in *Diabetes Care*.

Researchers led by Torild Skrivarhaug, PhD, of Oslo University Hospital, evaluated patient data for a follow-up period of up to 42 years post-diagnosis. Information was collected from the Norwegian Childhood Diabetes Registry (NCDR), a nationwide, population-based registry of childhood-onset T1D (diagnosis before 15 years of age) in Norway. Data from a total of 7,871 people — 4,242 males and 3,629 females — with T1D was included. Retrospective data was collected on 1,888 people diagnosed with T1D from January 1973 to December 1982, and prospective data was collected on 5,983 people who were diagnosed with T1D from January 1989 to December 2012. Beginning in 1989, all T1D cases have been

registered prospectively in the NCDR.

Study follow-up was completed until one of the following: patient development of ESRD, death, emigration, or completion of the study in 2015. Researchers estimated the cumulative incidence of ESRD by linking to the Norwegian Renal Registry and used the Kaplan-Meier method to estimate the cumulative incidence of ESRD by years since diagnosis of T1D.

Findings: The study found a very low incidence of ESRD among patients with childhood-onset diabetes in Norway, with 103 of 7,871 people (1.3%) developing ESRD. The average time from diagnosis of T1D to development of ESRD was 25.9 years. The cumulative incidence of ESRD was 0.7% at 20 years diabetes duration; 2.9% at 30 years duration; and 5.3% at 40 years duration. The risk of ESRD was lower in women compared to men and was lower in individuals diagnosed at a younger age.

Estradiol Therapy for Menopausal Symptoms May Protect Certain Types of Cognition from Stress



Treating menopausal symptoms with estradiol therapy (ET) may shield women from stress' negative effects on some types of memory, according to a study published in *The Journal of Clinical Endocrinology & Metabolism*.

Researchers led by Alexandra Ycaza Herrera, PhD, of the University of Southern California in Los Angeles, point out that one negative effect of stress is interference with working memory, and that since ET can reduce the hypothalamic-pituitary-adrenal (HPA) response to stress, "the hormone may also mitigate the effects of stress on working memory by limiting the cortisol response to the stressor."

"We know estrogen can modify women's hormonal response to stress, and we wanted to test whether such modifications also altered its subsequent effects on memory," Herrera says. "Our study suggests that estrogen treatment after menopause protects working memory needed for short-term cognitive tasks from the effects of stress."

The researchers recruited 42 participants for the study from the double-blinded, placebo-controlled, randomized Early versus Late Intervention Trial with Estradiol (ELITE), in which 21 women received estrogen therapy for menopausal symptoms and 21 women received a placebo for a median of randomized 4.7 years. The women provided saliva samples so the researchers could measure their levels of cortisol.

During two separate sessions, each participant completed a memory task in which they were instructed to remember the final word of each sentence. Prior to one of the sessions, the women

submerged their non-dominant hand in ice water for as long as possible, for a maximum of three minutes. During the other session, the women submerged the same hand in warm water before completing the memory test. Although the women who were receiving estrogen therapy reported feeling more stressed by the cold water exposure than the women who received the placebo, they had lower levels of cortisol than their counterparts following the stress test. Women receiving hormone therapy performed about the same on the memory task, regardless of whether they were exposed to the cold water stressor in advance or not. Women who were taking the placebo performed worse on the memory task following exposure to the cold water than they did when they were not exposed to a physical stressor.

Findings: The researchers note that while their primary hypotheses were supported, there were some limitations, such as the small sample size and that larger studies will need to be conducted in order to confirm the results. "Despite these limitations," the authors conclude, "this study suggests there are other roles of ET besides relief from menopause-related symptoms, including limiting effects of stress on working memory and perhaps aiding in maintenance of proper HPA reactivity."

"The findings give us new insight into how estrogen treatment after menopause affects women," Herrera says. "Although more research is needed, this may make estrogen therapy more attractive as a treatment for menopausal symptoms as well as a potential preventative strategy against a host of other age-related declines."



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We know estrogen can modify women's hormonal response to stress, and we wanted to test whether such modifications also altered its subsequent effects on memory. Our study suggests that estrogen treatment after menopause protects working memory needed for short-term cognitive tasks from the effects of stress.

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Clinical Features and Outcomes in Children with Adrenocortical Tumors without Germline TP53 Mutations Described

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The team looked at genomic DNA in 60 children without germline TP53 mutations (42 girls and 18 boys) with a median age of 3.3 years (0.25 years to 21.7 years), analyzing for TP53, CTNNB1, CDKN1C, ATRX, and chromosome 11p15 abnormalities. They also evaluated beta-catenin express and Ki-67 labeling index (LI).
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Researchers have described clinical features and outcomes in children with adrenocortical tumors (ACTs) without germline TP53 mutations, according to a study recently published in the *Journal of Clinical Oncology*.

Emilia Modolo Pinto, PhD, Raul C. Ribeiro, MD, and colleagues of St. Jude Children's Research Hospital in Memphis, Tenn., point out that ACTs are cancers caused mostly by germline mutations in the tumor suppressor gene TP53 but are also rarely associated with genetic constitutional disorders like Beckwith-Wiedemann syndrome (BWS), and that approximately half of children with ACTs don't actually have TP53 germline mutations, and the tumorigenesis and tumor progression in these children are not well understood.

So the team looked at genomic DNA in 60 children without germline TP53 mutations (42 girls and 18 boys) with a median age of 3.3 years (0.25 years to 21.7 years), analyzing for TP53, CTNNB1, CDKN1C, ATRX, and chromosome 11p15 abnormalities. They also evaluated beta-catenin express and Ki-67 labeling index (LI). “Primary endpoints were progression-free (PFS) and overall survival.”

The researchers analyzed TP53 in 54 of the 60 patients and observed somatic TP53 alterations in nine samples. One sample showed complete deletion of TP53. B-catenin alterations were seen in 43% of cases. “Three-year PFS and overall survival for all patients were 71.4% and 80.5%, respectively,” the authors write. “In single-predictor Cox regression analysis, age, disease stage, tumor weight, somatic TP53 mutations, and Ki-67 LI were associated with prognosis. Ki-67 LI and age remained significantly associated with PFS after adjusting for stage and tumor weight. Three-

year PFS for 27 patients with Ki-67 LI [greater than or equal to] 15% was 48.5% compared with 96.2% for 29 patients with Ki-67 LI [less than] 15% (log-rank $P = .002$), and the rate of relapse increased by 24% with each 1-year increase in age at diagnosis (hazard ratio, 1.24; $P = .0057$).” Of note, six of nine patients in the study showed germline abnormalities of chromosome 11p15 but did not have clinical signs of BWS.

The authors write that these results show significant overlap in children with germline TP53 mutations (mutTP53-ACTs) and those without (wtTP53-ACTs). They also show differences between the two groups. “Approximately 90% of patients with mutTP53-ACTs develop adrenocortical tumors by 5 years of age (peak incidence, 1 to 3 years); thereafter, the risk decreases and remains low throughout life,” the authors write. “In contrast, 37% of our patients with wtTP53-ACTs were diagnosed after the age of 5 years. More than 90% of children with mutTP53-ACTs secrete androgens or androgens plus cortisol, whereas this pattern of hormonal secretion is seen in only approximately 55% of patients with wtTP53-ACTs.”

Findings: The researchers conclude that clinical features and prognostic factors in children with ACTs, with and without TP53 mutations, overlap, but genetic alterations contributing to the tumors are diverse between both groups. “Based on this study and other previous findings, detailed analysis of constitutional 11p15 abnormalities, including genetic and epigenetic alterations, should be considered in all children with ACTs irrespective of the absence of features of BWS or other growth disorders,” the authors write. “We also recommend that Ki-67 LI be included in histologic characterization to improve the pathologic classification of pediatric ACT.”

Researchers Show Link Between Sugar-Sweetened Beverages and Health Problems




Researchers in South Africa have shown that regularly drinking sugar-sweetened beverages (SSBs) contributes to the development of diabetes, high blood pressure, metabolic syndrome, and other endemic health problems, according to a review recently published in the *Journal of the Endocrine Society*.

The review's authors, led by M. Faadiel Essop, PhD, of Stellenbosch University in Stellenbosch, South Africa, point out that in 2011, the United Nations announced for the first time that noncommunicable diseases pose a greater health risk than infectious diseases in both developed and developing countries and that a five-year, South African Adult Prospective Urban and Rural Epidemiology cohort study showed an association between higher consumption of added sugars and sucrose-sweetened beverages with increased noncommunicable disease risk factors. "Sugar-sweetened beverage consumption is steadily rising among all age groups worldwide," says Essop. "Our analysis revealed that most epidemiological studies strongly show that frequent intake of these beverages contributes to the onset of the metabolic syndrome, diabetes and hypertension."

The authors reviewed 36 studies on the cardiometabolic effects of SSB consumption from the past decade. Since some recent studies reached conflicting findings regarding the relationship between beverage consumption and health conditions such as diabetes and heart diseases, the researchers critically assessed the

research landscape for overall trends. Although there were some studies with negative or neutral findings, most of the studies supported a link between SSB consumption and the risk of developing the metabolic syndrome. "After careful examination of the available clinical studies, it is clear that SSB consumption does trigger metabolic perturbations together with the development of obesity," the authors write.

Findings: Studies on diet and diabetes revealed that consuming as few as two servings of SSBs a week was linked to an increased risk of developing type 2 diabetes. Several of the analyzed studies found drinking at least one sugar-sweetened beverage a day was associated with elevated blood pressure. "Together these data highlight the need for (1) well-designed basic and clinical studies to obtain a clearer picture, (2) further research into the molecular mechanisms underlying the development of such debilitating conditions, and (3) increased roll-out of educational programs to inform the general public of the harmful effects of high SSB intake," the authors conclude.

"The findings demonstrate there is a clear need for public education about the harmful effects of excess consumption of sugar-sweetened beverages," Essop says. "But our understanding of this topic would benefit from additional research to further clarify how sugar-sweetened beverages affect our health. We do see some limitations in the current research on this topic, including a need for longer-term studies and standardized research methods." 



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After careful examination of the available clinical studies, it is clear that SSB consumption does trigger metabolic perturbations together with the development of obesity.

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2017 Eureka!



BY KELLY HORVATH

For the third year running, *Endocrine News* talks to editors from the Endocrine Society's peer-reviewed journals to get the scoop on the top endocrine discoveries of 2017.

Scientists know all too well that good research takes time. Breakthroughs are hard won, often requiring decades to achieve. Therefore, when notable progress does happen, it deserves to be shouted from the rooftops. In endocrinology, vital research was published during the past year that will ultimately have a profound impact on the lives of many.

This article presents highlights from what eight editors from *The Journal of Clinical Endocrinology & Metabolism* (JCEM), *Endocrinology*, *Endocrine Reviews*, and *Journal of the Endocrine Society* deemed the most important endocrinology studies of 2017. From elucidating new molecular pathways to demonstrating efficacy of pharmaceutical agents to developing new clinical tools, taken together, these dramatic discoveries provide a snapshot of this year's successes in endocrinology and offer the scientific and medical communities plenty to get the adrenaline going.

Testosterone Study Leaps Forward (and Gets a Standardization Tool)

Picking up from *Endocrine News*' 2016 "Eureka!" article, Alvin M. Matsumoto, MD, professor at the University of Washington, associate director of the VA Puget Sound Geriatric Research,

Education and Clinical Center and an associate editor for *JCEM*, cites several male reproductive endocrinology papers as landmark achievements: papers reporting the remaining four (of seven) studies of the Testosterone Trials, as well as one reporting on a harmonized reference range for testosterone levels.

"Testosterone Treatment and Cognitive Function in Older Men With Low Testosterone and Age-Associated Memory Impairment," by Resnick, S.M., et al., and "Testosterone Treatment and Coronary Artery Plaque Volume in Older Men With Low Testosterone," by Budoff, M.J., et al., were published in *JAMA* in February; "Association of Testosterone Levels With Anemia in Older Men: A Controlled Clinical Trial," by Roy, C.N., et al., and "Volumetric Bone Density and Strength in Older Men With Low Testosterone: A Controlled Clinical Trial," by Snyder, P.J., et al., were published in *JAMA Internal Medicine* in April.

