

SPECIAL ENDO 2017 PREVIEW: YOU DON'T WANT TO MISS ORLANDO!

MARCH 2017

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

Endocrine news

INTERNATIONAL

Critical Mass

Can the key to combatting obesity be found in our youngest patients? New studies not only reveal underlying causes, but could also reveal ways to curb this burgeoning epidemic before it's too late.

ESCHEWING THE FAT:

The new generation of obesity-busting methods

SPECIFIC AIMS:

New ENDO 2017 session tackles NIH grants

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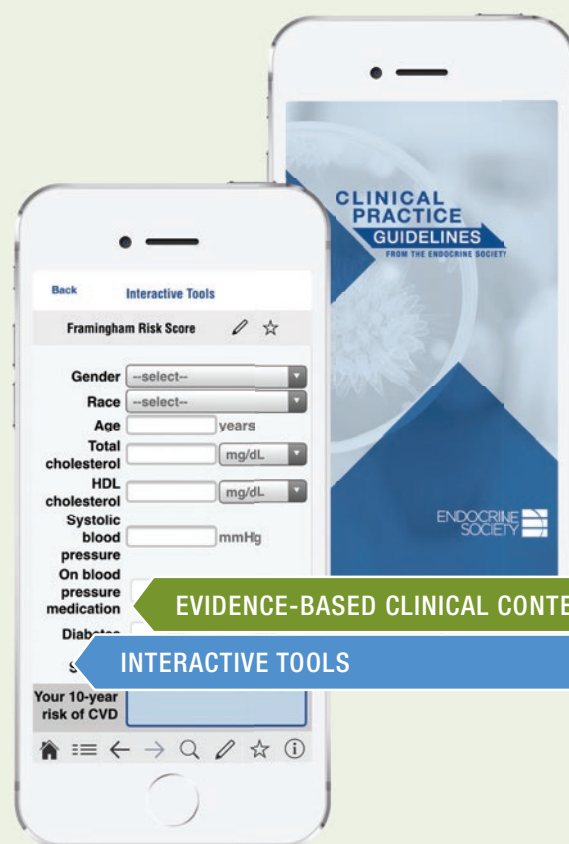
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BY COURTNEY CARSON



FROM THE **EDITOR**

Endocrine News Lauded as “Most Improved Magazine”


I WANTED TO TAKE THE OPPORTUNITY IN THIS MONTH’S column to share some good news about the magazine: *Endocrine News*’ revamped design and refocused editorial have garnered it a Gold Award for Most Improved Magazine as part of the 2017 *Association Trends* Salute to Association Excellence awards, which were announced at a luncheon event in Washington, D.C. on Thursday, February 23.

We are very honored and grateful for this award which shows what a transformation *Endocrine News* has gone through over the last couple of years. It doesn’t simply reflect the fact that the magazine underwent a major design enhancement, but the professionals who looked at the entries in this category also saw how much the content has changed as well.

As the design morphed into a more contemporary, elegant look from a traditional, technical publication, the content slowly refocused as well. Now the magazine highlights more personal work of what Endocrine Society members are doing to further the advancement of the science and practice of endocrinology.

Endocrine News has steadfastly realigned its content into more of a service journalism model, which means that most readers should be able to take something away from the magazine that they can put into practice almost immediately. Whether it’s a new way to discuss obesity with your patients, apps that can help you run your research lab more effectively, or tips on how other Society members have accomplished certain feats, *Endocrine News* strives to provide you with a plethora of actionable items.

Our greatest strength is something that other publications lack: You. We have been making strides to put Endocrine Society members at the forefront of everything we do because you are by far our competitive advantage. To further this approach, we will have more articles not just about Society members, but written by them as well. In 2016, we started running the “Why Endocrinology?” column where members wrote about why they chose this fascinating field. Planned primarily as a salute to the Endocrine Society’s 100th anniversary, it has proven so popular that it is now a regular column.

The *Association Trends* Gold Award comes on the heels of *Endocrine News* receiving an honorable mention Ozzy Award from *Folio*: magazine in November for the redesign. Obviously, none of us involved with *Endocrine News* — myself, senior editor Derek Bagley, and art director Catherine Neill Juchheim — do this for accolades...but it is especially rewarding when our efforts to help achieve the Society’s mission of advancing the science and practice of endocrinology around the world are appreciated. It truly is all for the greater good. 

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

MARCH 2017

Endocrine news

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

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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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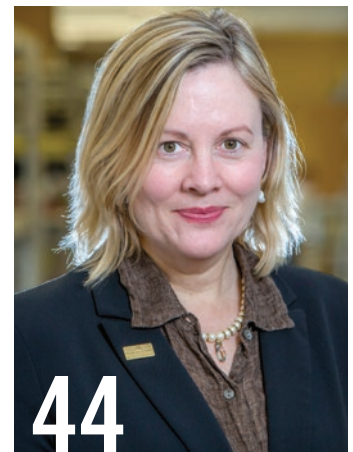
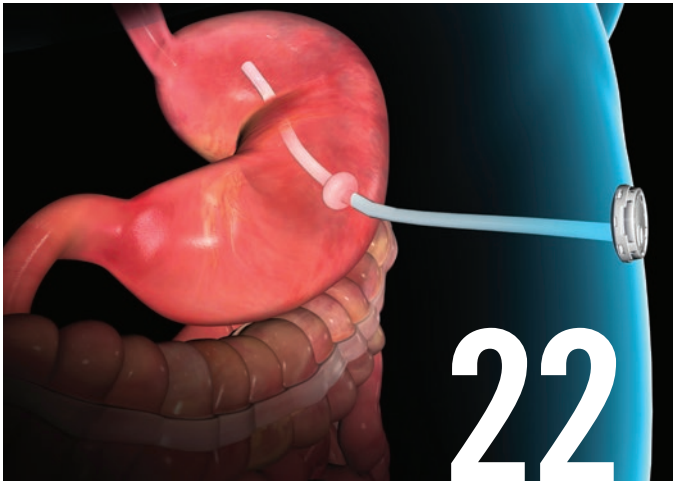
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Hormone Science to Health



Endocrine Society Opposes Barriers to Free Exchange of Scientific Information

PRESIDENT DONALD TRUMP SIGNED AN executive order in January limiting refugees into the U.S., barring the citizens of seven countries – Iraq, Iran, Syria, Somalia, Sudan, Libya, and Yemen – from entering the U.S. on any visa category, and, consequently, also creating new barriers to the global exchange of scientific information. The order has caused confusion and legal challenges, and we do not know whether this order will be allowed to be implemented or replaced with a narrower directive.

As one of the world's leading organizations representing researchers, physician-scientists, clinicians, and others committed to improve care for patients with endocrine diseases and disorders, we have expressed our concern about the impact of the order on biomedical research and the practice of medicine.

The Endocrine Society is a professional society, with over 18,000 members, 40% of whom work outside of the U.S. Our annual meeting, **ENDO**, is the premier scientific meeting for endocrinology and we need and welcome the participation of clinicians and researchers from around the world to share information, facilitate research across the globe, and better care for those afflicted by endocrine diseases. Through our programs, we are proud to reach out to diverse participants and include all our colleagues in our mission to advance excellence in endocrinology and promote its essential and integrative role in scientific discovery, medical practice, and human health.

The executive order has had direct impact on Endocrine Society members. We have heard from colleagues in targeted countries about missing **ENDO 2017** in Orlando, Florida. We also recognize that as a result of this order there are physicians and scientists training in the U.S. who are now unsure of their status and patients from targeted countries blocked from participating in studies. And a larger group of scientists, physicians, and patients not directly targeted by this executive order wonder what will be coming next.

“
The notions that science is an international endeavor; global collaborations enhance biomedical research and clinical trials rely on international cooperation; and science recognizes no limitations based on the origin, race, creed, gender or color of the scientist are fundamental principles of the Endocrine Society.
”

The Society strongly opposes efforts that create barriers to the exchange of scientific information. We will continue to welcome and support scientists and clinicians from around the globe because science, like disease, has no borders. We also have arranged special online access to sessions for those who are prevented by the order from attending our annual meeting.

The notions that science is an international endeavor; global collaborations enhance biomedical research and clinical trials rely on international cooperation; and science recognizes no limitations based on the origin, race, creed, gender or color of the scientist are fundamental principles of the Endocrine Society.

We will keep our members apprised of developments on this issue and we will not back down from the core principles that make us a global forum for endocrinology and the advancement of science. **EN**

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



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APRIL 1-4, 2017 (SATURDAY-TUESDAY)

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

KEY DATES

WEDNESDAY, MARCH 29 – THURSDAY, MARCH 30

Endocrine Fellows Series: Type 1 Diabetes Care and Management

FRIDAY, MARCH 31

Hands-On Thyroid Ultrasound Workshops:

Introductory Hands-On Thyroid

Advanced Hands-On Thyroid

EndoCareers® Early Career Forum

Diabetes Diagnosis & Management Workshop

Obesity Management Workshop

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

AFES 2017 to Take Place in Myanmar



The Myanmar Society of Endocrinology and Metabolism (MSEM) is hosting the 19th ASEAN (Association of Southeast Asian Nations) Federation of Endocrine Societies Congress 2017 (AFES2017) November 9 - 12 in Yangon, Myanmar.

ASEAN Federation of Endocrine Societies (AFES) is an association of seven endocrine societies in Southeast Asia: The Indonesian Society of Endocrinology, Malaysian Endocrine and Metabolic Society, Myanmar Society of Endocrinology and Metabolism, Philippine Society of Endocrinology and Metabolism, Inc., The Endocrine and Metabolic Society of Singapore, The Endocrine Society of Thailand, and the Vietnamese Association of Diabetes and Endocrinology.

The AFES Congress is a premier scientific meeting that rotates among the seven societies biennially. The congress welcomes the participation of clinicians and researchers from around the world to share information, facilitate research across the globe, and create better care for those afflicted by endocrine diseases. Through the congress, the federation hopes to reach out to diverse participants and include all its colleagues in its mission to advance excellence in endocrinology and promote its essential and integrative role in scientific discovery, medical practice, and human health.

With an extensive program covering a broad array of topics, various networking opportunities, poster sessions, continuing medical education, updates on new products and technologies at the AFES Expo, keynote speakers, and more, attendance at AFES 2017 is a “must-attend” event in Asia and one of the most recognized meetings among the clinicians and researchers in endocrinology and allied health professions. Come join your colleagues for an educational experience that will enhance

Shwedagon Pagoda in Yangon, Myanmar
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your professional development, improve your work, build your reputation and network, and shape the future of the field.

The Endocrine Society and the International Society of Endocrinology will partner at AFES to contribute to the scientific program of AFES2017, which will make the scientific program even more relevant internationally with the exchange of knowledge between the East and West.

For more information, go to www.afes2017myanmar.com.

Endocrine Society Announces Early Investigators Award Winners

ENDO2017

THE ENDOCRINE SOCIETY'S 99TH ANNUAL MEETING & EXPO

The Endocrine Society is pleased to announce the recipients of the Early Investigators Awards. The Early Investigators Awards were established to recognize the achievements of early career investigators in endocrine research.

Winners will be honored at **ENDO 2017**, the Endocrine Society's annual meeting, in Orlando, Fla.

The following individuals won the award from Amgen for metabolic bone research:

- **DEEPAK H. BALANI, DMD, PHD**, Massachusetts General Hospital, Boston, Mass.
- **WOJCIECH BLOGOWSKI, MD, PHD**, University of Zielona Góra, Zielona Góra, Poland.
- **CHRISTINE SWANSON, MD**, University of Colorado, Denver, Colo.
- **KELLY LAUTER ROSZKO, MD, PHD**, Massachusetts General Hospital, Boston, Mass.
- **YI FAN, DDS**, Harvard School of Dental Medicine, Harvard University, Boston, Mass.
- **NISHA NIGIL HAROON, DM**, Northern Ontario School of Medicine, Ontario, Canada.

The following individuals won the award from Merck & Co., Inc., for women's health and menopause:

- **MELANIE CREE-GREEN, MD**, Children's Hospital Colorado, Aurora, Colo.
- **SAMAR EL KHOUDARY, PHD, MPH**, University of Pittsburgh, Pittsburgh, Pa.
- **ABBY FLEISCH, MD, MPH**, Boston Children's Hospital, Boston, Mass.
- **HANNE HOFFMANN, PHD**, University of California, San Diego, Calif.
- **GRACE HUANG, MD**, Brigham and Women's Hospital, Boston, Mass.
- **JOANNE NGEOW, MBBS, MRCP, MPH**, National Cancer Centre Singapore in Singapore.
- **LYNN YEE, MD, MPH**, Northwestern University, Chicago, Ill.
- **SHANNON STEPHENS, PHD**, University of California, San Diego, Calif.
- **KANAKADURGA SINGER, MD**, University of Michigan, Ann Arbor, Mich.
- **SHRUTHI MAHALINGAIAH, MD**, Boston University, Boston, Mass.