Taking place from 2010 through 2014, the Testosterone Trials consisted of a coordinated set of seven placebo-controlled trials of a total of 788 men age 65 years or older with symptomatic hypogonadism. Compared with placebo, one year of treatment with testosterone gel did not significantly improve cognitive function in 493 participants with age-associated memory impairment and significantly increased coronary artery



Compared with placebo, one year of treatment with testosterone gel did not significantly improve cognitive function in 493 participants with age-associated memory impairment and significantly increased coronary artery noncalcified plaque volume in 138 participants (of unclear significance, but concerning), hemoglobin levels in 126 participants with unexplained anemia as well as with anemia of known causes, and bone mineral density and estimated bone strength, more in trabecular bone and the spine than in peripheral bone and in the hip of 211 participants.

noncalcified plaque volume in 138 participants (of unclear significance, but concerning), hemoglobin levels in 126 participants with unexplained anemia as well as with anemia of known causes, and bone mineral density and estimated bone strength, more in trabecular bone and the spine than in peripheral bone and in the hip of 211 participants. Taken together with the report of the three main trials published previously (*New England Journal of Medicine* in February 2016), the Testosterone Trials demonstrated some clear short-term benefits of testosterone therapy in older hypogonadal men. They also highlighted the need for a larger, longer-term study to determine the long-term clinical benefits and risks (particularly cardiovascular risk) of testosterone treatment.

In the setting of rampant overprescribing, such as in older men who are experiencing low energy yet do not exhibit the classic symptoms of hypogonadism, the short-term efficacy of testosterone treatment in older hypogonadal men is critical for clinicians to know. “The Testosterone Trials and a longer-term clinical study of the benefits and safety of testosterone therapy have been a 20-year goal in my life as an academic physician,” Matsumoto says.

The final paper that Matsumoto cited also concerns testosterone and provides material assistance to clinicians considering prescribing it. Published in *JCEM* in April, “Harmonized Reference Ranges for Circulating Testosterone Levels in Men of Four Cohort Studies in the United States and Europe,” by Travison, T.G., et al., is the first study to define what the normal reference range is for testosterone levels in 9,054 healthy, non-obese men — information that will help practitioners diagnose hypogonadism.

This Endocrine Society initiative analyzed the serum testosterone levels from four epidemiologic studies: the Framingham Heart Study, the European Male Aging Study, the Osteoporotic Fractures in Men Study, and the Sibling Study of Osteoporosis. The levels were cross-calibrated in the Centers for Disease Control and Prevention (CDC) reference laboratory, and harmonized reference ranges were computed. For healthy, non-obese, European and American men, ages 19–39 years, the reference range for total testosterone was 264 to 916 ng/dL.

“In most hormone assays, reference ranges have not been based on populations this large. For testosterone, this is the first harmonized range to be generated, and it serves as a model to harmonize

“In most hormone assays, reference ranges have not been based on populations this large. **For testosterone, this is the first harmonized range to be generated, and it serves as a model to harmonize ranges for other hormones.**”



— ALVIN M. MATSUMOTO, MD, PROFESSOR AT THE UNIVERSITY OF WASHINGTON, ASSOCIATE DIRECTOR OF THE VA PUGET SOUND GERIATRIC RESEARCH, EDUCATION AND CLINICAL CENTER AND AN ASSOCIATE EDITOR FOR *JCEM*



ranges for other hormones,” Matsumoto says. “Its value is that the same reference range can be used by clinicians and researchers that measure testosterone levels using a CDC-standardized testosterone assay. The Endocrine Society, the Partnership for the Accurate Testing of Hormones (PATH), and the CDC’s Hormone Standardization (HoSt) program are working together to make sure that the testosterone and other major hormone assays are accurate and standardized.”

Two Promising Agents for Cardiovascular and Renal Health

Another associate editor for *JCEM* as well as professor at the University of Colorado Anschutz Medical Campus in Aurora, Robert H. Eckel, MD, selected two papers published in the *New England Journal of Medicine* in May and August, respectively, as the studies he found most impactful in endocrinology this year. “Evolocumab and Clinical Outcomes in Patients with Cardiovascular Disease,” by Sabatine, M.S., et al., showed that lowering low-density-lipoprotein (LDL) cholesterol below current targets can reduce the risk of a cardiovascular event in patients with atherosclerotic cardiovascular disease. The monoclonal antibody evolocumab inhibits proprotein convertase subtilisin-kexin type 9 (PCSK9) and was known to significantly reduce LDL cholesterol levels, but until now, it was unclear whether this would improve cardiovascular status. This trial randomized 27,564 patients with atherosclerosis and high LDL cholesterol levels (≥ 70 mg/d) to receive either evolocumab or placebo injections for roughly two years. LDL levels in the evolocumab group dropped to 30 mg/d, and members of that group experienced significantly fewer cardiovascular events.

Eckel’s other choice, “Liraglutide and Renal Outcomes in Type 2 Diabetes,” by Mann, J.F.E., et al., had previously randomized 9,340 patients with type 2 diabetes and high cardiovascular risk to receive glucagon-like peptide 1 analogue liraglutide or placebo

and determined that liraglutide lowered the risk of cardiovascular events. This current study focuses on a secondary renal end point. Although the long-term effects of liraglutide on renal outcomes are as yet unknown compared to placebo, liraglutide lowered the risk of development of new-onset, persistent macroalbuminuria as well as the rate of progression of diabetic kidney disease.

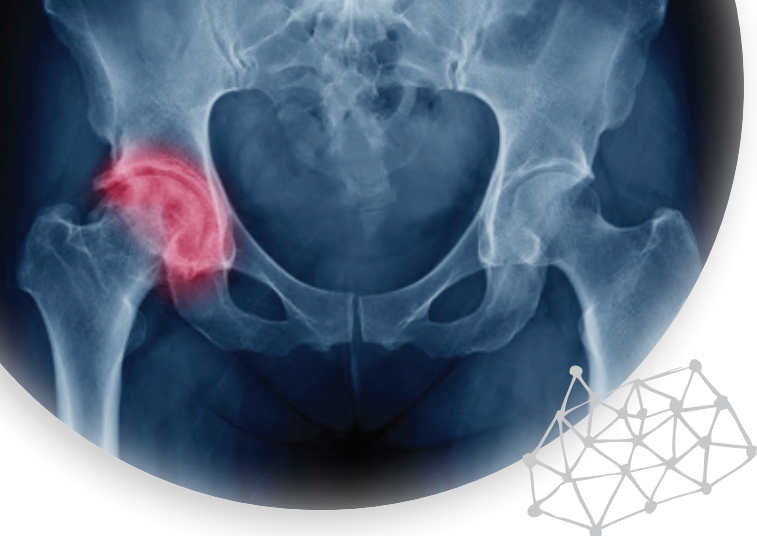
Tributyltin Adds Weight to the Obesogen Hypothesis

“Retinoid X receptor activation alters the chromatin landscape to commit mesenchymal stem cells to the adipose lineage,” by Shoucri, B.M., et al., and published in *Endocrinology* in October, was chosen by Andrea C. Gore, PhD, professor at the University of Texas at Austin and co-editor-in-chief for *Endocrinology*, as the study she found to have the most impact. The “obesogen hypothesis,” she explains, proposes that exposure to environmental chemicals predisposes individuals to obesity when exposures happen during critical windows of development.

These researchers treated mouse mesenchymal stem cells (MSCs) with tributyltin, a chemical they had previously demonstrated to be obesogenic. Tributyltin exerted a strong effect via the retinoid X receptor to induce the MSCs to differentiate into adipose cells rather than osteoblasts. Moreover, this adipogenic cascade is mediated by the decrease in histone mark H3K27me3 near genes promoting adipose commitment. “This study is important as it identifies novel molecular mechanisms by which obesogenic chemicals such as tributyltin predispose to obesity,” Gore says.

Another Piece of the Reproductive Puzzle Solved

Stephen R. Hammes, MD, PhD, professor at the University of Rochester School of Medicine and Dentistry and another co-editor-in-chief for *Endocrinology*, points to “The Steroidogenic



Acute Regulatory Protein (StAR) Is Regulated by the H19/let-7 Axis,” by Men, Y., et al., published in February in *Endocrinology* as his 2017 pick.

The StAR protein mediates the rate-limiting step in steroidogenesis in the gonads and adrenal gland. “While we understand some aspects of how StAR is regulated, there are still many mysteries,” says Hammes. Yet tight control of steroid production is critical for fertility and reproduction as well as carbohydrate metabolism and salt balance. “This paper demonstrates a novel regulatory pathway for StAR expression that involves the long noncoding RNA H19 and the micro-RNA let-7,” Hammes says. Researchers found that H19 increases expression of StAR and therefore may play a critical role in steroid production and reproductive processes.

Seeing Hope for Graves-Related Ophthalmopathy

Endocrine Reviews editor-in-chief Leonard Wartofsky, MD, MACP, and professor of Medicine at Georgetown University School of Medicine in Washington, D.C., gives “Teprotumumab for Thyroid-Associated Ophthalmopathy” top billing. By Smith, T.J., et al., and published in the *New England Journal of Medicine* in May, this study appears to be an important breakthrough in providing a more specific therapy for Graves ophthalmopathy.

“Over many decades of practice, I have treated perhaps scores of these patients, and we had little in our therapeutic armamentarium to offer them that would predictably lead to symptomatic or long-term improvement,” explains Wartofsky. “This agent now offers more hope for these patients.”

Researchers randomized 88 patients to receive teprotumumab, a human monoclonal antibody inhibitor of the insulin-like growth factor I receptor (which is implicated in the pathogenesis of ophthalmopathy), or placebo over 24 weeks. Teprotumumab patients saw reductions in proptosis and two or more points in the Clinical Activity Score significantly greater than those who received placebo (69% and 20%, respectively).

From Bones to Adrenals to Thyroids and NAD+ Again

Three associate editors for the *Journal of the Endocrine Society* also weighed in with what they consider the cream of the crop from the *Journal of the Endocrine Society*.

Andrew Arnold, MD, professor at the University of Connecticut in Farmington, gives the nod to “Hypocalciuria as a Predictor of Reduced Intestinal Calcium Absorption,” by Hanseree, P., et al., published in August, which presents a new screening tool for calcium malabsorption. Without adequate calcium intake and absorption, impairments in bone health can lead to osteoporosis. After measuring 24-hour urine in 230 postmenopausal women younger than 75 years of age over 12 months, these researchers posit that a 24-hour urinary calcium level below 150 mg/d can exclude calcium malabsorption and allow clinicians to recommend dietary changes to correct below-normal levels and optimize bone health.

Paul M. Stewart, professor at the University of Leeds School of Medicine in the United Kingdom, chose two studies: “A Patient (46XX) With Congenital Adrenal Hyperplasia and Prostate Cancer: A Case Report,” by Wesseliuss, R., et al., published in August, and “Targeting NAD⁺ in Metabolic Disease: New Insights into an Old Molecule,” by Elhassan, Y.S., et al., published in May.

In the first study, researchers showed that karyotypic females with congenital adrenal hyperplasia (CAH) treated with exogenous testosterone to become phenotypically male may be more likely to develop prostate cancer. This was the result even though, in the patient in this case, testosterone levels were maintained in the normal range for men. Their takeaway message is to screen for detectable levels of circulating prostate-specific antigen (and follow up periodically if found) in genotypically female patients with CAH who are candidates for testosterone replacement.

In Stewart’s second choice, researchers explore the health benefits of maintaining nicotinamide adenine dinucleotide (NAD⁺) homeostasis. Because insufficient NAD⁺ is linked to multiple metabolic and age-related diseases, they suggest that nicotinamide mononucleotide and nicotinamide riboside supplementation could boost endogenous NAD⁺ availability to counteract these diseases. Human studies will be necessary to demonstrate NAD⁺’s therapeutic efficacy.

Published in April, “Soy Protein Improves Cardiovascular Risk in Subclinical Hypothyroidism: A Randomized Double-Blinded Crossover Study,” by Sathyapalan, T., et al., caught the eye of Luca Persani, professor at the University of Milan in Italy. Because of



purported health benefits, dietary soy use has risen, but in susceptible individuals, such as those with subclinical hypothyroidism, thyroid function can be impaired as a result. In this study, 80 patients with compensated hypothyroidism were randomized to receive either isoflavone-free soy protein or casein protein supplementation for eight weeks. The soy group showed no deterioration of thyroid function while several cardiovascular risk factors, such as fasting glucose, insulin resistance, total cholesterol, triglycerides, and highly sensitive C-reactive protein levels declined significantly compared with those in the casein group. Thus, isoflavones appear to be the culprits in negative thyroid function effects and soy the vanquishing hero!