The following individuals won the award from Pfizer, Inc. for women's health and menopause research:

- **MATTHEW QUINN, PHD**, National Institutes of Health's National Institute of Environmental Health Sciences, Research Triangle Park, N.C.

- **MELANIE SCHORR, MD**, Massachusetts General Hospital, Boston, Mass.
- **SUMAN SRINIVASA, MD, M.S.**, Massachusetts General Hospital, Boston, Mass.
- **JOSE DONATO JR., PHD**, Universidade de São Paulo, Brazil.
- **GIOVANNI MUSCOGIURI, MD, PHD**, Federico II University, Naples, Italy.
- **KALPANA DUWADI ACHARYA, PHD**, Wellesley College, Wellesley, Mass.
- **JESSICA DEVIN, MD**, Vanderbilt University, Nashville, Tenn.

The following individuals won the award from the Endocrine Society for endocrine research:

- **ADA CHEUNG, MBBS**, Austin Hospital, Heidelberg, Australia.
- **JEFFREY ROIZEN, MD, PHD**, The Children's Hospital of Philadelphia, Philadelphia, Pa.
- **ASHLEY SHOEMAKER, MD**, Vanderbilt University, Nashville, Tenn.
- **ADINA TURCU, MD**, University of Michigan, Ann Arbor, Mich.
- **KRISTEN R. VELLA, PHD**, Beth Israel Deaconess Medical Center, Boston, Mass.

Additional information on this award and the recipients is located on the Society's website at www.endocrine.org/earlycareerawards.

Endocrine Society Issues Pediatric Obesity Clinical Practice Guideline

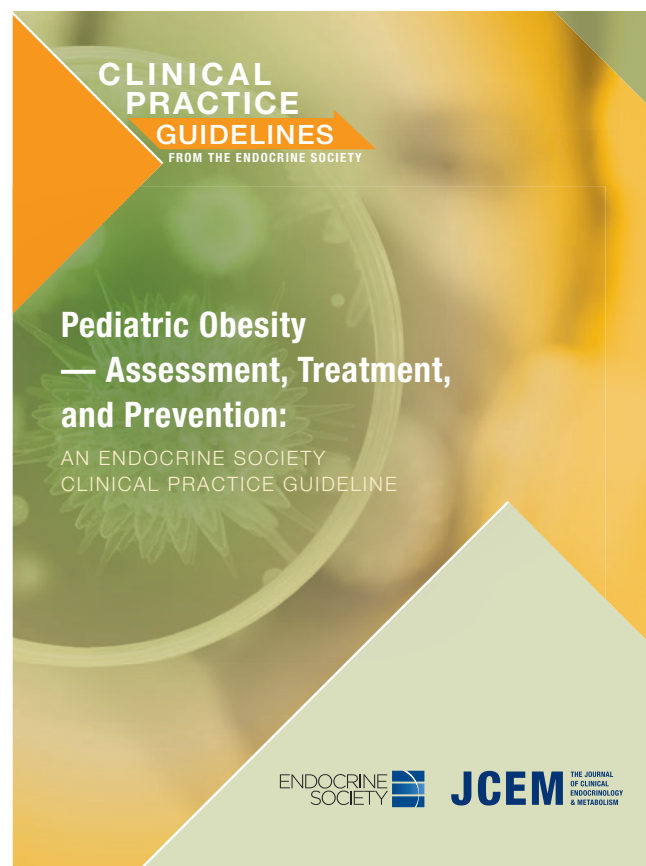
On February 1, the Endocrine Society issued a Clinical Practice Guideline advising healthcare providers on how to prevent and treat childhood obesity with lifestyle changes.

The guideline, titled “Pediatric Obesity — Assessment, Treatment, and Prevention: An Endocrine Society Clinical Practice Guideline,” was published online and will appear in the March 2017 print issue of *The Journal of Clinical Endocrinology & Metabolism* (JCEM). In addition to prevention and treatment, the guideline provides recommendations on how to evaluate affected children for medical or psychological complications, when to evaluate children for rare genetic causes of obesity, and when to consider medications or surgery for the most severely affected older adolescents.

Pediatric obesity is a pervasive international problem. Seventeen percent of American children and teenagers between the ages of 2 and 19 were affected by obesity in 2011-2014, according to the U.S. Centers for Disease Control and Prevention. Obesity in this age group was associated with an estimated \$14.1 billion in additional prescription drugs, emergency room, and outpatient medical visit costs each year, according to the Society’s Endocrine Facts & Figures Report.

The guideline authors noted unmet needs for future research include understanding the causes of pediatric obesity and its complications, prevention, and treatment. In addition, research is needed to examine how environmental and economic factors can drive worldwide cultural changes in diet and activity.

Endocrine Society members who were on the task force that developed this guideline include: task force chair Dennis M. Styne, MD, of the University of California Davis Medical Center in Sacramento; Silva A. Arslanian, MD, University of Pittsburgh, Pittsburgh, Pa.; Ellen L. Connor, MD, University of Wisconsin,



Madison; Ismaa Sadaf Farooqi, PhD, University of Cambridge in Cambridge, U.K.; M. Hassan Murad, MD, Mayo Clinic, Rochester, Minn.; Janet H. Silverstein, MD, University of Florida, Gainesville; and Jack A. Yanovski, MD, PhD, National Institutes of Health, Bethesda, Md.

The Society established the Clinical Practice Guideline Program to provide endocrinologists and other clinicians with evidence-based recommendations in the diagnosis, treatment, and management of endocrine-related conditions. Each guideline is created by a task force of topic-related experts in the field. Task forces rely on evidence-based reviews of the literature in the development of guideline recommendations. The Endocrine Society does not solicit or accept corporate support for its guidelines. All Clinical Practice Guidelines are supported entirely by Society funds.

The Clinical Practice Guideline was co-sponsored by the European Society of Endocrinology and the Pediatric Endocrine Society.

The guideline was published online at www.endocrine.org/KidsObesity, ahead of print.

See the Q&A with committee chair Dennis Styne, MD, on page 20.



Anne L. Peters Joins Livongo's Clinical Advisory Board

Anne L. Peters, MD, has been added to the first Clinical Advisory Board of the consumer digital health company, Livongo Health, based in Mountain View, Calif.

Peters, a professor of medicine at the University of Southern California; director of USC Westside Center for Diabetes, and a practicing physician at Keck Medicine of USC – Beverly Hills, is the former chairperson of the American Diabetes Association Council on Health Care Delivery and Public Health. She has a research center in East Los Angeles where she works with her team to prevent diabetes in the surrounding communities and has authored *Conquering Diabetes: A Cutting-Edge, Comprehensive Program for Prevention and Treatment*.

As a member of Livongo's panel of diabetes and healthcare experts, Peters will provide feedback and advice as Livongo delivers programs to improve the care of chronic conditions. The Advisory Board will support Livongo in continuing to deliver clinically advanced, real-time, and personalized care enabled by technology and experienced caregivers where and when appropriate.



Dale Abel Receives Appointments to NHLBI, ACCA

Dale Abel, MD, PhD, was recently appointed to the National Heart, Lung, and Blood Institute's (NHLBI) Advisory Council of the National Institutes of Health as well as elected to the American Clinical and Climatological Association (ACCA).

Abel, director of the Fraternal Order of Eagles Research Center, director of the Division of Endocrinology & Metabolism and chair of the Department of Internal Medicine at the University of Iowa, will serve a four-year term that began in November 2016. The council advises and consults with the Secretary of Health and Human Services and the Director of the NHLBI on matters relating to the cause, prevention, diagnosis, and treatment of heart, blood vessel, lung, and blood diseases. This group meets four times a year and reviews applications and makes recommendations on research and training grants in addition to other funding and operational activities.

Abel's formal induction to this the 133-year-old ACCA will occur in October 2017. The ACCA's membership seeks to improve national medical education, research, and practice, focusing particularly on the effects of global climate change on health and epidemiological medicine.

A Rhodes Scholar and distinguished endocrinologist, Abel has spent much of his career mentoring early-career researchers through the Endocrine Society, the American Heart Association, and many other associations and institutions. **EN**



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

Orlando, Fla., April 1 – 4, 2017

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

www.endocrine.org/endo-2017

2017 Gordon Research Conference on IGF & Insulin System in Physiology and Disease

Ventura, Calif., March 12 – 17, 2017

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

cduan@umich.edu

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

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

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

info@keystonesymposia.org

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

Florence, Italy, March 23 – 27, 2017

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

leisten@humacom.com

19th European Congress of Endocrinology

Lisbon, Portugal, May 20 – 23, 2017

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

www.ece2017.org

EndoBridge 2017

Antalya, Turkey, October 19 – 22, 2017

Jointly organized by the Endocrine Society, European Society of Endocrinology, and the Society of Endocrinology and Metabolism of Turkey, EndoBridge will provide a comprehensive update in the field of endocrinology.

This meeting is designed for the clinical endocrinologist. The official language of the meeting is English, but simultaneous translation will be available in Russian, Arabic, and Turkish.

info@endobridge.org

19th ASEAN Federation of Endocrine Societies 2017

Yangon, Myanmar,

November 9 – 12, 2017

ASEAN Federation of Endocrine Societies (AFES) is an association of seven endocrine societies in Southeast Asia with a conference held every two years. With an extensive program covering a broad array of topics, various networking opportunities, poster sessions, continuing medical education, updates on new products and technologies at the AFES Expo, keynote speakers, and more, AFES 2017 is a "must-attend" event in Asia and one of the most recognized congresses among the clinicians and researchers in endocrinology.

www.afes2017myanmar.com

Endocrine Board Review 2017

Chicago, Ill., September 26 – 27, 2017

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

www.endocrine.org/ebc



WHY ENDOCRINOLOGY?

Our Complex Specialty

BY ANTONIO SELMAN-GEARA, MD, Professor of Endocrinology and Diabetology,
Universidad Central del Este, San Pedro de Macoris, Dominican Republic

Medicine influenced me very early on. You might even say prenatally; I was born and raised adjacent to a very old hospital in the Dominican Republic. My childhood was spent playing outside where the groans from the patients were never very far away. I should add that my mother took me to see a “pythoness” who revealed that being a physician was in my future. She also told me stories of how people “with sugar” died if they did not receive medication.

After I received my MD from Universidad de Santo Domingo, the dean encouraged me to take over a fairly small physics and chemistry laboratory. Shortly thereafter, I was named a biology professor, which along with my medical practice, prompted my decision to go to Spain. There I specialized in endocrinology after having a relatively modest scientific background and an even more modest means to discover the intricate and unforeseen events of endocrine disorders.

In time, I became co-founder of Instituto de Diabetes. With barely a dozen endocrinologists, we founded Sociedad Dominicana de Endocrinología in 1974, electing me as its first president. The creation of a new medical faculty in a private university allowed me to set up the Endocrine Professorship, which I developed for three decades. I also had the opportunity to lead congresses at the university and at Asociación Latinoamericana de Diabetes.

In 1992, I joined the Endocrine Society, and I started to realize in 1999, while I was serving a second term as president of Sociedad Dominicana de Endocrinología, that there was a conclave of local

prominent professors as well as professors from the U.S., Europe, and beyond. Every year I enjoy presenting works on the subject, the fruits of our clinical experiences, and ultimately realized my passion for disorders that affected the pituitary and adrenal glands. Recent presentations included a poster on pituitary macroincidentaloma I presented in Boston at **ENDO 2016** and one on prolactinoma diagnosis and management presented in Chicago at ICE/**ENDO**

2014. This research enabled me to join the Real Academia de Medicina y Cirugía de Andalucía Oriental, Granada (Spain) as a Foreign Correspondent Member.

For me, these meetings are a form of “rebirth.” I keep coming back to learn as much as I can about hormones: the science, the practice, and their clinical components. I feel that science, along with art, together exalt the virtues of endocrinology, our very complex specialty, that, with each passing day, is becoming more prevalent in molecular sciences as it deciphers function and tissues, research and diagnostics, disease and cure...all for the good of humanity.

As I draw ever closer to 80 years on our planet, I can’t help but wonder whether reincarnation really exists. If it does, I can

assure you that I would retrace my steps and do it all over again. **EN**

Medicine is the family business in the Selman clan. Selman-Geara’s oldest son, Antonio Selman-Almonte, MD, a pediatric endocrinologist who also practices in the Dominican Republic, trained with Zvi Laron, MD, in Israel, and is also a member of the Endocrine Society. Another son, Antoine Selman-Fermin, is in the Research Emergency Department at the Albert Einstein Medical Center, in Philadelphia, Pa.

“
I feel that science, along with art, together exalt the virtues of endocrinology, our very complex specialty, that, with each passing day, is becoming more prevalent in molecular sciences as it deciphers function and tissues, research and diagnostics, disease and cure...all for the good of humanity.
”

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.

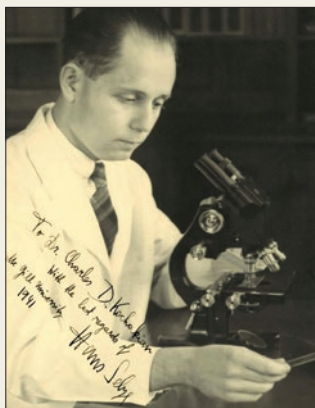
“What motivates me to suggest this device to my patients is that the weight loss happens not only from the withdrawal of about 30% of the consumed calories, but also from **patients changing their eating behavior and implementing more mindful eating patterns**, such as chewing carefully and eating more slowly. Only well-masticated food can be easily aspirated.”

— **ANASTASSIA AMARO, MD**, assistant professor, Division of Endocrinology and Metabolism, Perelman School of Medicine, University of Pennsylvania, who participated in the clinical trials for the AspireAssist, a device that connects the stomach to a valve on the abdomen where a person would empty about 30% of a newly consumed meal as a means for weight loss in “Eschewing the Fat” on page 22.

FROM THE CENTURY OF
ENDOCRINOLOGY TIMELINE

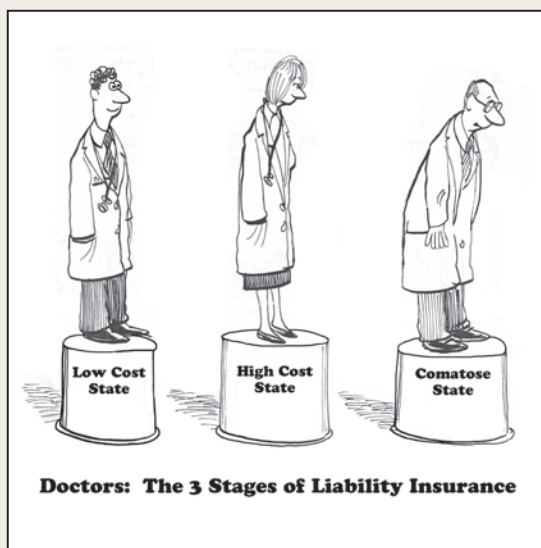
1936:

*Concept of Stress
Introduced by Selye*



In 1936, Society member Hans Selye wrote about a stress condition known as general adaptation syndrome (GAS) which was published in *Nature*. In the GAS, Selye explained that the body passes through three universal stages of coping: the alarm stage, the resistance stage, and the exhaustion stage. The General Adaptation Syndrome model by Selye presents a biological explanation of how the body responds and adapts to stress.

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



SHUTTERSTOCK.COM/CARTOONRESOURCE

5%-7%

The amount of body weight a person with prediabetes needs to lose that could delay or prevent type 2 diabetes (along with at least 150 minutes of brisk exercise per week.)

— SOURCE: CDC.GOV

— A Love/Hate Relationship: — Americans & Obamacare

40% PRESERVE ACA BUT WITH IMPROVEMENTS

16% REPEAL ACA IMMEDIATELY

12% KEEP ACA IN ITS CURRENT FORM

31% REPEAL ACA ONCE A REPLACEMENT IS READY



An Associated Press – NORC Center for Public Affairs Research poll contacted 1,036 adults January 12 – 16, 2017, and asked their views on the Affordable Care Act (aka Obamacare). A majority favor keeping it with changes since many components have widespread popularity (pre-existing conditions, etc.).

— SOURCE: AP-NORC CENTER FOR PUBLIC AFFAIRS RESEARCH



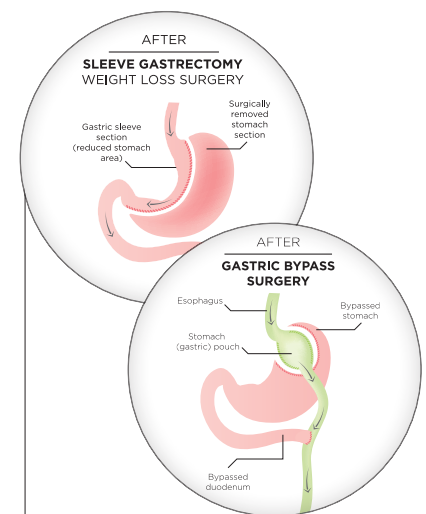
BY DEREK BAGLEY

Five-Year Results of STAMPEDE Trial Show Bariatric Surgery's Efficacy on Treating T2D

Researchers at Cleveland Clinic last month published the five-year results of the Surgical Treatment and Medications Potentially Eradicate Diabetes Efficiently (STAMPEDE) trial, which compared intensive medical treatment and surgical treatment of uncontrolled type 2 diabetes. The results, published in the *New England Journal of Medicine*, showed that bariatric surgery plus intensive medical intervention was more effective in treating type 2 diabetes than intensive medical intervention alone.

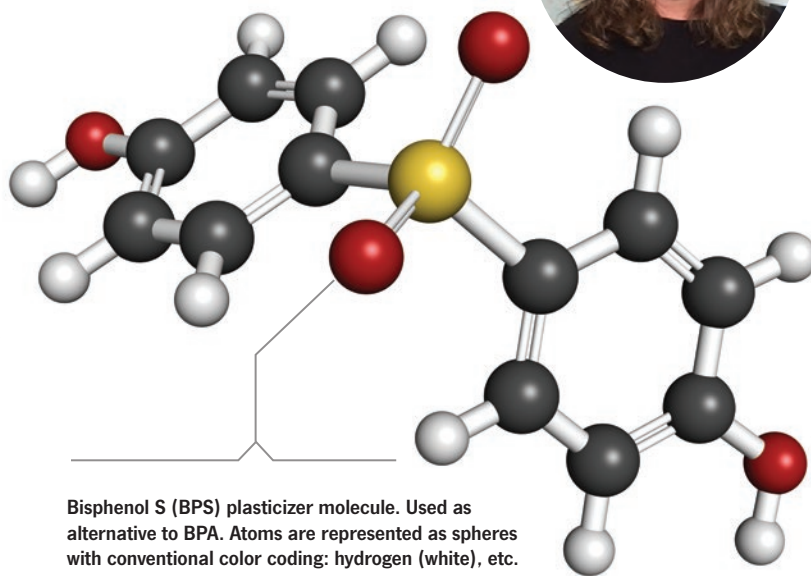
The researchers, led by Sangeeta R. Kashyap, MD, professor of medicine and Philip R. Schauer, MD, professor of surgery point out that observational studies and randomized, controlled trials have shown that bariatric surgery used specifically to treat diabetes significantly improves glycemic control and reduces cardiovascular risk factors, but these have mostly been short-term studies. As part of their ongoing STAMPEDE trial, the team has shown that patients experienced positive outcomes at one- and three-year randomization, especially after gastric bypass and sleeve gastrectomy procedures, which they found to be superior to medical therapy alone. Now they have results on this final, five-year follow-up. They write that this study “attempts to address questions regarding the relative long-term efficacy and safety of bariatric surgery and its effects on diabetes-related end-organ disease.”

The researchers assessed outcomes five years after 150 patients with type 2 diabetes and a BMI of 27 to 43 randomly received intensive medical therapy alone or intensive medical therapy plus Roux-en-Y gastric bypass or sleeve gastrectomy. Of these patients, 134 completed the five-year follow-up. The primary goal the team wanted to see patients meet was a glycated hemoglobin level of 6.0% or less with or without the use of diabetes medications. “At five years,” the authors write, “the criterion for the primary end point was met by two of 38 patients (5%) who received medical therapy alone, as compared with 14 of 49 patients (29%) who underwent gastric bypass (unadjusted $P = 0.01$, adjusted $P = 0.03$, $P = 0.08$ in the intention-to-treat analysis) and 11 of 47 patients (23%) who underwent sleeve gastrectomy (unadjusted $P = 0.03$, adjusted $P = 0.07$, $P = 0.17$ in the intention-to-treat analysis).” They continue that the patients who had surgical procedures saw greater reduction in glycated hemoglobin levels than patients who received medical therapy alone. The surgical group lost more weight than the medical-therapy group, used less insulin, and reported an improved quality of life.



Findings: Based on these findings, the authors conclude: “Five-year outcome data showed that, among patients with type 2 diabetes and a BMI of 27 to 43, bariatric surgery plus intensive medical therapy was more effective than intensive medical therapy alone in decreasing, or in some cases resolving, hyperglycemia.” They go on to write that these beneficial effects are durable, even in patients with mild obesity and that the effects of bariatric surgery on clinical endpoints like myocardial infarction, renal failure, blindness, and death should be examined further.

Q&A with Ella Atlas, PhD, Lead Author of “Bisphenol S Induces Adipogenesis in Primary Human Preadipocytes from Female Donors”



Bisphenol S (BPS) plasticizer molecule. Used as alternative to BPA. Atoms are represented as spheres with conventional color coding: hydrogen (white), etc.

Last year, Ella Atlas, PhD, of Health Canada, and her team published an article in *Endocrinology* that showed exposure to bisphenol S (BPS), a chemical used to replace the much-maligned bisphenol A (BPA), can encourage the formation of fat cells.

The researchers created a human cell model to test the effects of BPS exposure. They used human cells called preadipocytes — undifferentiated cells that can develop into fat cells — taken from the hip, thigh, or abdomen of female volunteers. Groups of cells were exposed to various concentrations of BPS during a 14-day period. For comparison purposes, some cells were exposed to the chemical dexamethasone instead because it triggers a known rate of fat cell formation and accumulation of lipids, or fat-like substances that collect in the blood and tissue.

Researchers found that the cells exposed to the smallest amounts of BPS as well as the cells exposed to the highest concentrations exhibited the largest accumulation of lipids, while moderate amounts had a smaller effect. Exposure to even tiny amounts of endocrine-disrupting chemicals (EDC) can interfere with the functioning of hormones, since small changes in hormone levels are designed to trigger adjustments in metabolism, respiration, heart rate, and other bodily functions. Although some of the very low concentrations did show an effect on lipid accumulation, they were not as robust as the high concentration.

“Since BPS is one of the replacement chemicals used in consumer products that are marketed as BPA-free, it is important to examine whether BPS acts as an endocrine-disrupting chemical,” Atlas says. “This study shows that BPS and BPA have similar

effects on fat cell formation, lipid accumulation and expression of genes important for lipid metabolism.”

Concerns about BPA’s effects on health have led to stickers that proudly proclaim “BPA FREE!” and BPA substitutes like BPS, but a growing body of research is showing that just because something says it’s BPA free, it doesn’t mean it’s EDC free. *Endocrine News* spoke more with Atlas on her study and its implications.

Endocrine News: Can you give some background on your study? How did it come about?

Ella Atlas: My laboratory has been conducting research on gluco-corticoid mediated differentiation of fat cells for the past 15 years. Due to the increase in the obesity rates in the population, we became interested in the effects of environmental compounds, such as plasticizers, on fat tissue and on the metabolic function of the adipose tissue. We have done a lot of work on trying to understand the effects of BPA on adipocyte differentiation. When it was evident that BPA is being replaced with other bisphenols, we were interested to know whether some of the effects that were attributed to BPA can also be attributed to the replacement chemicals, as structurally they are very similar molecules.

EN: It seems BPS affects all kinds of functions, and now you’ve shown it can trigger fat cell formation. If BPS is left unchecked, what kinds of effects would we see in people?

EA: This was a study done in cells in culture. Therefore, although this result may raise some concern as to the possible effects in humans, we cannot relate the results to the human condition at

this stage. More research needs to be done in order to obtain solid scientific evidence that chemicals such as BPA and BPS can indeed affect metabolism and fat accumulation in humans.

EN: You note the limitations of your study — limited number of subjects, high concentrations to reach significance. How do we move forward from here? What kinds of further studies are needed?

EA: In order to be able to better understand the basis for the underlying biological responses, and in order to be better placed to predict these effects, it is desirable to understand the mode of action and the molecular targets of these chemicals. In addition, experiments to better characterize the dose response, particularly by determining whether low dose effects are observed on metabolic end points, need to be conducted.

EN: What should endocrinologists take away from your study's findings?

EA: There is a lot we do not yet know about environmental impacts on the endocrine system. That being said, for BPA the effects from exposure are thought to be especially crucial during gestation and lactation. If this is the case with BPS as well — and there is some evidence in the literature that this may be the case — then women may wish to exercise caution during child bearing and lactation to reduce exposures wherever feasible.

EN: Do you see a chemical ever being developed to use in consumer goods that's completely safe? Do you ever think there will be stickers on products that say "EDC free"?