Finally, Ana Claudia Latronico, MD, professor at Sao Paulo University in Brazil chose “Healthcare Burden in Patients with Adrenal Insufficiency,” by Gunnarsson, C., et al., published in April, as the study she found most important this year.

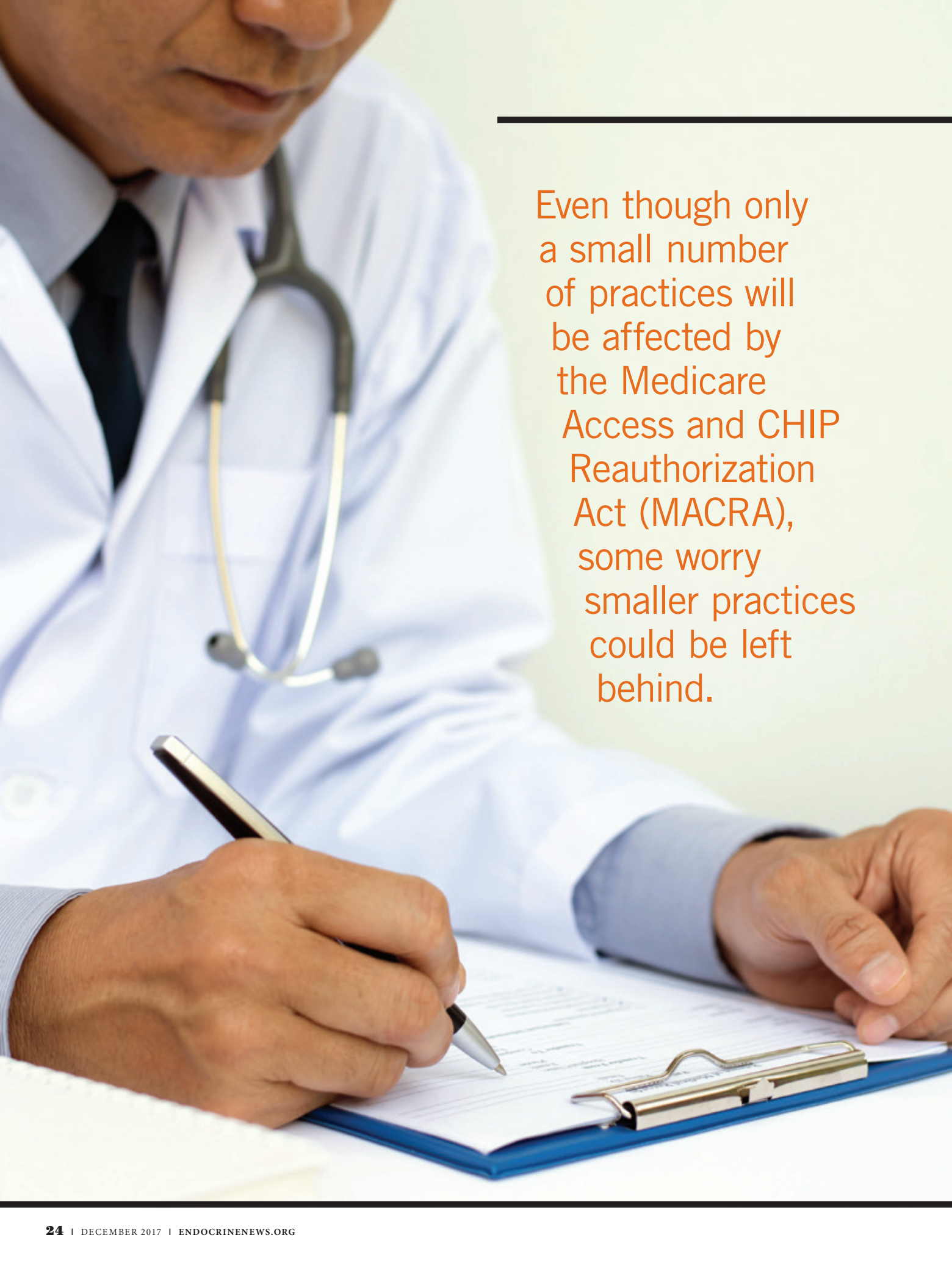
For 10,383 patients with primary or secondary adrenal insufficiency or congenital adrenal hyperplasia (CAH), researchers estimated their real-world annual healthcare burden. “Adrenal insufficiency is a life-threatening endocrine disease characterized by insufficient production of corticosteroid hormones. Affected patients have significant comorbidities, and they experienced high rate of hospital admissions, largely due to infection,” Latronico says. Compared with their matched controls, secondary adrenal insufficiency patients spent \$32,218 versus \$6,956, primary adrenal insufficiency patients spent \$18,624 versus \$4,320, and CAH patients spent \$7,677 versus \$4,203. “Expenditures were reduced in patients with higher adherence to glucocorticoid replacement,” she says.

There’s no doubt that 2017 has been a banner year for endocrinology. Novel discoveries, answers to old questions, and improved approaches to therapy are among the many findings to emerge in this field this year, paving the way for continued innovation in 2018 and beyond. ^{EN}

“ Over many decades of practice, I have treated perhaps scores of patients, and we had little in our therapeutic armamentarium to offer them that would predictably lead to symptomatic or long-term improvement. **[Teprotumumab] now offers more hope for these patients.**”

— LEONARD WARTOFSKY, MD, MACP,
ENDOCRINE REVIEWS EDITOR-IN-CHIEF,
PROFESSOR OF MEDICINE AT GEORGETOWN
UNIVERSITY SCHOOL OF MEDICINE IN
WASHINGTON, D.C.

HORVATH IS A FREELANCE WRITER BASED IN BALTIMORE, MD. SHE WROTE ABOUT A CONTROVERSIAL REGIMEN TO TREAT POLYCYSTIC OVARIAN SYNDROME IN THE SEPTEMBER ISSUE.

A close-up photograph of a doctor, likely a male, wearing a white lab coat over a dark shirt and tie. A stethoscope is draped around his neck. He is seated at a desk, holding a silver pen in his right hand and writing on a document held by a blue clipboard. His left hand is resting on the desk. The background is a plain, light-colored wall.

Even though only a small number of practices will be affected by the Medicare Access and CHIP Reauthorization Act (MACRA), some worry smaller practices could be left behind.

MACRA Exclusions:

BY FRANK CELIA

A Mixed BLESSING?

During its first year of implementation, because of various exclusions and threshold minimums, the Medicare Access and CHIP Reauthorization Act (MACRA) only applied to about one-third of all clinicians. In 2018, if the CMS proposed rule is finalized, an even smaller percentage of practitioners will be subject to the law. Citing the need to “move the program further in the least burdensome manner,” federal regulators tripled the Medicare billing threshold minimum and doubled the beneficiary threshold.

In other words, if you bill less than \$90,000 to Medicare or treat fewer than 200 Medicare patients, MACRA, which imposes reporting requirements, plus reimbursement penalties and bonuses based on patient outcomes, probably will not apply to you in 2018.

This leaves many endocrinologists, particularly small and solo practitioners, breathing a sigh of relief. It is not clear yet how many will be exempted, but the percentage will surely be high, probably a solid majority. (Consistently among the lowest paid physicians, endocrinologists billed Medicare on average only \$75,000 in 2014, according to CMS data.)

Great news, right? One less paperwork burden. A modest salary's silver lining.

Well, yes and no. Arguably, as the medical world transitions to value-based payment models, small specialties like endocrinology, exempted or not, risk being left behind if they sit on the sidelines too long. Furthermore, because of their expertise coordinating treatment for chronic diseases like diabetes, endocrinologists stand to be among the biggest winners in value-based care — so exclusion might be a missed opportunity.

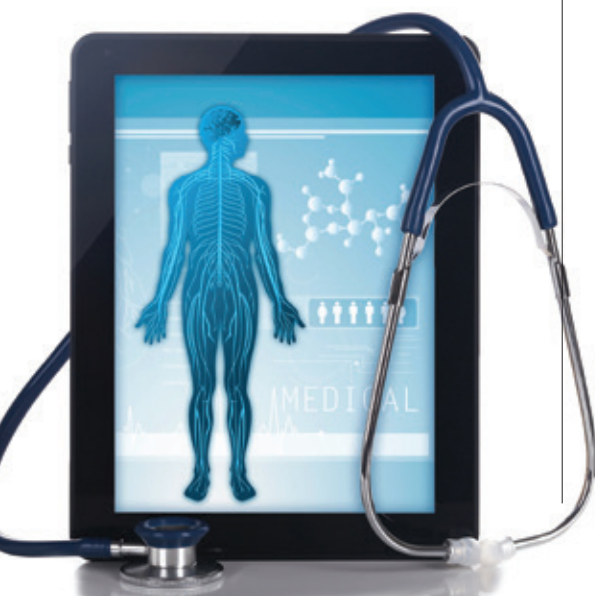
But short-term monetary issues aside, the bigger concern may be maintaining a voice in how value-based payment evolves. Part of MACRA's rollout involves regulators cooperating with physician groups to develop and endorse quality health benchmarks. Some worry that specialties that fail to secure a seat at the table early on could end up excluded from future payment models.

Can Kicking

Designed to incentivize healthcare away from fee-for-service billing and toward value-based care, MACRA, passed nearly unanimously in 2015, creates a Medicare payment structure that rewards improved outcomes and cost savings and penalizes poor outcomes and cost overruns. Practitioners subject to the law will fall into one of three payment groups: The Merit Based Incentive Payment System (MIPS); the Alternative Payment Model (APM); or the Advanced Alternative Payment Model (AAPM).

“Endocrinology is at the very heart of coordination of care. We’ve always dealt with complex patients with co-morbid conditions that require an understanding of population-based health and chronic care management. **Our training provides a base for us to do very well in these changing payment environments.**”

— DANIEL T. MCCALL IV, MD, MSPH, HATTIESBURG CLINIC, HATTIESBURG, MISS.



Most physicians fall into the MIPS or APM category and thus receive a score between 0 and 100 to determine bonuses and penalties. Four factors are calculated to establish the score: Patient outcomes; use of electronic health records (EHR); practice improvement activities; and cost containment. Each factor will be weighted differently as the years go by. For example, another regulatory break the CMS gave physicians in 2018 was keeping cost containment at 0%, as it was in 2017. Bonuses and penalties begin at $\pm 4\%$ in 2019 (based on 2017 performance) and top out at $\pm 9\%$ in 2024.

To be sure, MACRA adds an unwelcome extra layer of red tape to a profession already drowning in the stuff. But two years ago, because it replaced the much-hated Sustainable Growth Rate (SGR) law, MACRA was seen as an acceptable compromise.

Part of what made SGR unworkable was that year after year Congress kept putting off the mandated budget cuts, until eventually they grew too big to implement. Ongoing regulatory easements for MACRA risk repeating the same mistake, says Carol Greenlee, MD, FACP, FACE, an endocrinologist employed by the federal government as a MACRA educator: “I understand they want to give doctors more time to prepare, but you can only kick the can so far down the road before you can’t kick it any farther.” MACRA is far from perfect, she admits, but the longer medicine delays reforming the current unsustainable system, the more difficult the task will become.

Value-Based World

Proponents of value-based care are quick to point out that MACRA represents just one railcar in a rapidly departing train. The CMS now claims alternative, value-based models account for 30% of its total payments and hopes to achieve 50% by the end of 2018. Early successes include bundled payment surgery programs, particularly one in orthopedics that produced statistically significant savings and improved outcomes. The government credits such new models with slowing average Medicare cost growth to 1.3% between 2010 and 2016, down from 7.4% the previous decade.

And, as always, where Medicare leads commercial payers soon follow. To take just a few examples: Aetna reportedly plans to transition 75% of its spending to value-based models by 2020. Blue Shield of California boasts of saving \$325 million between 2010 and 2015 via its accountable care organization. Humana has partnered with surgeons to incorporate bundled payments into hip and knee replacement surgeries. Cigna has introduced bundled payments in orthopedics and maternity care, as well as value-based arrangements in primary care, gynecology, gastroenterology, general surgery, and cancer care.