EA: Industry should be thriving to achieve safer replacement chemicals, however, it is hard to imagine a chemical that can be labelled "EDC free" due to the complexity of the endocrine system and the many nuclear receptors involved.



Metabolic Risk Increased in Obese People Who “Self-Stigmatize”

Obese individuals who “self-stigmatize” about their weight may be at higher risk for developing metabolic problems, according to a study recently published in *Obesity*.

Researchers led by Rebecca L. Pearl, PhD, of the University of Pennsylvania in Philadelphia, write that obese people are often seen as lazy and unattractive, and to blame for their excess weight, and that due to this “weight bias,” they face “weight stigma.” “Weight stigma is a prominent psychosocial consequence of obesity that is associated with increased risk for depression, anxiety, body dissatisfaction, and low self-esteem,” the authors write.

Pearl and her team theorized that this stress could increase cardiometabolic risk in these individuals with obesity who self-stigmatize, or what they call “weight bias internalization, WBI.” The researchers examined 159 obese adults who enrolled in a weight-loss trial. The participants completed the Weight Bias Internalization Scale and Patient Health Questionnaire (a measure of depression). The answers were compared to labwork that tested for risk factors of metabolic syndrome. Fifty-one of the participants (32%) had metabolic syndrome, and the odds of meeting the criteria for metabolic syndrome were greater in the patients with higher WBI, the authors write. “Analyzed categorically, high (vs. low) WBI predicted greater odds of metabolic syndrome and high triglycerides ($P < 0.05$), even after controlling for the effects of body mass index and depression.”

Findings: The authors conclude that obese people with WBI are at greater risk for developed metabolic syndrome. However, they are careful to point out that this study was cross-sectional, so a converse relationship could be present (obese individuals with worse health may be more prone to WBI). They also write that these findings only pertain to people who were actively seeking weight-loss treatment, so they may not be indicative of the broader population. “Further research is needed to develop and test the effects of interventions that aim to reduce WBI among individuals with obesity,” they write. “To inform these interventions, future research efforts should focus on identifying specific biological and behavioral pathways — such as lipoprotein profiles, dietary intake, and engagement in physical activity — between WBI and cardiometabolic risk.” **EN**



EASING THE BURDEN OF Childhood OBESITY

BY KELLY HORVATH

With annual healthcare costs into the billions of dollars each year, childhood obesity has literally reached critical mass. Fortunately, new studies reveal underlying causes and contributors to this burgeoning epidemic as well as possible options to reversing this frightening trend.

According to the Endocrine Society's Facts and Figures report on Obesity, 16.9% of U.S. children ages two to 19 years are obese, having a body mass index (BMI) at or above the 95th percentile for age and sex, while a staggering 31.8% are overweight, having a BMI between the 85th and 94th percentiles.

Researchers estimate that childhood overweight and obesity cost \$14.1 billion annually in prescription drugs, emergency department visits, and outpatient visits, and incidence has progressively increased since the 1980s. Two recent studies have uncovered some of the mechanisms underlying the pathogenesis of childhood obesity and may point a way forward for reversing this trend.

Novel Hormone Implicated in Energy Balance

In "Decreased Circulating Levels of Spexin in Obese Children," published in *The Journal of Clinical Endocrinology & Metabolism*, Seema Kumar, MD, of the Mayo Clinic in Rochester, Minn., and team started off from where previous studies left off to examine the role of spexin, a hormone discovered in 2014 to be expressed in multiple tissues (e.g., skin, digestive, nervous, endocrine) throughout the body and to reduce adipocyte uptake of long-chain fatty acids, thereby helping to regulate energy homeostasis. Because the gene that encodes spexin is known to be the most downregulated gene in obese human fat, earlier studies hypothesized that it likely plays a role in obesity.

OnPoint

from the

ENDOCRINE SOCIETY

On February 1, the Endocrine Society published a Clinical Practice Guideline advising healthcare providers the best methods for preventing and treating childhood obesity using lifestyle changes. A full-length article on this new publication is planned for a future issue of *Endocrine News*. The full text of this guideline is available online at www.endocrine.org/KidsObesity.

“Our long-term goal is to determine which genes in gut bacteria are affecting our metabolism and whether we can manipulate those genes to prevent or treat early-onset obesity in the future.”

— NICOLA SANTORO, MD, PHD, YALE UNIVERSITY SCHOOL OF MEDICINE, NEW HAVEN, CONN.



pathogenesis. However, Kumar and team are the first to look at spexin in children. “Overall, our findings suggest spexin may play a role in weight gain, beginning at an early age,” she says.

The team retrospectively compared circulating spexin levels in 51 obese adolescents ages 12 to 18 years to those of 18 normal-weight peers (all of whom had been recruited for an unrelated trial in 2008–2010 to examine the effect of vitamin D3 on 25(OH)D levels and cardiovascular risk markers).

The 69 participants were divided into four groups based on spexin level. The odds of being obese in the group with the lowest level of spexin was more than five times higher than in the group with the highest level. Thus, similar to findings in adults, obese children demonstrated significantly lower levels of spexin than their normal-weight counterparts. Unlike in adults, however, spexin levels did not correlate with cardiometabolic risk factors, possibly due to exclusion criteria such as high glucose levels in the vitamin D study of children.

Spexin's Promising Future

This pediatric study is only the second human study of spexin, following the 2014 study of spexin in adults. “This is a very preliminary study, and we do not yet fully understand its physiological significance, but it does seem to suggest that the hormone spexin is involved in regulating body fat mass and energy balance from early on,” Kumar explains. Future studies, in fact, may investigate role of spexin among a younger cohort of children.

As for how spexin might be employed therapeutically, more studies are needed, but spexin's future looks promising. “We are currently doing further studies to better understand the relationship between spexin and childhood obesity. It is very early on, but, in rats, we know that giving spexin leads to decreased food intake and weight loss. Further studies are needed to explore if spexin has any benefit for obesity and related cardiometabolic disorders,” Kumar says.

Stomach Bugs

Increasingly, researchers are focusing on what role the more than 1,000 species of microorganisms in the gut play in human function, particularly, digestive function. Although commensal bacteria are necessary to metabolize certain compounds essential to humans such as folic acid, an association between the composition of the gut microbiota and human adiposity in adults has been discovered, and this association raises many questions, such as whether a similar association is demonstrated in pediatric populations and what the exact mechanisms are.

In “Role of Gut Microbiota and Short Chain Fatty Acids in Modulating Energy Harvest and Fat Partitioning in Youth,” also published in *The Journal of Clinical Endocrinology & Metabolism*, a team led by Nicola Santoro, MD, PhD, at the Yale University School of Medicine in New Haven, Conn., set out to answer some of these questions. “The problem is, which species of bacteria are there and how is a change in the composition of the bacteria in the gut going to affect human metabolism?” Santoro says.

To find out, the team measured body fat partitioning and fasting plasma short-chain fatty acids (SCFAs) in 84 children and adolescents ages seven to 20 years, 15 of whom were nonobese (BMI < 85th percentile), seven overweight (BMI 85th–94th percentile), 27 obese (BMI 95th–99th percentile), and 35 severely obese (BMI > 99th percentile), over a two-year period beginning in 2013. They found the gut microbiota of obese children to house several distinct bacterial communities (*Escherichia*, *Shigella*, *Clostridium*, *Prevotella*, *Faecalibacterium*, *Roseburia*, *Bifidobacterium*, and *Blautia*) more abundantly than in their lean counterparts and that the presence of these communities correlated significantly with plasma SCFA concentrations, due to these species’ ability to more efficiently metabolize carbohydrates. Importantly, they also demonstrated that the higher levels of SCFAs in obese children led to production of hepatic fat and weight gain.

You Are What You Eat

Although what accounts for differences in the composition is not entirely clear, researchers believe that these variances arise exogenously. “The diet seems to have an important role in shaping the composition of the bacteria,” Santoro says. However, the solution may not be so simple as deliberately targeting certain gut flora or administering probiotics because the overall composition remains more or less stable. Even when an individual takes antibiotics and disrupts his or her microbial composition, the disruption is temporary — in about a week, the gut microbiota resets itself.

“Our long-term goal is to determine which genes in gut bacteria are affecting our metabolism and whether we can manipulate those genes to prevent or treat early-onset obesity in the future,” Santoro says. The group is also currently investigating which specific foods nourish the “bad” bacteria and expect to publish their findings early in 2017. ^{EN}

HORVATH IS A FREELANCE WRITER BASED IN BALTIMORE, MD. SHE WROTE ABOUT THE VARIOUS LINKS BETWEEN THE ENDOCRINE AND CARDIOVASCULAR SYSTEMS IN THE FEBRUARY ISSUE.



AT A GLANCE

- ▶ Spexin concentration in children inversely correlates with weight, suggesting a potential role for the hormone as a biomarker for obesity.
- ▶ Children with certain species of gut bacteria that digest carbohydrates more efficiently than others face a long-term risk of developing obesity.
- ▶ The short-chain fatty acids acetate, propionate, and butyrate are associated with body fat distribution and hepatic lipogenesis; moreover, their presence strongly correlates with the presence of obesity-related gut bacteria.

Endocrine News talks with Dennis M. Styne, MD, chair of the task force that created the latest Clinical Practice Guideline on pediatric obesity. He tells us about the latest recommendations in treating these patients and how not all treatments are dependent on the physician.

The Endocrine Society Clinical Practice Guideline, “Pediatric Obesity — Assessment, Treatment, and Prevention: An Endocrine Society Clinical Practice Guideline,” was released last month and advises healthcare providers on how to prevent this burgeoning epidemic with a variety of lifestyle changes.

Intensive, family-centered lifestyle modifications to encourage a healthy diet and activity remain the central approach to preventing and treating obesity in children and teenagers, says the guideline’s task force chair, Dennis M. Styne, MD, of the University of California Davis Medical Center in Sacramento. “Since the Society last issued a pediatric obesity guideline in 2008, physicians have access to new information on genetic causes of obesity, psychological complications associated with obesity, surgical techniques, and medications that are now available for the most severely affected older teenagers. The guideline offers information on incorporating these developments into patient care.”

“Due to the difficulty in treating pediatric obesity and the frequent lack of long-term success, we emphasize once again that addressing lifestyle is key in preventing and treating childhood obesity.”



Endocrine News sat down with Styne to find out why this guideline is such a valuable tool for endocrinologists who treat pediatric patients.

Endocrine News: For endocrinologists familiar with the 2008 Pediatric Obesity guideline, what changes can they expect to see in the new guideline?

Dennis Styne: The reader will notice extensive updates in all areas. The presentation of the epidemiology of childhood obesity is updated with reference to the apparent stabilization at about 17% of the U.S. child and adolescent population, although a rise in the prevalence of extreme obesity is apparent. While we still favor the use of the BMI in the evaluation of childhood obesity, we comment on its limitations in view of different degree of total fat and distribution between racial/ethnic groups. It is important to augment BMI percentile information with clinical judgement to identify the child who is overweight.

In the evaluation of childhood obesity, it is important to recognize the new lower upper limits of the normal range of values for alanine transaminase (ALT) in the investigation of alcoholic fatty liver disease (25 for boys and 22 for girls). We highlight the lack of utility of the measurement of plasma insulin in evaluation as well as turning the clinician away from the evaluation for an underlying endocrine disorder in the absence of attenuated growth rate in most cases. The completely reworked section on the genetics of obesity emphasizes that approximately 7% of obese children have a genetic basis, and we indicate that a genetic valuation is indicted in those children who exhibit hyperphagia, develop obesity before five years of age, and have parents with severe obesity. We could not find strong evidence to support breast feeding as a method of prevention of the development of obesity. With only one medication approved for obesity in children, we caution the use of the medications approved for adults in subjects under 16 years of age and only with an experienced

Children and teenagers are diagnosed as being overweight when an individual's body mass index (BMI) is between the 85th and 95th percentile for their age and sex. Obesity occurs when a child or teen's BMI is greater than or equal to the 95th percentile for their age and sex. A child or teen is diagnosed with extreme obesity when the BMI is greater than or equal to 120% of the 95th percentile.

investigator. We review the growing evidence on the effects of bariatric surgery and support the existing guidelines for use on the appropriate mature, older adolescent subjects who may benefit.

EN: What was the main reason for the revision of the guideline?

DS: The epidemic of pediatric obesity remains an ongoing serious international health concern that deserves constant evaluation and attention. With over 1,778 new references listed on "PubMed" addressing childhood obesity since the publication of the initial guidelines, we strove to incorporate recent advances in the field. Many pediatric obesity studies have further clarified the difficulties associated with prevention and treatment with lifestyle changes and the need for primary prevention of childhood obesity through local, national, and international cooperative efforts.


EN: What are the key take-home messages for patients in this guideline?

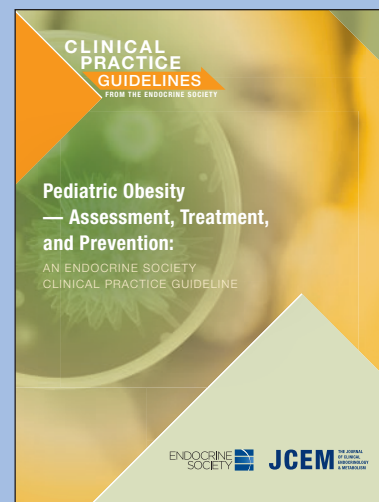
DS: Due to the difficulty in treating pediatric obesity and the frequent lack of long-term success, we emphasize once again that addressing lifestyle is key in preventing and treating childhood obesity. The approach to childhood obesity is daunting and can awaken defensiveness in parents. If the provider cannot provide supportive, empathetic care to the child and family, it is best to defer to a provider who can.

EN: What are your hopes for the impact of this guideline on the standards of care of the pediatric obese patient?

DS: We hope that providers will use the information in this evidence-based document to evaluate all children they see for the possibility of childhood obesity and to thoroughly investigate affected children and teenagers for comorbidities. We hope that they will utilize the information presented on prevention and treatment of childhood obesity to address their young patients and their families in a sensitive and nonthreatening manner. For the more severely affected older adolescents, we provide guidelines for the situations in which bariatric surgery might be appropriate, but only if an experienced team is available. However, we caution providers lacking experience in the use of medications targeting obesity from using these agents in children, especially those under the age of 16 years. We also provide guidelines for a provider to determine who would be an appropriate candidate for bariatric surgery.

EN: How do you expect other medical specialties to be affected by your recommendations?

DS: With childhood obesity being epidemic, providers who see children will unequivocally encounter obese children. While it might not be the focus of their field, these providers must be aware of the methods of diagnosis and evaluation of comorbidities that are present. Even if they are not in a clinical situation in which they can participate in the treatment of childhood obesity, they certainly can refer the child to an endocrinologist or other appropriate providers to assist in the care of their young patients. 



GUIDELINE RECOMMENDATIONS

- ▶ Children or teens with a BMI greater than or equal to the 85th percentile should be evaluated for related conditions such as metabolic syndrome and diabetes.
- ▶ Youth being evaluated for obesity do not need to have their fasting insulin values measured because it has no diagnostic value.
- ▶ Children or teens affected by obesity do not need routine laboratory evaluations for endocrine disorders that can cause obesity unless their height or growth rate is less than expected based on age and pubertal stage.
- ▶ About 7% of children with extreme obesity may have rare chromosomal abnormalities or genetic mutations. The guideline suggests specific genetic testing when there is early onset obesity (before five years old), an increased drive to consume food known as extreme hyperphagia, other clinical findings of genetic obesity syndromes, or a family history of extreme obesity.

The guideline was published online at www.endocrine.org/KidsObesity, ahead of print.

From a stomach-emptying device to gastric balloons to reformulated drugs, weight-loss options continue to multiply. But are they the wave of the future or a temporary solution to a chronic problem?



BY ERIC SEABORG

ESCHEWING *the* Fat:

New Obesity Treatments Offer New Choices

As the challenge of treating obesity continues to grow, so do the treatment options. Over the past two years, physical interventions that are less invasive than bariatric surgery and new formulations of established drugs have received Food and Drug Administration (FDA) approval.

INTERRUPTING THE FLOW

Perhaps the most unusual new approach is a device patients use to empty part of their stomach contents before the calories can be digested.

Inserted endoscopically in outpatient surgery, the AspireAssist (Aspire Bariatrics) device consists of a tube that runs from the stomach to a port valve on the abdomen. After a meal, the patient attaches a tube to the port and spends five to 10 minutes emptying about 30% of the meal into a toilet.

In a one-year clinical trial, AspireAssist patients lost an average of 12.1% of their total body weight compared with 3.6% for the control group, who received only lifestyle counseling. It is approved for indefinite use in adults with a BMI of 35 to 55 kg/m², although the tube may need to be replaced periodically.

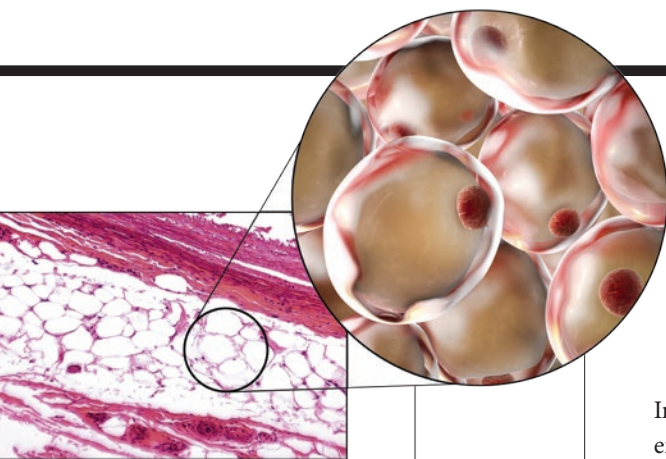
The device is not for everyone, and particularly not for patients with eating disorders. “It requires a certain organization of the lifestyle that would allow the person to use the device 20 to 40 minutes after each meal, three times a day,” according to Anastassia Amaro, MD, an assistant professor in the division of endocrinology and metabolism at the Perelman School of Medicine at the University of Pennsylvania, who participated in the device’s clinical trials.

“What motivates me to suggest this device to my patients is that the weight loss happens not only from the withdrawal of about 30% of the consumed calories, but also from patients changing their eating behavior and implementing more mindful eating patterns, such as chewing carefully and eating more slowly. Only well-masticated food can be easily aspirated,” Amaro says.

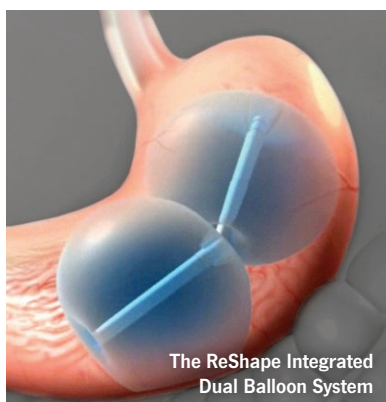
GASTRIC BALLOONS



Gastric balloons offer another approach to lowering caloric intake by occupying stomach space, leaving less space for food, and making the patient feel full while eating less.



White adipose tissue (fat cells), light micrograph and 3D illustration, hematoxylin and eosin staining, magnification 100x. Fat cells (adipocytes) have large lipid droplet which remains unstained



The ReShape Integrated Dual Balloon System

“The current approach is to manage obesity as a chronic disease. We expect weight regain if we don’t stay vigilant and continue treatments to keep it off.”

— DONNA RYAN, MD, PROFESSOR EMERITA,
PENNINGTON BIOMEDICAL RESEARCH
CENTER, NEW ORLEANS, LA.

The FDA approved two different balloon systems in 2015, both of which are placed in the stomach via endoscopic procedures: The Orbera Intragastric Balloon System (Apollo Endosurgery) can be filled with 400 to 700 ccs of saline. The ReShape Integrated Dual Balloon System (ReShape Medical) contains two connected, saline-filled balloons that can hold up to 900 ccs.

In 2016, the FDA approved the Obalon Balloon System, which does not require endoscopic insertion. The patient swallows a capsule attached to a thin inflation catheter. The capsule opens in the stomach, and the balloon is filled with air via the catheter. Up to three balloons, each up to 250 cc in volume, can be used.

All the balloons are removed using an endoscopic procedure after six months. Clinical trial results were similar over six months: Orbera patients lost 10.2% of their body weight, ReShape patients lost 6.8%, and Obalon patients lost 6.6%, compared with about 3.4% for the control groups.

The balloons are approved for patients with a BMI of 30 to 40 kg/m² who have been unable to lose weight through diet and exercise. “It is designed and approved for people who in general have less weight to lose than a typical bariatric surgery patient,” says Aurora Pryor, MD, chief of bariatric, foregut, and advanced gastrointestinal surgery at Stony Brook University, who participated in the clinical trial for the Obalon system. “For somebody who is nervous about surgery or has a borderline BMI for surgery, the balloon is a great way to see if something extra will make a difference. If somebody is committed and they want a lifelong permanent change, I think surgery right now is a little more predictable option.”

She says that the Obalon system may have an edge over the others because it does not require an initial endoscopy procedure and each balloon is smaller. “The nausea and the side effects are less than I see with other balloon systems. Even though the percentage of patients who experience nausea is comparable, the severity seems to be less,” Pryor says.

Although the balloons are only approved for short-term use, Pryor says that “around 85% of the people who lost weight with a balloon were able to keep it off at a year. By the time the balloons came out, patients were ready to move on. They were happy to have them as a temporary thing, but they wouldn’t want them forever.”

LOW-DOSE PHENTERMINE

New formulations are designed to make a pair of weight-loss drugs more effective — by raising and lowering pill doses.

The appetite-suppressant phentermine has been in use since 1959, but the available doses — an extended release of 37.5 mg and a 15-mg capsule — do not offer the flexibility needed, according to Scott Kahan, MD, MPH, medical director of the Strategies to Overcome and Prevent (STOP) Obesity Alliance at

George Washington University: “What a lot of doctors don’t realize is that the traditional dose of phentermine is generally way too high. You don’t need that high a dose to get a good benefit, and often people can’t tolerate that high a dose, so patients often end up having poor outcomes.”

The problem is that phentermine is a stimulant, so patients have problems with the side effects of insomnia, jitteriness, headache, high blood pressure, high pulse, and tachycardia.



Scored tablets shown not actual size

Sold under the brand name Lomaira (KVK Tech), the new version is 8 mg and scored so it can be easily split in half. It can be taken up to three times a day, 30 minutes before each meal, not just in the morning or before breakfast, as with the 37.5-mg version. “When you use a lower dose, you often get very good efficacy, and it is much better tolerated. I’ve had very good outcomes with it,” Kahan says.

EXTENDED-RELEASE BELVIQ

In contrast to the lower dose of phentermine, lorcaserin (Belviq) is now available in a higher, extended-release version. Belviq came out in 2012 and has been dosed at 10 mg twice daily, but the new Belviq XR is a 20-mg, once-a-day version (so the total daily dose remains the same).

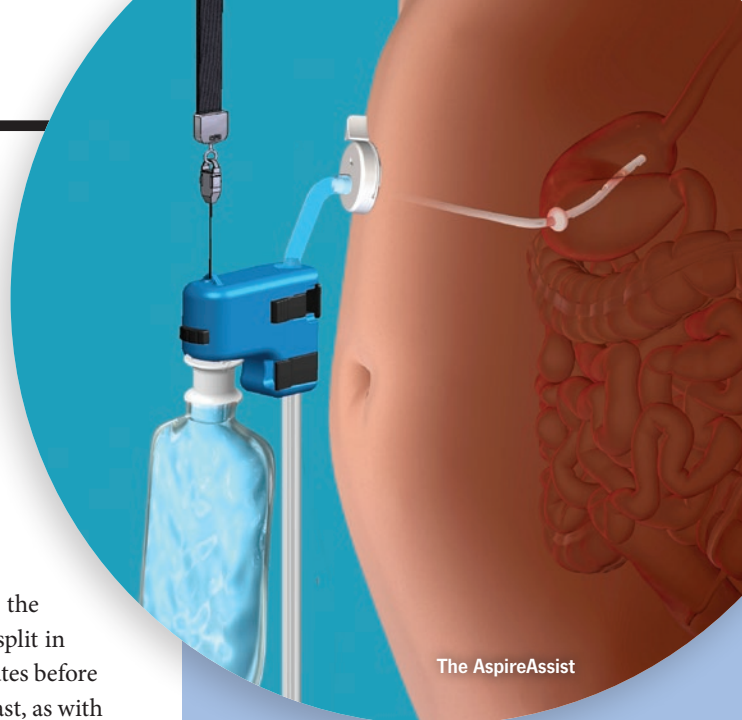
“From a practical perspective, it is much easier for most people to take these medications once daily rather than twice daily, so that has been very well received. It works better because people are actually taking it more consistently if they don’t have to take that second pill,” Kahan says.

Lorcaserin activates the serotonin 2C receptor in the brain, which may help patients eat less because they feel full after eating smaller amounts of food. In clinical trials, patients on the drug lost an average of 3.0% to 3.7% more body weight than those in the placebo group.