“Whether you participate in MACRA or not, if you provide healthcare, you are going to be doing so in a value-based world,” predicts Daniel T. McCall IV, MD,

MSPH, of Hattiesburg Clinic, Hattiesburg, Miss., a large multi-specialty practice that has been preparing for MACRA for several years. “Even if your fee schedule is not adjusted, your referral physician may be working in an alternative payment model, and you may have commercial contracts that are value-based. It’s going to be difficult to circumvent. To be successful, we’re all going to need to work on making this transition.”

Measuring Success

Defining standards for developing quality measures remains a challenging work in progress. Although no one agency or organization oversees quality measure creation, the AMA’s Physician Consortium for Performance Improvement (PCPI) has emerged as a major force in the process. A key PCPI member since its 2000 inception before stepping down last year, Richard Hellman, MD, FACP, FACE, a private practitioner in Kansas City, Mo., estimates the consortium produced about two-thirds of Medicare’s current quality measures.

Over the years, what started out as an organization dedicated to improving quality of care by providing physicians with a sound methodology for measuring performance was affected by payers that sought to link payment to performance. Although this financial element is not part of PCPI’s agenda, once payment was tied to performance, the societies realized it was extremely important that they each had a measure set they could use. This created a tension between PCPI’s limited resources and its desire to produce quality measures that applied to as many specialties as possible. “It’s a tension that exists to this day,” says Hellman, who was the consortium’s vice chair when he stepped down.

For example, when he thought it was important for endocrinology to have an osteoporosis set, he had to show that this measure set would have a broader range of use and could be used by many specialties. He lobbied to make the case that this measure would be valuable to many specialties, including internal medicine, family practice, rheumatology, orthopedics, and obstetrics. When multiple specialties became involved, this measure became a high priority for PCPI and the measure set was completed.

At the outset, PCPI paid many of the administrative costs associated with developing measures. But soon this became unsustainable, and eventually the AMA instituted fees, which adds another level of challenge. “It became an issue for a society either to ante up or pay for developing measures themselves, and some societies are finding they don’t have the resources to do that,” Hellman explains.

Developing a quality measure can cost as much as \$300,000, according to Greenlee. “Endocrinology is not a wealthy specialty,” she notes. “So to go through a process that costs that much money is challenging for us.”



AT A GLANCE

- ▶ Because endocrinologists bill Medicare at a relatively low rate, many small and solo practices will not be subject to the new MACRA federal law.
- ▶ While this comes as good news to some, others worry exclusion from MACRA now could result in the profession being marginalized by future value-based payment models.
- ▶ Of particular concern is maintaining a voice in developing endocrinology-friendly quality measures, the criteria on which payment is determined.

“ I understand they want to give doctors more time to prepare, but **you can only kick the can so far down the road before you can't kick it any farther.**”

— CAROL GREENLEE, MD, FACP, FACE,
ENDOCRINOLOGIST AND MACRA EDUCATOR,
GRAND JUNCTION, COLO.

OnPoint
from the

ENDOCRINE
SOCIETY

For information on MACRA, the QPP, and more, go to the Society's website at www.endocrine.org/topics/macra



A persistent complaint among endocrinologists is that the profession has an insufficient number of quality measures. Greenlee worries that with so many endocrinologists now excluded from MACRA, the profession will lack the incentive to push for changing the status quo, which could easily be co-opted by future governmental or commercial payment models. This scenario is even more distressing since value-based models could pave the way for unprecedented efficiencies in endocrinopathies such as diabetes, obesity, and metabolic syndrome by finally leveraging tools such as telemedicine, continuous glucose monitoring, insulin pump care, and other unexplored forms of remote monitoring and coordinated care.

Beneficial Trend


It is unclear how much of an impact MACRA will have going forward. One estimate suggests that once the law is fully up and running, penalties and bonuses could create a divergence in physician salaries as high as 46%.

On the other hand, there are those who see the increasingly lax threshold requirements as evidence that the new administration in Washington views the law as an Obama-era holdover, a case of legislative overreach that will quietly

be allowed to wither into a “check-the-boxes” requirement for a small minority of high-earning practitioners.

Not all endocrinologists would welcome this outcome, by the way. Being excluded from MACRA is probably great for a solo private practice, but a physician in a large multi-specialty ACO that just spent the last two years arduously building infrastructure to deliver and report quality care might be less enthusiastic. As a zero-sum program, MACRA's every bonus comes at the expense of a penalty. Fewer participants means fewer penalties but also less bonus money to go around.

What does seem clear is that value-based care in some form will increasingly become part of the healthcare payment equation, a trend from which endocrinology could at least theoretically benefit. Most progress so far has occurred in procedural-based specialties like orthopedics; cognitive areas of care offer a wide range of uncharted opportunities.

“Endocrinology is at the very heart of coordination of care,” notes McCall. “We’ve always dealt with complex patients with co-morbid conditions that require an understanding of population-based health and chronic care management. Our training provides a base for us to do very well in these changing payment environments.” 

CELIA IS A FREELANCE WRITER BASED IN THE PHILADELPHIA AREA. HIS WORK HAS APPEARED IN A BROAD RANGE OF HEALTHCARE AND BUSINESS PUBLICATIONS.

2019 LAUREATE AWARDS

CALL FOR NOMINATIONS

DEADLINE: DECEMBER 15, 2017

Fred Conrad Koch Lifetime
Achievement Award

Gerald D. Aurbach Award for
Translational Research

International Excellence in
Endocrinology Award

Outstanding Clinical
Investigator Award

Outstanding Clinical
Practitioner Award

Outstanding Educator Award

Outstanding Innovation Award

Outstanding Leadership in
Endocrinology Award

Outstanding Mentor Award

Outstanding Public Service Award

Outstanding Scholarly
Physician Award

Richard E. Weitzman Outstanding
Early Career Investigator Award

Roy O. Greep Award
for Outstanding Research

Sidney H. Ingbar Award
for Distinguished Service

NOMINATE TODAY

The Endocrine Society's Laureate Awards are among the highest honors bestowed by the Society to recognize the highest achievements in the endocrinology field including, but not limited to, seminal research, clinical investigation, translational research, mentorship, and non-traditional activities to support developing countries.

- Web resources offer tips for first-time nominators and answers to frequently asked questions
- Need to update a current nomination package? Find out how!

Awards will be presented at ENDO 2019: the 101st Annual Meeting in New Orleans, Louisiana, March 23-26, 2019.

Get started now by visiting endocrine.org/laureate

Questions? Contact us at laureate@endocrine.org

ENDO2018

THE ENDOCRINE SOCIETY'S 100TH ANNUAL MEETING & EXPO

Since ENDO 2018 is heading back to Chicago, *Endocrine News* wanted to entice potential attendees by highlighting some of the many activities and events that will keep you busy once the scientific sessions end.

BREEZING THROUGH *the* Windy City: A Chicago Travel Guide

BY COURTNEY CARSON





Make plans to discover the latest advances in hormone research and clinical endocrinology at **ENDO 2018**. This year's conference, taking place in Chicago March 17–20, is designed to enhance your knowledge and skills in endocrinology with a mix of programs for both the clinician and researcher.

With an extensive program covering a broad array of topics, various networking opportunities, poster sessions, updates on new products and technologies at the ENDOExpo, and more, attendance at **ENDO** is essential for enhancing your professional development and building your reputation. Register now to attend **ENDO 2018** in Chicago and come early or stay late (or both!) to explore all the Windy City has to offer.

Architectural Icons by Land or Water

Whatever your travel preference — from the buzzing Loop downtown to the upscale River North to the artsy Wicker Park — Chicago has something for every traveler. Add to that some of the world's best architecture and museums, a thriving music and dining scene, world-class shopping, and more, and you'll see why the Second City is second to none.

After a large section of the city burnt to the ground in 1871, architects went to work rebuilding Chicago on a grand scale. Renowned for its architecture, Chicago showcases iconic skyscrapers, elegant hotels, and legendary homes of famed architect Frank Lloyd Wright. The Chicago Architecture Foundation offers 85 tours throughout the city but is best known for its River Cruise. Named a Top 10 Tour in the U.S. by TripAdvisor, the 90-minute cruise shows how Chicago grew from a small settlement into one of the world's largest cities in less than 100 years. For those who prefer to take in the sites on their own schedule, the Chicago Electric Boat Company rents boats for up to 12 people for four hours.

The Willis Tower, formerly known as the Sears Tower, is another architectural standout and offers one-of-a-kind views of Chicago. Emblematic of Chicago, this black aluminum and bronze-tinted glass structure stands 110 stories tall. For nearly 25 years after its completion, the Willis Tower held the title of tallest building in the world, and though its record-breaking height has been surpassed several times, its innovative structural design remains noteworthy. On the 103rd floor of this building, The Ledge features spectacular views spanning up to four states and a glass-bottomed balcony extends over the city offering views more than 100 stories below.

More of the country's most cutting-edge buildings and monuments, like Cloud Gate — the giant reflective sculpture known affectionately as “The Bean” — and the neo-Gothic Tribune Tower round out the exemplary architecture in Chicago.

(article continues on p. 34)

ENDO2018

Day by Day

No doubt your days will be packed while you're at Chicago's McCormick Place West, weaving through the crowds as you make your way to various sessions and presentations at ENDO 2018. Here are just a few highlights — among hundreds — that might appeal to you.



Cloud Gate sculpture in Millennium Park by photo.ua / Shutterstock.com

Saturday March 17

Knockout Rounds, 2:00 p.m.

Communicating the importance of endocrine research to funders and the public is an essential skill. Back for its third year, Knockout Rounds provide trainees and early-career professionals with a novel presentation opportunity. With a single slide each, presenters will describe the impact of their research on enhancing health outcomes. Attendees vote for their favorite along with an esteemed panel of judges.

Behavioral Economics to Improve Health and Healthcare, 4:00 p.m.

David A. Asch, MD, MBA, will discuss the relatively new field of behavioral economics, which can supplement traditional approaches to improving a patient's health behaviors. Research shows that patients don't always take actions that result in their best health interests. Attendees will learn how to meet their patients halfway to improve their health.

Sunday March 18

Neuroendocrine Tumors, 9:45 a.m.

Ashley Grossman, MD, FRCP, FMedSci, Royal Free London, London, U.K., discusses neuroendocrine tumors, which are the second most common gastrointestinal malignancy, but they also include a variety of neoplasms such as broncho-pulmonary, thymic, and ovarian carcinoids.

Communications Boot Camp, 2:00 p.m.

Attendees will learn how to become more skilled at communicating research findings in impactful ways to different audiences including the media.

Monday March 19

Diabetes & Technology: Is Big Brother Watching?, 8:00 a.m.

An in-depth discussion on the future of diabetes technology and its seemingly infinite possibilities. Included in this session are separate discussions on "Continuous Glucose Monitoring Systems: Uses and Abuses," "Role of Telemedicine in Diabetes Management," and "Closed Loop Systems: Who is the Best Candidate?"

Hormone Issues in Adolescents, 4:15 p.m.

This symposium addresses pertinent topics in puberty and adolescent endocrinology, such as long-acting, reversible methods of contraception that are available for adult women, including hormone-containing IUDs and hormonal implants; low bone mass in adolescents; and PCOS treatment options.

Tuesday March 20

Metabolic Bone Disease in Children, 8:00 a.m.

Disorders of calcium and bone metabolism in children affect growth and development. This session on pediatric skeletal disease will focus on disorders of both calcium and phosphorus metabolism and will also provide an overview of low bone mass disorders in children.

25 Years of RET Mutations in MEN2: What Have We Learned?, 11:45 a.m.

This symposium features a faculty from around the world who will review information about clinical presentation and genotype-phenotype correlations over the last 25 years and its implication for the management of affected children.

These sessions are just a tiny fraction of the dozens of options available to attendees that cover a vast range of topics in patient treatment outcomes, basic science, and clinical research.



Visit Sue, the most complete T-Rex skeleton ever discovered, among other natural history treasures at the Field Museum.
Photo by Vlad G / Shutterstock.com

Art & Leisure

With more than 40 museums to choose from, Chicago boasts some of the world's best. The most Impressionist works outside the Louvre can be found at the Art Institute of Chicago, while the Museum of Contemporary Art highlights thought-provoking art of today. But art museums are just a fraction of what Chicago has to offer.