INTEGRATING THE NEW TOOLS

As clinicians learn more about the best way to use these tools, having more options in the toolbox can only help, says Donna Ryan, MD, professor emerita at Pennington Biomedical Research Center in New Orleans, La.: “The current approach is to manage obesity as a chronic disease. We expect weight regain if we don’t stay vigilant and continue treatments to keep it off. For example, we don’t have enough data on balloons to know how useful they are going to be over the long term. But maybe we will use them as one way to produce more weight loss, and then we will use drugs, special diets, and special exercise programs to help maintain the weight loss. I think combining these approaches is the wave of the future.” ^{EN}

SEABORG IS A FREELANCE WRITER BASED IN CHARLOTTESVILLE, VA. HE WROTE ABOUT THE ENDOCRINE SOCIETY’S NEW CLINICAL PRACTICE GUIDELINE ON TREATING HYPOPITUITARISM IN ADULTS IN THE FEBRUARY ISSUE.




The AspireAssist

AT A GLANCE

- ▶ Among the innovative new treatments for obesity is a device designed to interrupt the flow of calories to the body by partially emptying the stomach.
- ▶ Gastric balloons are approved for use for only six months, but offer a less invasive approach that some patients may welcome to kick-start weight loss.
- ▶ Low-dose phentermine and extended-release lorcaserin are new formulations that improve the efficacy of these drugs.



The AspireAssist



***Endocrine News* continues its conversation with clinical practitioner members of the Endocrine Society on patient-centered care. What does it mean for a practice, a patient, and the physician?**

Handle ^{Part 2} *with* care

COMPILED BY DEREK BAGLEY



This article picks up where it left off last month with an ongoing dialogue among physicians about what constitutes patient-centered care. While it is easy to say that all one has to do to achieve this goal is to “put the patient first,” that is an ideal that is often easier said than done.

In a 2012 blog post at www.healthaffairs.org, James Rickert writes about three obstacles that could possibly impede the path to patient-centered care: reimbursement models, dependence on quantity over quality, and a reliance on generalists who don’t necessarily put patients first. Although Rickert holds up accountable care organizations as a potential solution to these obstacles, he concludes that every patient deserves “empathic, trusted doctors with whom they feel they have a personal relationship, and who are working hard for no reason other than the care of the patient at hand.”

Here are more opinions on what clinician members of the Endocrine Society think of this care model, how it affects specific diseases, as well as specific patients. All those we spoke to agree that this is a delivery method to aspire to in which the patient becomes a partner in his or her care.



James V. Hennessey, MD, director of Clinical Endocrinology at Beth Israel Deaconess Medical Center, Boston, Mass.

“

Patient-centered means that I will lay out a plan to provide directed and supportive care until the problem is resolved.

”



Barbara Onumah, MD, Anne Arundel Medical Group in Annapolis, Md.

“

In my practice, I think of patients as ‘partners.’

The care is individualized and no two persons are treated alike even if they have similar medical conditions.

”



James V. Hennessey, MD

In my practice [patient-centered care] means that I assess the needs of the patients who are referred to me. Some have very straightforward problems like thyroid nodules, thyrotoxicosis, overt hypothyroidism, osteoporosis, pituitary tumors, or adrenal masses. For these individuals, I strive to provide the most efficient, effective, and supportive care to resolve the patients’ objective issues and educate the patient to the timeline and course of evaluation and therapy. Once a diagnosis has been established, I try to provide the most evidence-based solutions available to assure that the patient has received the most mainstream and proven interventions.

Patient-centered also means that I will lay out a plan to provide directed and supportive care until the problem is resolved. For example, a patient with a 3-cm hypoechoic thyroid nodule will receive a fine-needle aspiration biopsy, feedback on the results, referral to a surgeon as required, and post-operative support for either a malignant or benign diagnosis. Providing longitudinal care may eventually result in yearly follow-ups to assess the effectiveness of LT4 treatment, dose adjustments, or further education on appropriate ingestion procedures and an opportunity to provide further care and screening as the patient ages, such as reaching DXA screening thresholds.

For some patients, patient-centered care is best delivered by saying no. For example, an 86-year-

old with a thyroid-stimulating hormone (TSH) of 4.6 and normal FT4 should be told no, there is not enough evidence that LT4 treatment will enhance their quality of life. Further evaluation, such as repeating the TSH and perhaps measuring a TPO-ab titer would be the most appropriate next step. Over time, the patient may be returned to the primary care physician (likely NOT on LT4) when subsequent TSH values +/- TPO are all normal.

Another scenario would include the patient dissatisfied with his or her quality of life when euthyroid or euthyroid on LT4 mono-therapy. Here, there is frequently some Internet-driven search for a “provider” to supply Liothyronine.

As a physician, I feel it is patient-centered care to search out the other explanations for less than optimal quality-of-life issues such as other chronic medical conditions like obesity, obstructive sleep apnea, other serious issues like congestive heart failure or chronic obstructive pulmonary disease, and the multiple medications with side effects that match the symptoms far better than hypothyroidism. Here, I believe that patient-centered care is to assess what is best for the patient, whether to supply an easy prescription for what frequently turns out to be a placebo effect or to actually help discover the real reason for the patient’s problems. Clearly, some might consider this approach to be paternalistic, while others would recognize it as professionally appropriate.

Barbara Onumah, MD

Patient-centered care to me means providing care that is respectful, considerate, and places emphasis on what is important to the patient, instead of what the provider deems important.

In a patient-centered environment, empathy, a patient's values, and preferences, combined with standardized evidence-based principles, guides clinical decisions.

In my practice, I think of patients as “partners.” The care is individualized and no two persons are treated alike even if they have similar medical conditions. Because patients are partners, they get to play an active role in the decisions surrounding their treatment, including medication choices where appropriate.

R. Michael Tuttle, MD

To my mind, patient-centered care should be the goal of all patient-clinician interactions. It is a reminder that every medical decision (management decisions, follow-up options, treatment options) should be first and foremost based on what is best for that individual patient. And even more importantly, “what is best” for that patient may or may not be what I personally would do in that same situation. But by balancing my opinions and expertise with the respect for the patient's preferences, we can jointly develop a management strategy that optimally addresses the key issues important for that patient. Being patient-centered also is a reminder that there are multiple other people/institutions/entities interacting with the patient (family, friends, primary care clinicians, community, healthcare organizations, insurance companies) and that when developing a “best plan” for that patient, these other forces that are interacting with the patient also need to be considered.

Alan D. Rogol

I am a pediatrician who evaluates most patients through the prism of the family. So, patient-centered care means evaluating and treating patients in the context of the family. The condition (whatever it is) requires several layers of “thought”: what does it mean to the child — for the very young this is not so much of a problem given that the parent does the talking and acting. But as the child matures, one must put her/him into the equation, and understanding at the various developmental ages is a skill that requires honing. I certainly was much better after four decades of “practice” than I was at the beginning.

As the child matures into an adolescent, one must work with an equation that communicates more with the actual patient but at the same time working through the parents — both parts of the equation do not necessarily get equal weighting and the adolescent's privacy, etc., becomes more important. Not so infrequently the agendas of the parent/adolescent dyad are disparate and that tries the skill of the clinician.

Perhaps the best examples have to do with sexuality in the adolescent, which is altered remarkably with increasing maturation, and one approaches the adolescent and the parents in quite different manners.



R. Michael Tuttle, MD,
Memorial Sloan Kettering
Cancer Center, New York, N.Y.

“

It is a reminder that every medical decision (management decisions, follow-up options, treatment options) should be first and foremost based on what is best for that individual patient.

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Alan D. Rogol, professor
of pediatrics, University of
Virginia, Charlottesville

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[As] a pediatrician, patient-centered care means evaluating and treating patients in the context of the family.

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Elaine Pelley, MD, director of Preclinical Medical Education at the University of Wisconsin School of Medicine and Public Health, Madison

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Patient-centeredness is essentially a guiding principle in patient care, rather than any specific action.

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Leonard Wartofsky, MD, MACP, professor of medicine, Georgetown University School of Medicine; editor-in-chief, *Endocrine Reviews*, Washington, D.C.

“

To me, patient-centered care is the opposite of physician-centered care wherein the doctor [acts] as an authoritarian.

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Elaine Pelley, MD

Patient-centeredness is essentially a guiding principle in patient care, rather than any specific action. It can manifest at the individual patient level, for example, in shared decision making during a visit or by allowing a patient's choice in methods of communication (in person, phone, or electronic messaging). But it can also occur at a systems level, such as having evening or weekend clinic hours or providing outreach clinics in remote areas.

An important facet of patient-centered care is that once the patient, not the physician, is at the center, that leaves more room for other members of the healthcare team to contribute to the care of the patient. In my practice, this model has allowed me to focus on new patient evaluations and more complex cases, while sharing in the follow-up care of most patients with a physician assistant. This has increased our ability to serve more new patients, while simultaneously providing our current patients with two providers that understand and are engaged in their care.

Leonard Wartofsky, MD, MACP

To me, patient-centered care is the opposite of physician-centered care wherein the doctor, as an authoritarian, dictates what he or she thinks is appropriate and expects the patient to accept and follow the recommendations without question. Thus, such care is not particularly respectful of the patient's specific needs and cultural values. Patient-centered care aims to acknowledge patient and family preferences, provide support and counsel, and develop treatment plans in concert with social needs of the patient. ^{EN}



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

TAKING AIM

BY GLENDA FAUNTLEROY



The “Specific Aims” is one of the most important and challenging portions of a National Institutes of Health grant application. Fortunately, a new session at **ENDO 2017** will provide personal feedback and will grant writers with senior reviewers for one-on-one input.



A new offering at **ENDO 2017** promises to be a highlight for many in-training and early career professionals in attendance.

The Endocrine Society's Trainee and Career Development Core Committee (TCDCC) will introduce an interactive experience that will provide feedback for researchers who are in the process of submitting National Institutes of Health (NIH) K Award and equivalent Early Career Development Award applications.

Career development awards provide support for senior postdoctoral fellows, clinical fellows, and early career faculty-level candidates. They are designed to promote these individuals based on their past training and career stage. The Specific Aims page is the introduction of NIH's grant application.

The new **ENDO 2017** "Specific Aims Critique Activity" will be a one-on-one review session that gives conference attendees personal attention on the Specific Aims page of their NIH grant proposals — arguably one of the most important and challenging portions of the award application.

Lauren Fishbein, MD, PhD, assistant professor at the University of Colorado, Denver, is co-chair of the TCDCC and says the idea for the new

event evolved over time. For several years, the TCDCC held workshops at **ENDO** that provided overview information about the various sections of the K award grant.

"What we've found through member surveys is that people really wanted help specifically with grant writing, so last year we had a career development workshop focused on writing the Specific Aims page of a K Award and Early Career Development Award applications," she explains.

The response to the workshop was extremely positive, so much so that attendees who could not attend the session gave feedback urging for more scheduling flexibility.

"So this year, instead of having one session that's held at a specific time during the annual meeting, we are going to play matchmaker," Fishbein adds. "**ENDO** attendees will be able to submit their Specific Aims page ahead of time and we will match them with hopefully two reviewers who are more senior members in the Society."

Fishbein and her team will match the grant writer with a reviewer based on whether the grant is seeking support for basic research, clinical research, or translational research and





Be Your Own First Critic

Before asking reviewers to give their opinions about your Specific Aims page, you should first put your one-pager to the test. Assess your objectives by asking yourself:

- ▶ **Would my reviewers see my proposed project as tackling an important problem in a significant field?**
- ▶ **Would they view my Specific Aims as capable of opening up new discoveries in my field?**
- ▶ **Would my reviewers regard the work as new and unique?**
- ▶ **Would they view my Specific Aims as likely to exert a significant influence on the research field(s) involved?**
- ▶ **Are my Specific Aims written clearly, and are they easy to understand?**

When you are ready for outside opinions, consider also discussing your draft aims with colleagues who are not in your field. If they can understand your project and get excited about it, you have a better chance your reviewers will as well.

Source: NIH, National Institute of Allergy and Infectious Disease, "Draft Specific Aims."
www.niaid.nih.gov

will also match broadly based on the topic of the submission. Meetings will then be coordinated between the parties at their most convenient times so the reviewer can offer targeted input and critique.

Why is the Specific Aims Page so difficult?

The Specific Aims page is a one-page portion of an application's Research Plan that describes concisely the goals of the proposed research. It constitutes the master plan of the researcher's work. This page summarizes the expected outcome, including the impact that the results of the proposed research will exert on the research field involved, according to the NIH.


The Specific Aims page essentially should include everything about the application that is important and exciting — without the detail. It should state the specific objectives of the research proposed, including whether it intends to:

- Test a stated hypothesis;
- Create a novel design;
- Solve a specific problem;
- Challenge an existing paradigm or clinical practice;
- Address a critical barrier to progress in the field; and
- Develop new technology.

The key is to be as brief and "specific" as possible.