Museum Campus boasts 57 acres of some of Chicago's most notable attractions, including Sue, the most complete T-Rex skeleton ever discovered, among other natural history treasures at the Field Museum. Nearby you'll find 32,500 animals at the Shedd Aquarium and countless stars at the Adler Planetarium. The largest science museum in the Western Hemisphere, the Museum of Science and Industry, cannot be missed by science buffs.

During the 19th century, Chicago was a major hub for the shipping industry, and its history as a major port city is still reflected in the city's vibrant waterfront district. Navy Pier is a former navy training facility that now draws crowds with carnival rides, shopping, restaurants, and fireworks. A little more north, 26 miles of uninterrupted lakefront stretch along one of the country's most famed skylines. Lake Michigan is bordered by 15 miles of sandy beaches and an 18-mile stretch of bike trails where cyclists, boaters, sunbathers, and volleyball players abound. Tourists and locals won't

have any trouble finding a ride — the iconic baby-blue Divvy bikes can be rented from one of the hundreds of stations around the city.

Millennium Park, located in the Chicago Loop, is home to the city's number one attraction, The Bean. In addition, Millennium Park features an unparalleled public art and architecture collection, which is the perfect spot to take in the sights during a Segway tour. Additionally, Chicago has hundreds of beautifully maintained parks like Grant Park downtown and Lincoln Park (home to the Lincoln Park Zoo) to the north.

A trip to Chicago would be incomplete without visiting the world famous Magnificent Mile. On the maps it's listed as Michigan Avenue, and it's a 13-block stretch of 50 landmark buildings, 500+ high-end stores, nearly 300 restaurants, and 60 hotels. Walking along the Magnificent Mile fulfills every shopper's dream while providing endless entertainment, including theaters, museums, and even unique-to-Chicago street performances.



The Berghoff Restaurant in the Loop District.
Photo by StockPhotoAstur / Shutterstock.com

The fine dining scene is world renowned at Alinea, the three-Michelin-starred fine dining institution that has been called one of the world's best restaurants. Food obsessives make pilgrimages from around the globe to the 10-year-old Lincoln Park restaurant to experience interactive, expensive, mouth-watering tasting menus.

Band of Bohemia, quite possibly the first Michelin-starred brewpub, lies on the North Side of Chicago. Diners can choose from five-star dishes as part of the tasting menu or stick to a budget with the brunch and bar menus. Creative beer selections are brewed on site in this beautiful Victorian-inspired space.

Other must-visit dining spots in Chicago include The Berghoff, which opened in 1898, Gibson's Bar and Steakhouse, The Girl and The Goat, and the new and improved Chicago Firehouse, which recently reopened after a devastating fire had shuttered it for almost two years.

A Second Helping in the Second City

Travelers are sure to work up an appetite in Chicago with so many activities, but fortunately, there's no shortage of dining options to choose from. From the famous Giordano's Chicago-style pizza, deep-dish stuffed pizza with the marinara on top, to the Superdawg (locals refuse to put ketchup on this hotdog), to Garrett's Popcorn where you wait in line for a mix of cheddar and caramel popcorn, Chicago food traditions are some of the nation's most iconic.



Chicago River dyed green for St. Patrick's Day.
Photo by Todd Maertz / Shutterstock.com

ENDO Eyes Are Smiling

ENDO 2018 comes with an added bonus — Saint Patrick's Day in Chicago! On Saturday, March 17, Chicago will be transformed into an emerald city in celebration of Irish culture and tradition.

Options abound ranging from raucous Irish pub crawls to family-friendly events. No matter how you decide to celebrate, you're in luck.

The highlight of the day is when 45 pounds of vegetable dye are dumped into the Chicago River transforming its waters to bright green. While the coloring lasts only about five hours, the celebrations continue throughout the day with the Loop Parade, one of the largest Saint Patrick's Day parades in the nation. The festivities continue with the Irish American Heritage Center's Saint Patrick's Day Festival, which includes Irish music, food, drinks, and dancing.

Follow the sound of the bagpipes, and enjoy a Saint Patrick's Day like never before during **ENDO 2018!**



Good Sports, Chicago Style

One of the best ways to experience the true spirit of Chicago is to join its fiercely loyal fans at a game.

In March, you can see the Chicago Blackhawks take the ice for some hard-hitting hockey or the Chicago Bulls in some high-flying basketball action.

And if you can't catch a game or your favorite sports are in the offseason, Chicago's other teams still find ways to thrill. Visit historic Soldier Field, home of the Chicago Bears, the winningest franchise in NFL history. Even people who don't know the first thing about football are familiar with "Da Bears," as immortalized in the famous *Saturday Night Live* sketch.

Or if America's pastime is more your thing, visit iconic ivy-clad Wrigley Field to see where the 2016 World Series Champions, the Cubs, hang their hats, or check out Guaranteed Rate Field, home of the White Sox, President Obama's favorite baseball team.

Whether you choose to bring your kids and enjoy a family-friendly getaway, decide on a romantic getaway, or travel solo, Chicago is a top destination and you will quickly agree. And after dinner? Why the theater, of course!

Scene Stealers: Chicago Live!

Outside of the Great White Way in Manhattan, Chicago is one of the country's most esteemed cities for live theater. During **ENDO 2018**, there will be plenty of evening shows that you definitely don't want to miss.

Hamilton: An American Musical

If you can't get tickets to this Tony and Pulitzer-winning sold-out blockbuster in New York or Los Angeles, good tickets are actually available in Chicago in March. **ENDO 2018** may actually be your best chance to see Lin Manuel-Miranda's groundbreaking ode to our "ten dollar founding father" Alexander Hamilton. Don't "throw away your shot;" get tickets today!

CIBC Theater, 18 West Monroe, Chicago: www.ticketmaster.com

Pretty Woman: The Musical

As the trend of converting hit movies into musical theater continues, Chicago's Oriental Theater – Ford Center for the Performing Arts will be presenting the premiere of the musical based on the hit Julia Roberts/Richard Gere movie "Pretty Woman," with music by rocker Bryan Adams. Will it be the next "Lion King" ... or the next "Carrie?" Get your tickets, and find out!

Oriental Theater, 24 W. Randolph St., Chicago: <http://oriental.theaterchicago.net>

The Second City

If you want to get a live look at where some of the world's comedic legends got their starts, then Chicago's Second City is a must-see! Everybody from John Belushi and Bill Murray to Steve Carrell and Stephen Colbert got their comedy chops here. During **ENDO 2018**, there will be two different shows on the boards: "The Best of the Second City" and "Dream Freaks Fall from Space." If laughter is the best medicine, be sure to get your prescription filled at The Second City! **Chicago Main Stage, 1616 N. Wells St., Chicago: www.secondcity.com/tickets/**



Begin planning your stay in Chicago, and make your reservations for **ENDO 2018**. Registration is filling up quickly so don't delay in securing your spot. Join 7,500 of your colleagues for an educational experience that will shape the future of the field, and enjoy a vacation that is sure to become one of your all-time favorites. **EN**



ENDOEXPO2018

SATURDAY, MARCH 17 — MONDAY, MARCH 19

At the ENDOExpo, endocrine research and patient care extends beyond your lab or practice to the exhibit hall—where more than 130 companies are represented—catering to every aspect of endocrinology from bench to bedside. Make plans to visit with exhibitors to learn more about the products and services shaping endocrinology research and patient care.

ENDOEXPO HOURS

SATURDAY, MARCH 17
9:30 AM – 4:00 PM

SUNDAY, MARCH 18
10:30 AM – 4:00 PM

MONDAY, MARCH 19
10:30 AM – 3:30 PM

Coffee breaks provided daily on the exhibit floor.

POSTER PRESENTATIONS

1:00 PM – 3:00 PM

Explore more than 2,200 poster presentations highlighting the latest scientific and medical discoveries. You'll have the opportunity to network and discuss research with authors from around the world.

SCIENCE HUBS

10:00 AM – 3:30 PM

Located on the Expo floor, Science Hubs will host a wide variety of topical sessions in an engaging format including presentations by the top scoring posters, Q&A sessions with Clinical Practice Guideline authors, and more.



When the Rally for Medical Research took place in Washington, D.C., in September, among the voices were several Endocrine Society members. We spoke to Lindsey Treviño, PhD; T. Rajendra Kumar, PhD; Heather Patisaul, PhD; and Benson Akingbemi, PhD, about why they feel so strongly about becoming “endocrine advocates.”

Taking **action** *for* **Endocrinology**



BY JESSICA HARRIS

In September, the Endocrine Society was a sponsor and participated in the Fifth Annual Rally for Medical Research in Washington, D.C. The Rally brought together over 400 researchers and patients from across the country to advocate for one important issue: Sustained, predictable funding increases for the National Institutes of Health (NIH). Participants took part in a Hill Day, where they met with their senators and representatives to share their stories and experiences and to highlight the importance of biomedical research in the U.S.

The Rally for Medical Research represents one way the Endocrine Society is active in advocating for endocrine issues that affect scientists, physicians, and patients. In addition to the Rally, the Society

organizes Hill Days throughout the year and regularly engages policymakers through meetings, letters, phone calls, and social media. The Society's most important and impactful contacts with Congress come from our members. Whether it's coming all the way to Washington, D.C., for a congressional meeting or sending a letter from the comfort of your own home, the Endocrine Society's vibrant and growing advocacy program provides unique opportunities for members to make positive changes in their field.

Endocrine News spoke to four Endocrine Society members who participated in this year's Rally for Medical Research to get their perspectives on what it means to be an endocrine advocate.



Lindsey Treviño, PhD,
Baylor College of Medicine

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The easiest way to get involved is to answer the emails calling for involvement in Endocrine Society advocacy campaigns. The online system is very convenient, and it only takes a few minutes to personalize/sign the prepared statements to your representatives.

”



T. Rajendra Kumar, PhD,
University of Colorado

“

I think that every member should get away from their routine and volunteer to represent the Endocrine Society's mission and visit Capitol Hill. It is an individual scientist's conviction and moral responsibility.

”



Heather Patisaul, PhD,
NC State University

“

When I first got started in science, 'advocacy' was clearly a dirty word and there was a strong, negative perception that advocacy would taint the science or scientific integrity in general. With everything happening in Washington, and broad alarm about the erosion of public trust in science, that tide has clearly turned and more people are open to embracing advocacy efforts.

”



Benson Akingbemi, PhD,
Auburn University

“

Every advancement in the medical sciences, including the prevention, diagnosis, and treatment of diseases, has their beginning in biomedical research. NIH funding is also critical to training and maintaining the pipeline of future scientists.

”

EN: Why do you think advocacy is important?

Treviño: Only those who treat patients with endocrine conditions and those who perform endocrine-related research have their fingers on the pulse of issues that are important for endocrine health policy. As such, we have a duty to engage policymakers as endocrine advocates.

Kumar: Advocacy allows you to get a broader perspective of what type of support is needed to propel biomedical research. It also lets you think how much your own work, if funded appropriately, can make a difference in healthcare.

Patisaul: As scientists and educators, we are obligated to educate and inform the public, including our legislative representatives.

Science can't advocate for itself — it takes dedicated people to explain and champion its value. Unfortunately, the value of science is often invisible, so it can be easy to take for granted. It's up to us to remind people about the importance of science not only for discovery but also for making informed decisions in policy making and our everyday lives.

Akingbemi: It seemed useful to be able to provide information to congressmen and their staff on types of research that are undertaken by scientists and clinicians who receive NIH funding. Every advancement in the medical sciences, including the prevention, diagnosis, and treatment of diseases, has their beginning in biomedical research. NIH funding is also critical to training and maintaining the pipeline of future scientists.



Why did you get involved in advocacy with the Endocrine Society?

Treviño: I got the opportunity to become involved with advocacy through my participation in the Future Leaders Advancing Research in Endocrinology (FLARE) program. As part of that program, I was an intern on the Research Affairs Core Committee where I learned about the Endocrine Society's advocacy efforts. Throughout my career, I have benefited greatly from NIH-funded opportunities to enhance diversity in biomedical science, including the FLARE program. Funding to sustain these resources in particular, and endocrine research in general, has become a major issue that necessitates advocacy, and I became passionate about becoming involved.

Kumar: When I served on the Endocrine Society's Research Advisory Core Committee, I met Endocrine Society staff [chief policy officer] Mila Becker and [associate director, science policy] Joe Laakso, who were passionate about advocacy. I wanted to voice my opinion because I realized that describing my own research work in the context of major issues in endocrine research would make a huge impact. I am thankful to both Mila and Joe because they gave me this opportunity twice. I represented Kansas earlier, and this year, I represented the state of Colorado.

Patisaul: My research focuses on chemicals that disrupt the endocrine system and, consequently, damage the developing brain. Through the Endocrine Society, I have been able to explain what these compounds are to legislators and advocate for policy improvements that help protect public health. The Endocrine Society does an outstanding job of communicating with a wide range of stakeholders from policy makers to physicians and

patients. People are hungry for a trusted source of scientific information, and the Endocrine Society has established itself as a valued and influential contributor to that conversation.

Akingbemi: The first challenges that I was made aware of by my postdoctoral mentor were related to sourcing funds to maintain trainees and for laboratory supplies. With the decline in NIH funding over the last 10 years or so, the situation has only worsened. The scope of the negative effects of declining NIH funds can only be imagined when you consider that the NIH is the largest source of funding for biomedical research in the U.S.

What surprised you most about getting involved?

Treviño: I was surprised the most about how much each individual member can contribute to advocacy efforts, regardless of career stage. I am a relatively junior scientist, but I am still able to contribute by providing my perspective on issues facing early career endocrine researchers and endocrinologists.

Kumar: I was surprised to see more than 200 of my fellow scientists coming together and representing a common cause [at the Rally for Medical Research]. I thought that there would be only 10 to 12 members!

Patisaul: How eager my colleagues were to join in and how appreciated advocacy activities are to my scientific colleagues. When I first got started in science, "advocacy" was clearly a dirty word and there was a strong, negative perception that advocacy would taint the science or scientific integrity in general. With everything happening in Washington, and broad alarm about the erosion of public trust in science, that tide has clearly turned and more people are open to embracing advocacy efforts.

Akingbemi: I was surprised by the number and spectrum of visitors who were visiting with congressmen and legislative staff virtually around the clock. The experience reinforced to me the critical role that advocacy efforts play in not just maintaining current levels, but increasing NIH funding.

What is your most memorable experience on Capitol Hill?

Treviño: This year [at the Rally for Medical Research] I visited offices on Capitol Hill with patient advocates from various organizations. Their stories were so powerful and reminded me that the outcomes of advocacy efforts may mean life or death for some people. This is a sobering reality that emphasizes the importance of advocacy.

Kumar: Walking through underground tunnels from one building to another, and actually meeting a member of Congress from my state [Colorado] and explaining to him and his staff the need for increasing biomedical research funding!

Patisaul: My state is famous for the “bathroom bill,” which barred transgender people from using the bathroom of their choice. On one of my trips to Capitol Hill, a North Carolina staffer quietly pulled me aside and asked me what “transgender” actually means. In that moment, I was given a rare opportunity to educate someone about a culturally charged topic. I don’t think I would have been asked if I wasn’t representing the Endocrine Society, which is regarded as a trusted source of biomedical information.

Akingbemi: I enjoyed the opportunity to explain my research in very simple terms to legislative staff. They were knowledgeable in several issues that they learned from their personal experiences and/or previous interactions with members of the scientific community.

How can other members get involved?


Treviño: The easiest way to get involved is to answer the emails calling for involvement in Endocrine Society advocacy campaigns. The online system is very convenient, and it only takes a few minutes to personalize/sign the prepared statements to your representatives. As a Society, we have an opportunity to have a major impact on endocrine health policy, and the more people that participate in these campaigns, the better!



Kumar: I think that every member should get away from their routine and volunteer to represent the Endocrine Society’s mission and visit Capitol Hill. It is an individual scientist’s conviction and moral responsibility. Members may directly contact the chief policy officer (Mila Becker at mbecker@endocrine.org) and express their intentions.

Patisaul: There are a myriad of ways. The Society routinely sends out emails asking people to sign on to letters or write their representatives. This is easily done through the Endocrine Society website by clicking on the links in the emails. Those letters make a difference. Advocacy also means talking to patients and other people to point them to reliable sources of scientific information.

Coming all the way to Washington, D.C., and talking with elected officials is only one way Endocrine Society members can get involved.

For more information, go to www.endocrine.org/advocacy to find out how you can be an “endocrine advocate” too! 

HARRIS IS THE GOVERNMENT & PUBLIC AFFAIRS SPECIALIST AT THE ENDOCRINE SOCIETY. SHE WAS PREVIOUSLY A PEER-REVIEW SPECIALIST IN THE SOCIETY’S PUBLICATIONS DEPARTMENT.

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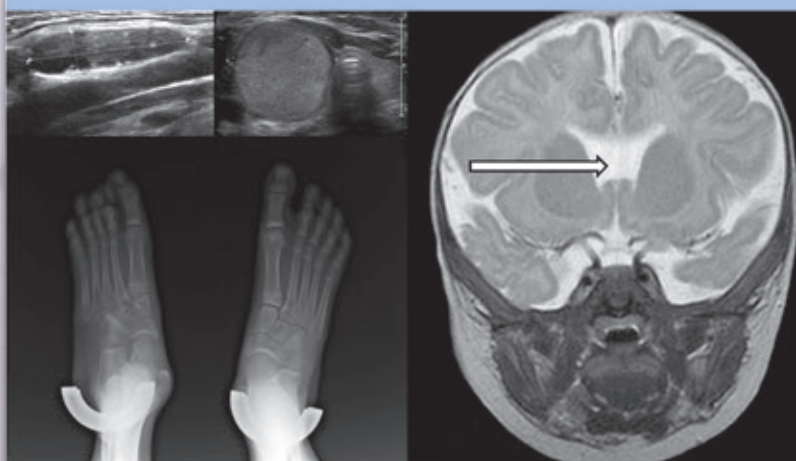
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BY DEREK BAGLEY

2017: A Progress REPORT



As endocrine science continues to be at the forefront of medical research, a wide array of treatment options, therapies, and products has been discovered. For the second year in a row, *Endocrine News* has compiled 2017's newest items to treat a variety of endocrine disorders.



As the Endocrine Society wrapped up its first century in 2016, the first year of the Society's next century was not without its share of medical breakthroughs in both research and science (See Eureka! on page 18), but also in new products, breakthroughs, and teamups that made waves in 2017.

Potential Breakthrough for Thyroid Cancer Patients

A next-generation test is showing promising results in changing thyroid cancer diagnoses, allowing more patients with indeterminate thyroid nodules to avoid unnecessary surgeries, as this new version can more clearly distinguish between benign and malignant thyroid nodules. This test, developed by Veracyte, is an upgrade of the company's Afirma Gene Expression Classifier. Veracyte calls this new development the Afirma Genomic Sequencing Classifier (GSC), as it combines Ribonucleic acid (RNA) sequencing and machine learning to leverage more enriched, previously undetectable genomic information.

"We are employing the same statistical methods that are being used in other fields such as social media and self-driving cars, but applying them to thyroid cancer diagnosis," says Endocrine Society member Giulia C. Kennedy, PhD, Veracyte's chief scientific officer. "Our approach uses RNA sequencing to interrogate the entire genome, and takes advantage of newer

methods in machine learning to combine valuable features that provide a higher-resolution genomic picture of thyroid nodules. This enables the Afirma GSC to recognize nuances that distinguish benign from malignant nodules and which were previously not detectable."

Increasing the number of benign nodules identified is "important because increasing the number of benign nodules directly translates to patients avoiding unnecessary surgeries," Kennedy says. "The more you call benign, the more potential unnecessary surgeries you save. Before Afirma, [unnecessary surgeries were] a huge problem. The Afirma Gene Expression Classifier, or GEC, was the very first genomic test that actually helped solve much of that problem, and now our data suggest that the Afirma GSC — the next-generation version — is going to save even more surgeries. Before Afirma, people with indeterminate nodules from fine-needle aspiration cytopathology had about a 25% risk of having cancer. Therefore, doctors didn't feel comfortable leaving those nodules in the patient. Even though it's only a 25% risk, they would go on and have surgery, and of

course, 75% of those patients would have benign nodules. So, when Afirma came on the market, our test allowed 52% of those patients to be spared an unnecessary surgery. And now this [enhanced] test has improved upon that by using some very sophisticated technology, both on the assay side and the algorithm side to raise that to 68%, which means that even more patients can safely avoid a surgery. The important word is 'safely.' You need a very high sensitivity and a high negative predictive value, or NPV, in order to make sure that those patients you're calling benign are actually benign. The Afirma GSC has a fantastic NPV and high sensitivity like the first test."

Positive Results for Short Course Therapy to Reduce Fractures

Radius Health this year announced positive results from the ACTIVEExtend Trial, during which patients who had completed 18 months of abaloparatide or placebo in the ACTIVE Phase 3 trial were transitioned to receive 24 additional months of open-label alendronate. Patients who received this sequential therapy demonstrated statistically significant fracture risk reductions through 3.5 years.

"We showed over this entire 43-month trial, in the group that received abaloparatide followed by alendronate an 84% reduction in new vertebral fractures, a 39% reduction in non-vertebral fractures, and major osteoporotic fractures were reduced by 50% compared to the group that got placebo followed by alendronate," says Endocrine Society member Felicia Cosman, MD, osteoporosis specialist and medical director of the Clinical Research Center at the Helen Hayes Hospital, senior clinical director of the National Osteoporosis Foundation, professor of medicine at Columbia University, who is a consultant to Radius, and lead investigator of the trial. "What's really exciting about these findings is that they show just how dramatic a benefit you can get with a short course — one and a half years — of a potent, bone-building therapy. If we could identify patients who are at high risk of fractures, based on their fracture history or their bone density, we could make a very big difference in their long-term fracture risk by starting with abaloparatide and then antiresorptive therapy."

Blood Glucose Monitoring System Improves Glycemic Control

Two journal articles published this past year showed that the OneTouch Verio Flex blood glucose monitoring system, especially when used with OneTouch's Reveal® mobile app, was associated with significant improvements in glycemic control. In a study published in the *Journal of Diabetes Science and*

Technology, leading experts in self-monitoring of blood glucose tested the OneTouch Verio Flex blood glucose monitoring system and found that the "new system showed a high level of measurement accuracy." All three lots tested met and exceeded the minimum requirements of the International Organization for Standardization 15197:2013 standard for system accuracy. This study follows the publication of another study in the April issue of this same journal that detailed the OneTouch Verio platform's seven years of proven accuracy across more than 70,000 clinical data points.

Another study published in the August issue of *JMIR Diabetes* randomly assigned 128 adults with sub-optimally controlled type 1 and type 2 diabetes based on A1c into two groups: One group switched from their current blood glucose monitoring meter to the OneTouch Verio Flex blood glucose monitoring system; the other group switched from their current meter to the OneTouch Verio Flex blood glucose monitoring system combined with the OneTouch Reveal mobile app. (The OneTouch Verio Flex blood glucose monitoring system has built-in Bluetooth® Smart Technology that wirelessly connects and transmits results to the OneTouch Reveal mobile app.) Those who were in the OneTouch Reveal mobile app group also received texts from a healthcare provider every two weeks, based on a review of OneTouch Reveal data.

Results suggested improved glycemic control at 12 and 24 weeks in both the meter-only and meter-plus-mobile-app groups compared to baseline, further finding that:

- 88% of the study subjects said the Color Range Indicator on the OneTouch Verio Flex blood glucose monitoring system together with the OneTouch Reveal mobile app "could help me stay on track between visits to my healthcare provider;"
- Improvements using the app were greatest in the participants with type 2 diabetes and those who received the highest number of healthcare provider text messages.

New Hope for Pancreatic Cancer Patients

Following compelling early pancreatic cancer data using MRIdian, an MRI-guided radiation therapy system, ViewRay has launched a multi-center prospective clinical trial for locally advanced unresectable pancreatic cancer. The novel abilities provided by live MR guidance combined with daily online treatment adaptation have potentially enabled a new approach in pancreatic cancer therapy. Through this trial the group looks to explore new opportunities to improve survival and quality of life for this deadly disease.

“Leading experts in self-monitoring of blood glucose (BG) tested the OneTouch Verio Flex blood glucose monitoring system and found that the ‘new system showed a high level of measurement accuracy.’”