"When a grant is reviewed, it is usually reviewed by three people in detail, but the rest of the study section also reviews the grant and often times while they may just skim the rest of the grant, they will usually read the Specific Aims page in detail," Fishbein says. "It's really that eye-catching introduction to your grant before you then go into more detail on all these aspects."

Attendees wishing to participate in the event should indicate their interest when they register online for **ENDO 2017**. They will then be matched with the reviewers, asked to submit their pages ahead of time, and coordinate a time to meet the reviewer during **ENDO** at a time that is most convenient.

"We're really excited to offer this feature to our early career researchers and look forward to this mentoring opportunity," Fishbein adds. 



SUNSHINE


state of mind:

Plan Your Post-ENDO Escape!

BY COURTNEY CARSON

ENDO2017

THE ENDOCRINE SOCIETY'S 99TH ANNUAL MEETING & EXPO



For the first time in its history, **ENDO 2017** is taking place in Orlando, Fla., an idyllic location to become immersed in the latest endocrine research from around the world. However, due to the many attractions nearby, once the curtain comes down on the final scientific session, you may find yourself — and your family — ready for some fun in the sun. Mouse ears not included.



ENDO 2017 is the world's largest event for presenting and obtaining the latest information on endocrine science and practice. With an extensive program covering a broad array of topics, various networking opportunities, and continuing medical education, **ENDO** is a “must-attend” event for endocrinologists around the world.

Since it spans basic and clinical science and clinical care by delivering the most comprehensive content to a wide-ranging global audience of endocrine practitioners, researchers, educators, fellows, and students at a single event, endocrinology professionals come to **ENDO** to be part of the movement to lead endocrine science and medicine toward improved human health, and accelerate medical discoveries and new therapies. The continuum from bench to bedside comes together at **ENDO** each year, and participation is essential.

ENDO 2017 attendees will connect with the leaders in the field for the latest treatment options, case-based content, and best practices. Access to cutting-edge science and the researchers behind the latest discoveries will help you see what's coming next in the field of endocrinology and keep you informed of the latest trends and advancements in the field.

While in Orlando's Orange County Convention Center — **ENDO 2017's** venue — you can also learn about the latest industry information, products, and technologies presented at the **ENDOExpo** in West Hall B. Here you can visit and connect with exhibitors and learn how their latest product innovations can help improve research or patient care and outcomes.

So if you're setting up your appointment calendar, the first events get underway as part of the pre-conference activities as early as Tuesday March 28, with the 2017 Rachmeil Levine-Arthur Riggs Diabetes Research Symposium at the Rosen Plaza Hotel, near the Orange County Convention Center. On Friday March 31, a variety of Endocrine Society preconference events take place and last all day (see sidebar on page 40 for details).

ENDO 2017 officially begins on Saturday April 1 with the Presidential Plenary: The Influence of the Microbiome in Childhood and continues through Tuesday April 4, with the last sessions ending at 1:15 p.m. Don't you think you owe it to yourself to spend a few extra days in the Sunshine State getting some rightfully earned rest and relaxation before journeying back to your respective practices and laboratories?

(article continues on p. 38)

Day by Day

No doubt your days will be packed while you're at the Orange County Convention Center, weaving through the crowds as you make your way to various sessions and presentations at **ENDO 2017**. Here are just a few highlights — among hundreds — that might appeal to you.



The Orange County Convention Center by Songquan Deng / Shutterstock.com

Saturday April 1

Presidential Plenary: The Influence of the Microbiome in Childhood
8:00 – 9:30 a.m., Valencia

Jeffrey Gordon, MD, and Martin Blaser, MD, pioneers in the study of the effects of the microbiome on health and behavior will provide their expert perspectives on the gut microbiome and its impact on health and the development of major endocrine disorders, such as diabetes and obesity.

Big Data: New Resources for Endocrine Researchers
1:00 – 3:00 p.m., W303

This special session focuses on how to access and analyze very large data sets and apply big data tools to your own research. A hands-on workshop will accompany this symposium.

Sunday April 2

ESAP Live: Part 2
8:00 – 9:30 a.m., W414C

Attend interactive case-based sessions and walk through brand-new vignettes with the faculty of the latest editions of ESAP. Prepare for certification, re-certification, or just stay up-to-date on clinical endocrinology.

Knockout Rounds II
2:15 – 3:15 p.m., W206

Communicating the importance of endocrine research to funders and the public is an essential skill. Knockout Rounds provide trainees and early-career professionals with a novel presentation opportunity. With a single slide each, 15 presenters will describe the impact of their research on enhancing health outcomes. You will vote for your favorite along with an esteemed panel of judges.

Monday April 3

The Best of JCEM
8:00 a.m. – 12:00 p.m., W206

The most highly rated peer-reviewed articles of 2016, which cover the progress of scientific discovery in endocrinology, will be highlighted and summarized for you by the *JCEM* associate editors.

Challenging Cases from Surgeons and Endocrinologists
2:30 – 4:15 p.m., W414A

Through a series of interesting and blind cases covering endocrine-related disorders and their management, a combined panel of specialists from the Endocrine Society and the American Association of Endocrine Surgeons will facilitate discussion of each case and work through the diagnosis and management of each issue.

Tuesday April 4

Growing Up Is Hard to Do: Transition of the Pediatric Patient to the Adult World
8:00 – 9:30 a.m., W311

When transitioning patients, it is important to provide uninterrupted medical care while also providing a roadmap for future health care. This symposium will highlight three unique populations in whom transition of care is especially important and provide an overview of the psychological aspects of transition.

Communications Boot Camp,
10:30 a.m. – 12:00 p.m., W208A

Attend to learn how to become more skilled at communicating your research in impactful ways to different audiences.

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.

ENDO2017

THE ENDOCRINE SOCIETY'S 99TH ANNUAL MEETING & EXPO



The Leaky Cauldron at Universal Orlando Resort, by Kevin Kolczynski / ©2014 Universal Orlando Resort

Eat Your Heart Out

While the best dining may not always be associated with theme parks, several hot spots prove otherwise in Orlando.

Victoria & Albert's — The ultimate in fine dining at Walt Disney World Resort and one of the finest restaurants in the Southeast, Victoria & Albert's features modern American cuisine with exquisite products sourced from around the world — truffles from Italy, the finest caviar, fresh herbs from Ohio, beef from Japan, poulet rouge from North Carolina, and oysters from North Florida. Chef Scott Hunnel's approach is imaginative, and his food is an art form, featuring vivid colors and textures, with exquisite wine pairings offered with each course.

Be Our Guest — Named for the famous scene in Disney's *Beauty and the Beast*, this restaurant, located in the Magic Kingdom, features a quick fine dining scene for breakfast and lunch, while offering a more formal atmosphere for dinner. French and American cuisine reign supreme at this Disney hotspot featuring three scenes from the famed film — a grand ballroom, Belle's library, and the Beast's study.

Vivo Italian Kitchen — Located at Universal Resort's CityWalk, old world meets modern day at Vivo Italian Kitchen. Time-tested family recipes are served in a sleek contemporary setting. The expo kitchen showcases chefs whipping up delicious homemade sauces, making fresh mozzarella, and throwing pizza dough in the air as they create pizza masterpieces.

Mythos Restaurant — A feast for the senses, Mythos, located in Universal's Islands of Adventure, offers a seasonal menu ranging from top-notch burgers to salmon and risotto. Guests step into a grotto with intricate carvings of mythical creatures on the walls of this restaurant known just as much for its atmosphere as its delicious meals.

Cowfish Restaurant — The name says it all — burgers and sushi are the draw at this hotspot in Universal's CityWalk. While the restaurant features great sushi and prime burgers, it is also known for its Burgushi menu — sushi rolls made with hamburger-style ingredients. And whether guests are in the mood for milkshakes or sake, they will be pleased with the variety offered in this establishment known for its fresh, never frozen ingredients (except the milkshakes, of course!).

The Leaky Cauldron — Known as the most popular eatery in theme parks in the U.S., The Leaky Cauldron serves up tasty, traditional British fare in The Wizarding World of Harry Potter at Universal's Orlando Resort. The Leaky Cauldron is a small, grubby-looking pub and inn. In *Harry Potter and the Prisoner of Azkaban*, Harry stayed there for several weeks over the summer before heading off to Hogwarts for his third year. Once inside, guests find themselves under a cathedral ceiling with views toward the guest rooms in the inn with mouth-watering treats ranging from fish and chips to bangers and mash.

Notice A Theme?

You can't mention Orlando without Disney — the names are synonymous. Known for its theme parks, Orlando appeals to travelers of all ages.

Imagine walking into one of Walt Disney's most famous scenes — when Cinderella arrives at the Royal Ball and every head turns her way, or when Aladdin and Jasmine discover “A Whole New World” flying on a magic carpet, or even as a Disney film begins and viewers are transported to the famous castle, a dazzling fireworks show above — and being transported to a world that seems only to exist in childlike dreams, Walt has proven otherwise. Stepping through the gates of his parks, guests of every age are transported to a reality seeming only to exist in storybooks.

Disney World consists of four main parks — the Magic Kingdom, Hollywood Studios, Epcot, and the Animal Kingdom. Each park features a mix of thrill rides, character experiences, dining for tastes, and seasonal festivities.

Magic to Do

Although Disney World may seem to reign supreme (see Disney Decoded on page 41), one of the largest draws to the Orlando theme park scene has no relation to Disney. Located in Universal Orlando, The Wizarding World of Harry Potter welcomes millions of visitors annually. Drawing from the popularity of J.K. Rowling's adventure series, The Wizarding World transports guests to the places made famous by the writer. The Hogwarts Express transports wizards and muggles alike between Diagon Alley and Hogsmeade.

Diagon Alley, located in Universal Studios Florida, is home to the famed eatery the Leaky Cauldron, famous for its butterbeer, Olivanders where wizards can see which wand chooses their fate, and Gringotts. Arguably the most famous ride at Universal Orlando, Escape from Gringotts takes riders on a breathtaking, mind-blowing, 3D multi-dimensional journey through the vaults of the only bank in this wizarding world.

Just a train ride away, Hogsmeade is located in Universal's Islands of Adventure. Hogsmeade is home to Hogwarts, which guests can explore on Harry Potter and the Forbidden Journey, a motion-based dark ride that utilizes never-before-seen technology that transforms “the theme park experience as you know it.” In Hogsmeade, guests can also take flight with a Hippogriff, the magical creature with the head of an eagle and body of a horse or twist and loop on a high-speed, intertwining roller coaster chase on Dragon Challenge. Three Broomsticks is a rustic tavern in Hogsmeade featuring fish and chips, shepherd's pie, and turkey legs, along with family-friendly favorites like Butterbeer and pumpkin juice, or more spirited options for adults like the pub's selection of beer, wine, or specialty cocktails. Before leaving Hogsmeade, shoppers can take a piece of the magic home with a visit to specialty stores including Filch's Emporium of Confiscated Goods and the Owl Post.

(article concludes on p. 42)



There's More

In addition to all the magic Orlando is known for, guests can experience two special events during **ENDO 2017!**

EPCOT INTERNATIONAL FLOWER AND GARDEN FESTIVAL

Walt Disney World Resort guests welcome spring with a full dose of beauty. From elaborate gardens and incredible topiaries to helpful seminars and nightly musical entertainment, the festival offers an array of special activities for all green-thumb levels.

SEVEN SEAS FOOD FESTIVAL

Guests can enjoy yet another theme park, SeaWorld Orlando, and its popular music and food events, which will expand to a total of 14 weekends in 2017 as part of the all-new Seven Seas Festival. Inspired by street food from Asia, the Caribbean, South America, and the Mediterranean, this expanded festival will bring new culinary offerings to guests throughout the park. Plus, guests will be able to indulge in a variety of international, local, and seasonal craft brews on tap giving their taste buds a worldly delight.

TGIF: Check Out the **ENDO**2017 Preconference Program

Plan to arrive a day early and attend pre-conference workshops in diabetes, obesity, and thyroid, led by today's experts in the field. These workshops will hone your skills and expand your knowledge with the latest information in your specialty. All workshops are located in the Orange County Convention Center.

EndoCareers Early Career Forum

Friday, March 31, 2017 | 8:00 a.m. – 6:00 p.m.

The **ENDO 2017** Early Career Forum provides student, fellow, and postdoc members an in-depth look at career opportunities in endocrinology and the skills needed to be successful in each field.

www.endocrine.org/EndoCareers2017

Diabetes Diagnosis & Management 2017

Friday, March 31, 2017 | 9:00 a.m. – 4:30 p.m.

This workshop focuses on current issues in clinical diabetes management. The interactive program is led by expert faculty and provides state-of-the-art updates on cardiometabolic comorbidities and new treatment options. Participants engage in case discussions, hear from renowned diabetes clinicians and researchers, and join Meet-the-Professor sessions.

www.endocrine.org/DDM2017

Obesity Management 2017

Friday, March 31, 2017 | 9:00 a.m. – 5:00 p.m.