OneTouch's Verio Flex GMS and Reveal® mobile app

One particular impetus for the trial was compelling early results presented as part of the scientific sessions at the American Society for Radiation Oncology (ASTRO) annual meeting. The poster, titled “Higher Maximum Biologic Effective Dose Utilizing Adaptive MRI Guided Radiation Therapy Improves Survival of Inoperable Pancreatic Cancer Patients,” provided a retrospective review of 42 locally advanced pancreatic cancer patients treated at four institutions (Washington University, UCLA, University of Wisconsin, and VUmc). The study found that stereotactic dosing regimens guided by MRI and daily online adaptation had led to significantly prolonged patient survival and resulted in favorably low toxicity.

“Based on compelling early evidence on the use of MRIdian to treat locally advanced pancreatic cancer, we are eager to further explore the system’s capabilities and associated toxicity, local control and patient outcomes,” says Parag Parikh, MD, associate professor of Radiation Oncology at Washington University and lead investigator of the trial. “We believe MRIdian’s excellent real-time visualization of organs at risk within the abdomen and its daily treatment adaptation will allow us to deliver higher, more effective doses to the target while minimizing impact on the normal surrounding tissue. The findings of this study could truly change the standard of care for many pancreatic cancer patients.”

New Technology May Prevent or Reduce Pediatric Type 1 Diabetes

IBM and JDRF announced a new collaboration to develop and apply machine learning methods to analyze years of global

type 1 diabetes research data and identify factors leading to the onset of type 1 diabetes in children. IBM scientists will look across at least three different data sets and apply machine learning algorithms to help find patterns and factors at play, with the goal of identifying ways that could delay or prevent type 1 diabetes in children. In order to match variables and data formats and compare the differing data sets, the scientists plan to leverage previously collected data from global research projects. Data analysis will explore the inclusion of genetic, familial, autoantibody, and other variables to create a foundational set of features that is common to all data sets. The models that will be produced will quantify the risk for type 1 diabetes from the combined data set using this foundational set of features. As a result, JDRF will be in a better position to identify top predictive risk factors for type 1 diabetes, cluster patients based on top risk factors, and explore a number of data-driven models for predicting onset.

“At JDRF, we are absolutely committed to seeing a world without type 1 diabetes, and with this partnership, we’re adding some of the most advanced computing power in the world to our mission,” says Derek Rapp, JDRF president and CEO. “JDRF supports researchers all over the world, but never before have we been able to analyze their data comprehensively, in a way that can tell us why some children who are at risk get type 1 diabetes and others do not. IBM’s analysis of the existing data could open the door to understanding the risk factors of type 1 diabetes in a whole new way, and to one day finding a way to prevent type 1 diabetes altogether.”

“

ReceptivaDx is a breakthrough test and provides a unique, enhanced screening opportunity in women with unexplained infertility and unidentified causes of implantation failure.”



New Test Could Improve IVF Outcomes

The ReceptivaDx test seeks to help in vitro fertilization (IVF) centers and other healthcare providers identify barriers to implantation, including one of the key underlying causes of unexplained infertility — endometriosis. Current diagnostic techniques for endometriosis require the use of laparoscopy, an invasive and expensive surgical procedure. With the introduction of the ReceptivaDx assay, endometriosis can be identified quickly and cost effectively using an endometrial biopsy sample collected during a routine office visit. Early detection of endometriosis can help guide treatment for IVF centers, ensuring higher success rates and alleviating the financial and emotional burden of a family attempting to conceive.

“ReceptivaDx is a breakthrough test and provides a unique, enhanced screening opportunity in women with unexplained infertility and unidentified causes of implantation failure,” says Endocrine Society member Bruce Lessey, MD, PhD, MS, a pioneer in reproductive medicine and related research, and a scientific advisor for CiceroDx.

Promising Results for Diabetic Macular Edema Patients

SciFluor Life Sciences, Inc., announced positive top-line data from its Phase 1/2 study of SF0166, a topical ophthalmic solution for diabetic macular edema (DME) patients and hopes to advance the product into a Phase 2 trial.

The Phase 1/2 study assessed the safety and preliminary efficacy of SF0166 in 40 patients with DME who were randomized to one of two dose strengths (2.5% and 5.0% solutions) self-administered

by patients as an eye drop twice-a-day for 28 days, with a 28-day follow-up period. Results from a trial of SF0166 in patients with age-related macular degeneration (AMD) remain pending.

The primary outcome measure of safety was achieved with no drug-related serious adverse events observed in the study throughout the 28-day course of treatment as well as during the 28-day follow-up period. Ocular adverse events were recorded in the treated eyes of six patients. All events were mild in severity, with one considered possibly drug-related.

SF0166 demonstrated biological activity in both patient groups (2.5% and 5.0% solutions), with 53% of the evaluable patients demonstrating a reduction in retinal thickness (RT), and improvements in visual acuity were also recorded. Durability of RT response to the 28-day course of therapy was observed during the month after discontinuing treatment.

There were no significant decreases in visual acuity in study eyes during treatment or follow-up and no patient required rescue treatment with an anti-VEGF injection during the treatment phase. Regular anti-VEGF injections to the eye represent current standard of care for DME (and AMD).

Based on these outcomes, SciFluor has decided to proceed to Phase 2 trials for SF0166.

And new advancements continue to be made, even as this article goes to press, meaning ever-improving therapies so patients can lead healthier lives. Wonder what's in store for 2018. ^{EN}

EDITOR'S NOTE: INCLUSION IN THIS ARTICLE DOES NOT DENOTE A RECOMMENDATION OR AN ENDORSEMENT BY *ENDOCRINE NEWS* OR THE ENDOCRINE SOCIETY. THIS IS SIMPLY TO SERVE AS AN OVERVIEW OF SOME OF THE BREAKTHROUGHS IN TREATMENT METHODS, PRODUCTS, AND THERAPIES THROUGHOUT 2017.

Balancing *the* Scales



BY GLENDA FAUNTLEROY

While time spent at the bench pursuing research is vital, it can become overwhelming at times and lead to an abundance of stress. Quality time outside the lab is important to maintain your own well-being.

Work-Life Balance: A phrase referring to the importance of balance between work-based and pleasure-based activities in a person's life.

For some scientists, finding a manageable equilibrium between work in the lab and life at home is a constant challenge. But the problem is not germane to researchers, as U.S. workers are all struggling to balance the scales.

In a 2015 Ernst and Young global survey “Work-life Challenges Across Generations,” one-third of full-time workers said that managing work-life has become more difficult, with younger generations and parents hit hardest. Seventy-eight percent of millennials (ages 18–33) were almost twice as likely to have a spouse/partner working at least full-time than Baby Boomers (47%). Consequently, “Finding time for me” was the most prevalent challenge faced by millennial parents who are managers in the U.S. (76%) followed by “getting enough sleep” and “managing personal and professional life” (67%).

Keep in mind that wanting a balance with work and home life does not mean you don't love your work. It is common for scientists to be excited about their time in the lab, so it may not feel like drudgery or something you need a break from. However, the work-until-you-drop mantra that often goes along with research life can lead to burn-out and other dire consequences: fatigue, stress-induced poor health, lost time with loved ones, and increased expectations (the more you produce, the more may be expected/assigned).

Many workers say the reasons for spending a lot of hours at work boil down to the quest of earning a promotion. For millennials, ambition and flexibility go hand-in-hand, however. In the Ernst and Young survey, 75% wanted the flexible work hours and still be on track for promotion. Parents of young children may also want to adjust the normal “8 to 5” work day. Can they come in at 10 a.m. after dropping off the kids and stay until 6 or 6:30? Can lab workers work from home on days they need to hunker down and write?

“ Keep in mind that wanting a balance with work and home life does not mean you don't love your work. It is common for scientists to be excited about their time in the lab, so it may not feel like drudgery or something you need a break from. However, the work-until-you-drop mantra that often goes along with research life can lead to burn-out and other dire consequences.”

The Manager's Role


The work culture of any lab or office most often trickles down from the top. Employees get a sense of the importance of lifestyle from their managers. If you are the lab's team leader, think about the messages you send. How good are you at setting an example?

- ▶ Do you maintain your physical fitness?
- ▶ Take vacations and have outside activities?
- ▶ What have you done lately to encourage life outside the lab?
- ▶ Does your lab have official policies to help graduate or undergraduate students balance lab work and personal time?
- ▶ How open are you to requests for time off or involvement in outside activities?



Practical Matters

Learning to find the happy medium between the lab and your personal life requires making a few adjustments:

- ▶ **Make it a point to schedule time with family and friends.** When you plan your week, be conscientious about including an activity of quality time downtime into your schedule. And put it on the calendar.
- ▶ **Reduce email access.** Start a habit of checking emails no more than three times a day — late morning, early afternoon, and late in the day. If you access email first thing in the morning, you tend to focus on and respond to other people's issues rather than being proactive about your own needs.
- ▶ **Say no.** Whether it's a co-worker asking you to manage an extra project or your child's teacher asking you to organize a class party, remember that it's okay to respectfully say no. The "feeling of obligation" usually leads to unruly to-do lists
- ▶ **Re-evaluate your chores and errands.** Think of all the errands you run weekly and whether any can be outsourced. Order toiletries and groceries online for delivery. Hire someone to do deep housecleaning twice a month (that leaves just "tidying" for you).
- ▶ **Relax, just a little.** Making just a small adjustment to your work schedule to squeeze in some "me" time can go a long way. Start out by leaving the office earlier just one night per week to do something just for yourself. Anything from pleasure reading, listening to music, or catching up on what's saved in the DVR. Even scheduling one hour for you is a good start. 

GLENDA FAUNTLEROY IS A CARMEL, IND.-BASED FREELANCE WRITER AND A REGULAR CONTRIBUTOR TO *ENDOCRINE NEWS*.

2017 Top Products of

COMPILED AND WRITTEN BY COURTNEY CARSON

Dexcom G5

The Dexcom G5 Continuous Glucose Monitoring System provides real-time glucose readings for patients with type 1 or type 2 diabetes every five minutes no matter where they are. With Dexcom G5 Mobile, dynamic glucose data can be accessed and shared safely and conveniently to a patient's smart device through cloud-based reporting system CLARITY. Featuring an added safety option, the G5 sends immediate alerts to a smart device or receiver when the patient's glucose is trending too high or too low.

www.dexcom.com



Insulia

Insulia, available via mobile app or web portal, is a prescription-only medical device that recommends basal insulin doses for adults with type 2 diabetes based on a treatment plan created by healthcare providers.

www.insulia.com

Fiasp

Fiasp, a fast-acting mealtime insulin for adults with type 1 or type 2 diabetes, can be dosed at the beginning of a meal or within 20 minutes after starting a meal. The pre-filled pen features a new formulation of NovoLog, in which the addition of niacinamide (vitamin B3) helps to increase the speed of the initial insulin absorption, resulting in an onset of appearance in the blood in approximately two and a half minutes.

www.fiasppro.com



FreeStyle Libre Pro

Abbott's FreeStyle Libre Pro is a professional Continuous Glucose Monitoring System that enables healthcare providers to place a small sensor on the upper back of the arm of a person with diabetes, and following two weeks of wear, use a reader device in the office to download 14 days of glucose data. While wearing the sensor at home, users do not need to enter any fingerstick data or carry around a receiver — the Libre Pro collects all glucose data automatically, measured once every 15 minutes.

www.abbott.com



BlueStar Diabetes App

The BlueStar diabetes management app uses data entered by the patient, such as blood glucose levels, to deliver helpful guidance, messages, educational tips, and motivation for those with type 2 diabetes. BlueStar also allows users to track medications, food, activity, and sleep all in one place.

www.bluestardiabetes.com

MiniMed 630G

The MiniMed 630G insulin pump is the first hybrid closed loop system. Featuring the Enlite sensor, this system includes SmartGuard, an exclusive technology that takes action to reduce the risk of diabetes complications by automatically stopping the delivery of insulin when the sensor glucose hits a preset low level.

www.medtronic.com



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Society Members Meet with NICHD Leadership for Strategic Planning Session



Among the participants at the strategic planning session at NICHD were (L to R): Stuart Moss, PhD, health scientist administrator, Fertility and Infertility Branch; Richard S. Legro, MD, professor, Penn State University College of Medicine, secretary-treasurer, Endocrine Society; Diana Bianchi, MD, director, NICHD; Alex Joel Polotsky, MD, MS, associate professor, Department of Obstetrics and Gynecology, University of Colorado Denver, member, Endocrine Society Research Affairs Core Committee; Lisa Halvorsen, MD, branch chief, Gynecologic Health and Disease Branch; Karen Winer, MD, medical officer, Pediatric Growth and Nutrition Branch; and Daniel Johnston, PhD, branch chief, Contraception Research Branch (CRB).

On November 13, Endocrine Society members Richard Legro, MD, and Alex Polotsky, MD, met with leadership from the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD), including the director of NICHD, Diana Bianchi, MD, to discuss strategic planning, research training, and collaboration opportunities with the Endocrine Society.

During the meeting, Bianchi described how NICHD will gather input to inform the development of the next iteration of the NICHD Strategic Plan. As part of the strategic planning process, she hopes to discover ways to balance the portfolio of basic, translational, and clinical research supported by the institute, and she wants to use the plan to better explain the scientific focus of NICHD. The strategic planning process will begin in the coming months, and the Endocrine Society will look for opportunities, such as Requests for Information, to provide input on the plan.

Bianchi, Legro, and Polotsky also discussed challenges in supporting the biomedical research pipeline for trainees and how NICHD will build upon its strong support for early stage investigators (ESI) and early established investigators (EEI) through the Next Generation Researchers Initiative (NGRI). Bianchi discussed plans to shift training funds to better support and retain highly motivated

scientists. They also discussed opportunities to address the unique challenges faced by clinician-scientists, such as securing protected time for research activities.

During the meeting, participants also thought of ideas for how the Endocrine Society could work with NICHD to advance endocrine research and keep members informed of NICHD resources and funding opportunities. The NICHD team expressed interest in finding ways to draw more endocrine scientists, especially basic researchers, into the field of male contraception research. Participants were also interested in exploring ways that the Endocrine Society might facilitate recruitment for clinical trials funded by NICHD. Everyone was enthusiastic about creating more opportunities for NICHD staff and endocrine scientists to interact at the Society's Annual Meeting, ENDO.

We will continue to collaborate with NICHD and keep members informed of NICHD activities of interest to endocrinologists and endocrine scientists. For more information on NICHD priorities and news from the Institute, and to subscribe to the NICHD Developments newsletter for all the latest funding opportunities and announcements, please see the NICHD website at nichd.nih.gov.



PHOTO CREDIT: NICOLE S GLASS / SHUTTERSTOCK.COM

Trump Signs Law Creating Diabetes Commission

On November 2, President Trump signed into law legislation authored by Senators Jeanne Shaheen (D-NH) and Susan Collins (R-ME) that establishes a national commission of healthcare experts on diabetes care and prevention. The Endocrine Society along with AACE and other diabetes-related organizations worked to gain support for the measure.

The new law will set up a 23-member commission, known as the National Clinical Care Commission, from the public and private sector, tasked to optimize care for the nearly 30 million Americans who suffer from diabetes. The commission will encourage increased interaction between the agencies such as Medicare, the Food and Drug Administration, the Centers for Disease Control and Prevention, and private-sector clinicians and will identify gaps where new approaches are needed to improve diabetes care and management.

Now that the legislation has been signed into law, the next step will be to populate the commission with member experts from the Endocrine Society and other organizations. Since the Commission membership will be determined by the Secretary of Health and Human Services, we will advocate for endocrinologists to have a prominent role.



Pictured at the NICHD Awards Ceremony are (R to L): Endocrine Society chief policy officer Mila Becker, associate director for science policy Joe Laakso, CEO Barbara Byrd Keenan, NICHD director Diana Bianci, Endocrine Society president Lynnette Nieman, NICHD deputy director Catherine Spong, and members of NICHD PregSource staff celebrate Collaboration Award.

Endocrine Society Awarded NICHD Collaboration Award for PregSources

On November 2, Diana Bianchi, MD, director of the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD) awarded the Endocrine Society a Collaboration Award for its participation as a partner in PregSource, a crowdsourcing research project that aims to improve knowledge of pregnancy by collecting information directly from pregnant women. Lynnette Nieman (president), Barbara Byrd Keenan (CEO), Mila Becker (chief policy officer), and Joseph Laakso (associate director, science policy) accepted the award.

PregSource allows women to track their pregnancies and to share and compare their experiences with other users and healthcare providers. The goal of the project is to improve maternal care by providing a more complete picture of the pregnancy experience. The Endocrine Society's role will be to disseminate PregSource messaging to members, healthcare providers, and patient networks (via the Hormone Health Network).

The award reflects the Society's efforts to make women's health a priority in research, patient care, and health policy. PregSource is expected to launch in January 2018. To learn more about the project, visit <https://pregsource.nih.gov>.

Healthcare Topics Figure Prominently in Year-End Legislation

As this issue of *Endocrine News* goes to press, the end of year “To Do” list for the U.S. Congress keeps growing and getting more complicated. To review, before the end of the year Congress needs to enact:

- A budget deal to raise the budget caps
- Final FY 2018 spending legislation (or another short-term spending bill to buy more time and prevent a government shut-down)
- Disaster funding
- Reauthorization of the Children’s Health Insurance Program along with reauthorization of the Special Diabetes Program, Community Health Centers, and National Health Service Corps
- Tax reform (a political must do)
- Stabilize health insurance markets
- Fix the Deferred Action for Childhood Arrivals (DACA) Act

Enacting any one of these items would be a big deal. Taken together, in the short time remaining before the end of the year, policy analysts predict it will take a Christmas miracle to achieve. For endocrinology, the list is notable because healthcare topics figure prominently in the year-end legislative measures, the fate of some specific federal programs like the Special Diabetes Program and funding for the National Institutes of Health (NIH) is unclear, and other measures could significantly impact endocrinologists, researchers, and patients like the tax reform bill’s removal of the individual mandate and waiver for graduate student tuition.

Below is a summary of the legislation the Society is working on and ways for you to get involved and take action:

- **NIH Funding** — Although Congress is supposed to finalize funding for the new fiscal year by October 1, it



was not able to do so and instead put into place a short-term spending bill to keep the government running at current funding levels through December 8. The main reason a deal was not possible was because to provide funding increases, Congress will need to raise the budget caps currently in law. While some lawmakers remain optimistic that another short-term spending bill running into next year will not be necessary, top appropriators and senior congressional staff report that congressional leaders have little hope of striking a deal on spending caps before December, setting up another stopgap funding measure after the current one expires December 8. Consequently, funding for the NIH, a top priority for the Society, remains in jeopardy.

Take Action: All U.S. Society members interested in research are encouraged to join the Society’s online advocacy campaign urging Congress to raise the budget caps and provide an increase in NIH funding, even if you have taken action before. Taking action is quick and easy. Simply visit www.endocrine.org/advocacy, select the Support NIH campaign and enter EITHER your home



address OR your email and member ID. A sample letter is provided, which you can personalize if you choose to, and our software will direct the letter to your congressional delegation.

- **Special Diabetes Program** — Another issue of interest for the Endocrine Society is continuing funding for the Special Diabetes Program (SDP). The SDP is actually comprised of two programs: The Special Type 1 Program that funds NIH research and the Special Diabetes Program for Indians (SDPI) that provides diabetes education and prevention programs for American Indians and Alaska Natives. Congress let funding for the Special Type 1 Program expire October 1 and funding for the SDPI will expire on December 31 if Congress fails to act. The Senate is currently considering the extension of a number of healthcare programs as part of the Children's Health Insurance Program (CHIP) reauthorization.

Take Action: We need all U.S. members who treat people with diabetes or research on type 1 diabetes to contact the Senate NOW to ensure both SDP programs are included in any healthcare extenders bill. Visit www.endocrine.org/advocacy, select the SDP campaign, and enter EITHER your home address OR your email and member ID to contact Congress about this important program.

- **Tax Reform** — The congressional tax reform effort is the immediate issue on the agenda in Washington with President Trump pushing hard to get a deal passed by Christmas. The tax overhaul contains many provisions, but healthcare topics figure prominently in the legislation and the Society is working on several items that directly affect endocrine researchers, clinicians, and patients:

- The Senate version would remove the health insurance mandate penalty, a cornerstone of Obamacare, to provide savings that could be applied to offset other contentious tax issues but also increases premiums and the number of uninsured. The Society has consistently opposed any measure that would increase the number of uninsured or access to affordable coverage, and we joined as the only endocrine-related organization with the Trust for America's Health, public health, medical societies, and patient advocacy groups in sharing our concerns with Congress.
- The House version would eliminate the exemption for tuition waivers from taxable income for graduate students who serve as teaching or researching assistants. The Society has joined the March for Science and FASEB in opposing this provision arguing that taxing tuition waivers for graduate students will create a financial hardship for individuals who typically have modest incomes and providing tuition remission allows universities and colleges to reduce the cost of graduate education or students who teach or conduct research as part of their training.
- The House version would also eliminate the current deduction for student loan interest and the deduction allowed for medical expenses.

The House of Representatives passed its version of tax reform last month; the Senate passed its version December 1. Both House and Senate Republicans are committed to working out differences so that they can have a final bill on the president's desk by Christmas. The biggest challenge for Republicans is that the measure would increase the deficit by an estimated \$1.5 trillion. The deficit increase would trigger a budgetary law, known as PAYGO, which begins across-the-board spending cuts. Medicare would be liable for \$25 billion in cuts. Congress normally inserts budget rule waiver language into year-end legislation to avoid automatic cuts; however, this sets up an awkward quandary for members of Congress of allowing either Draconian spending cuts or a dramatic deficit increase.

To stay up to date on the latest congressional actions and Society advocacy, please look for updates on Endocrine News online and Society advocacy alerts.

Society Explores Policy Solutions to Address Rising Insulin Costs



Given the dramatic increases in the cost of insulin over the past decade, the Endocrine Society has focused on ways to address patient access to this lifesaving therapy for patients with diabetes.

Our members continue to express great concern about the impact that rising insulin costs have on their patients' diabetes treatment, as well as their ability to provide high-quality care. Over the past two years, the Society has been working with key stakeholders to increase transparency across the supply chain and to identify potential solutions to tackle this critical issue. As a result of this work, the co-chairs of the Congressional Diabetes Caucus, Reps. Diana DeGette (D-CO) and Tom Reed (R-NY), reached out to the Society for its expertise in this area with a series of questions about physician prescribing decisions, non-medical switching, and patient assistance programs. To address these questions, we held a series of focus groups during CEU in Chicago with endocrinologists from a variety of practice settings to better understand the impact to their practices and their patients. The Society submitted a written response to Reps. DeGette and Reed detailing these findings in late October, which can be accessed at: <https://www.endocrine.org/insulin>.

We have also been working with the American Medical Association (AMA) to further identify legislative or regulatory pathways to reduce the cost burden on patients and to improve physicians' ability to care for their patients with diabetes. At the November AMA House of Delegates meeting, the Endocrine Society and the American Association of Clinical Endocrinologists introduced a resolution that urged the

AMA to pursue several initiatives aimed at improving insulin affordability for patients with diabetes.

The resolution called on the AMA to convene a summit to identify potential solutions to the dramatic increase in insulin costs and also advocate for initiatives to reduce patient cost-sharing for insulins, stabilize drug formularies throughout a plan year to reduce non-medical switching of insulin products, facilitate greater transparency of insulin pricing, and integrate drug formularies into electronic health records.

Overwhelming support for addressing insulin costs and their impact on patients expressed on the floor of the House of Delegates led to a unanimous vote for the AMA to study these issues and provide a report with findings and recommendations to the House of Delegates at the 2018 Annual Meeting in June. We look forward to working with the AMA as it moves forward in developing these recommendations and with the Congressional Diabetes Caucus as it explores potential solutions to this critically important issue. **EN**



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



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ENDO2018

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MARCH 17-20, 2018 CHICAGO, IL MCCORMICK PLACE WEST
ENDO2018.ORG

KEY DATES

ADVANCE REGISTRATION DEADLINE

JANUARY 16, 2018

LATE-BREAKING ABSTRACT SUBMISSION

JANUARY 11-FEBRUARY 5, 2018

LATE/ONSITE REGISTRATION

JANUARY 17-MARCH 20, 2018

HOUSING DEADLINE

FEBRUARY 22, 2018

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