This popular workshop focuses on advanced practice challenges and highlights emerging treatment therapies and strategies for preventing, diagnosing, and managing obesity. Participants engage in case discussions, hear from experts, and join Meet-the-Professor sessions.

www.endocrine.org/ObesityMgmt2017

Hands-On Thyroid Ultrasound Workshops

For the latest advancements in thyroid imaging with a practical, hands-on approach, these workshops are all you need. Gain an introductory or advanced lesson on various diagnostic ultrasound techniques.

Introductory Hands-On Thyroid Ultrasound Workshop

Friday, March 31, 2017 | 7:30 a.m. – 1:30 p.m.

An introductory workshop designed for participants looking to begin using ultrasound in diagnosing thyroid nodules and performing ultrasound-guided fine-needle aspirations. After a series of presentations, participants move to a hands-on session where faculty will guide them through ultrasound and cytological techniques on simulated nodules.

www.endocrine.org/IntroThyroidUS

Advanced Hands-On Thyroid Ultrasound Workshop

Friday, March 31, 2017 | 7:30 a.m. – 5:15 p.m.

The advanced workshop is for physicians already performing thyroid ultrasound in their practice, or those who have participated in the Introductory Hands-On Thyroid Ultrasound Workshop in a previous year. Registration for both workshops on the same day is not permitted.

The advanced workshop focuses on the use of ultrasound for examination of the cervical lymph nodes and parathyroid adenomas. More recent advances in the diagnosis of thyroid nodules will be reviewed. Ultrasound findings will be demonstrated through ultrasound techniques.

www.endocrine.org/AdvThyroidUS



Disney Decoded

THE MAGIC KINGDOM — The Magic Kingdom is home to the iconic Cinderella's Castle. Truly capturing all things Disney, The Magic Kingdom is known for its family-friendly rides including an international trip on It's A Small World, a spin in a tea cup on The Mad Tea Party, and a flight on Dumbo the Flying Elephant. Those looking for a faster pace will love the amped up speed of Space Mountain and the thrills and spills on Splash Mountain. For those looking to meet Mickey, Minnie, or most any Disney character, it's easy to find them posing for photos and signing autographs around almost every corner at the Magic Kingdom.

HOLLYWOOD STUDIOS — Visitors take center stage in the world of television and movies at Hollywood Studios. Movie magic comes to life with live productions — A Frozen Sing-Along celebration, Fantasmic (a pyrotechnic and fireworks show), and the most popular, Jedi Training School where Star Wars fans learn the art of light saber battles and find Darth Vader and his Storm Troopers. The rides in Hollywood Studios, not for the faint of heart, include a 13-story drop on the haunted Tower of Terror and high-speed twists and turns on the Rockin' Rollercoaster.

EPCOT — The park's name, Epcot, is an acronym for Experimental Prototype Community of Tomorrow, a utopian city of the future planned by Walt Disney. This park features Future World, which consists of a variety of pavilions that explore innovative aspects of technology and science. In Future World, guests can take a spin on the Test Track — a ride that starts out slowly, but hold on for a few surprises along the way — and Spaceship Earth, a time machine adventure into history. Epcot is also home to the World Showcase, a large area reminiscent of a permanent world's fair containing 11 pavilions, each themed and dedicated to represent a specific country. Eat (and even drink!) your way around the world with special tours throughout the showcase.

ANIMAL KINGDOM — Behold the magic of nature with rare animals and world-class entertainment at Disney's Animal Kingdom. Guests enjoy up-close animal encounters with exotic animals, wander fascinating jungle trails, and even come face-to-face with dinosaurs. For those who are looking for the best rides in the park, Expedition Everest is a rollercoaster journey that does not disappoint, while Kali River Rapids twists and turns through a very wet journey!

Top to bottom: Dumbo the Flying Elephant, Splash Mountain, Jedi Training School, and Animal Kingdom courtesy of Walt Disney World. Epcot Center by James Kirkikis / Shutterstock.com.



Top to bottom: Harry Potter Universal Studios Diagon Alley by Miami2you / Shutterstock.com, Simpsons Springfield rides at Universal Orlando Resort by Kevin Kolczynski / ©2013 Universal Orlando Resort, The Orlando Eye by Robert Hoetink / Shutterstock.com.

And The Wizarding World of Harry Potter is only the beginning of what Universal Orlando has to offer. Islands of Adventure offers the perfect mix of kid-friendly rides like Dr. Suess's Carousel, and for the more daring, Dr. Doom's Fearfall. Just a stone's throw from Islands of Adventure is Universal Studios where guests can fly on a bike with E.T. in the front basket on a thrilling (but gentle) ride through the sky or fight aliens from *Men in Black* — fun for the whole family!


It is clear why Central Florida is known as the mecca of theme parks with the abundance of opportunities for both kids and kids at heart to escape the real world and experience what dreams are made of during a vacation not soon to be forgotten.

More Than Fun & Games

For travelers who want to take a different approach while visiting Orlando, there are myriad options that don't include mouse ears, roller coasters, or the crowds often associated with theme parks. Orlando is the perfect place to slow down and soak up all the Sunshine State has to offer.

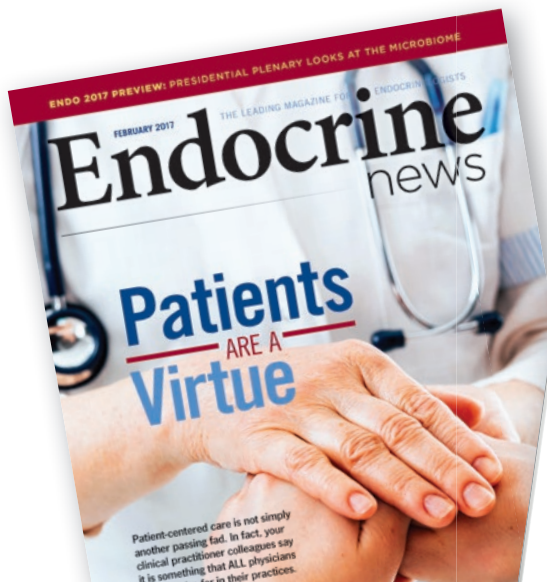
One might assume the largest collection of Tiffany glass in the world would be located in New York, but it's actually in Orlando's Charles Hosmer Morse Museum of American Art in historic Winter Park. For those looking to spend time with Mother Nature, a kayak eco-tour through mossy, cypress-lined Shingle Creek at the headwaters of the Everglades is the perfect way to enjoy the great outdoors. The Ritz-Carlton and JW Marriott at Grande Lakes offer two-hour guided tours twice daily, or experienced kayakers can venture out on their own from Shingle Creek Regional Park.

To go along with the slower pace of meandering through museums and taking in central Florida's gorgeous views, a visit to a spa is always a great way to relax and really enjoy a vacation. The luxurious, 24,000-square-foot Waldorf Astoria Spa by Guerlain at the Waldorf Astoria Orlando is known for amazing facials; Florida-fresh citrus-based treatments are a specialty at the Ritz-Carlton Spa at the Ritz-Carlton Orlando Grande Lakes; and the Poseidon Spa at the Grand Bohemian Hotel offers a heated shell massage. And golfers will delight in the abundance of options for their game. Orlando is home to the Golf Channel, Tiger Woods, and more than 170 courses, many designed by top names such as Jack Nicklaus, Tom Fazio, and Pete Dye.

ENDO 2017 is a can't miss event and registration is filling up quickly so don't delay in reserving your spot. Come join thousands of your colleagues for an educational experience that will enhance your professional development, improve your work, build your reputation, and shape the future of the field, all while enjoying a vacation not soon to be forgotten. 



COURTNEY CARSON IS A WRITER BASED IN BIRMINGHAM, ALA., WHO HAS PREVIOUSLY CONTRIBUTED TO A VARIETY OF TRAVEL AND DESTINATION PUBLICATIONS THROUGHOUT THE SOUTH, MOST NOTABLY *SOUTHERN BREEZE* MAGAZINE WHERE SHE WAS THE ASSISTANT EDITOR.



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ENDOCRINE
SOCIETY 

Hormone Scientists Head for the Mountains

BY GLENDA FAUNTLEROY



Hormone researchers from around the world will be descending on Snowmass Village, Colo., in June for the FASEB Science Research Conference focused on steroid hormone receptors. Conference co-organizer Carol Lange, PhD, tells us why endocrine scientists dedicated to this field should attend.

The Federation of American Societies for Experimental Biology (FASEB) is hosting its Science Research Conference June 11–16 in Snowmass Village, Colo. The conference, “Rapid Signaling & Genomic Hormone Action in Health & Disease” is a five-day event that will focus on nuclear and steroid hormone receptor and signaling pathway crosstalk in cancer, metabolism, neuroscience, immunology, and reproduction.

Conference co-organizer Carol Lange, PhD, a professor in the Department of Medicine and Pharmacology at the University of Minnesota, encourages researchers from all basic sciences to attend the conference and explore this expanding topic. *Endocrine News* spoke with Lange to learn more about this year’s agenda.

Endocrine News: What are the major goals of the conference and what should Endocrine Society members find most interesting?

Carol Lange: Historically, research emphasis in the field of steroid signaling has been placed primarily on nuclear, or transcriptional, effects of steroid hormone receptors (SRs). However, it is now recognized and well accepted that nuclear SRs that trigger short- and long-term changes in cellular physiology through the regulation of gene expression, also mobilize cytoplasmic signaling pathways through rapid actions initiated by plasma membrane-bound receptors. In fact, extra-nuclear, or transcription-independent SR signaling, has been shown to regulate a myriad of biological processes relevant to human health and disease.

The major aims of this conference are to: 1) highlight recent research discoveries in the context of integrated SR actions relevant to health and disease; 2) further existing research interactions and foster new, exciting partnerships that will advance knowledge and foster innovative ideas; and 3) promote the career development of young or emerging scientists and trainees to ensure the continued vibrancy of our field. We believe these activities will ultimately lead to new approaches for maintaining health and preventing or fighting SR-driven diseases including hormonally regulated cancers.

EN: Your keynote speaker is Mitchell Lazar from the University of Pennsylvania, and his address is titled “Circadian Metabolism in the Light of Evolution.” What made Lazar the best fit for the keynote address?

CL: Dr. Lazar’s research is focused on the mechanisms of circadian transcription and is highly relevant to understanding human physiology in health and in disease states as a product of the integrated action of both genetic and epigenetic gene regulation.

As our meeting topic broadly includes this concept — that rapid signal transduction events impact gene regulation (i.e., primarily by epigenetic events) — we wanted to host Dr. Lazar who is doing cutting-edge and high-impact research. Not only is he a world-renowned scientist who is likely to draw people to our meeting, we think his work fits our overarching themes very well.

Also, this meeting in the past has had a heavy emphasis on steroid hormone receptors as a subset of the nuclear receptor (NR) family members, and we wanted to expand to include a broader range of NR actions because we think similar and overlapping mechanisms are at play — all NRs interact with signaling pathways. Inviting new and diverse scientists to the meeting with

“There are likely to be some hot topics that emerge from the meeting, such as the role of collaborating or interacting nuclear and steroid hormone receptors in the regulation of metabolism as well as in cancer models.”

slightly tangential and overlapping research interests will improve our overall understanding of mechanisms of gene regulation by NRs and increase opportunities for exchange of new ideas and initiate new collaborations.


EN: Conference organizers are encouraging attendees to consider journal submissions. What research topics are currently garnering the most interest from journal editors?

CL: The journal *Steroids* has been a long-time supporter of this meeting. It has offered to support trainees to come to this meeting. We will encourage submissions to *Steroids* as we have in the past. While presenters are not obligated to submit to *Steroids*, it is a great venue for this work to appear as a collection after the meeting concludes — all aspects of rapid and integrated NR signaling are encouraged.

Having said that, there are likely to be some hot topics that emerge from the meeting, such as the role of collaborating or interacting nuclear and steroid hormone receptors in the regulation of metabolism as well as in cancer models.

EN: What else can attendees expect from the Science Research Conferences? How many scientists do you expect to gather?

CL: Our conference typically attracts between 60 and 70 attendees. And what’s important to note is that a group of this size becomes very close by week’s end. Real collaborations take place during our conferences. When you have an intimate group of researchers with common interests together for such a long period, long-term relationships are formed. I especially encourage young scientists to attend because they have a perfect opportunity to meet career mentors who will be of huge benefit to their professional growth.

We’re also looking forward to the location at Snowmass, Colo. Snowmass is a beautiful, small resort town in the mountains. It’s common for our attendees to enjoy hikes and other outdoor activities during breaks in the agenda. It’s always a very rewarding experience. 

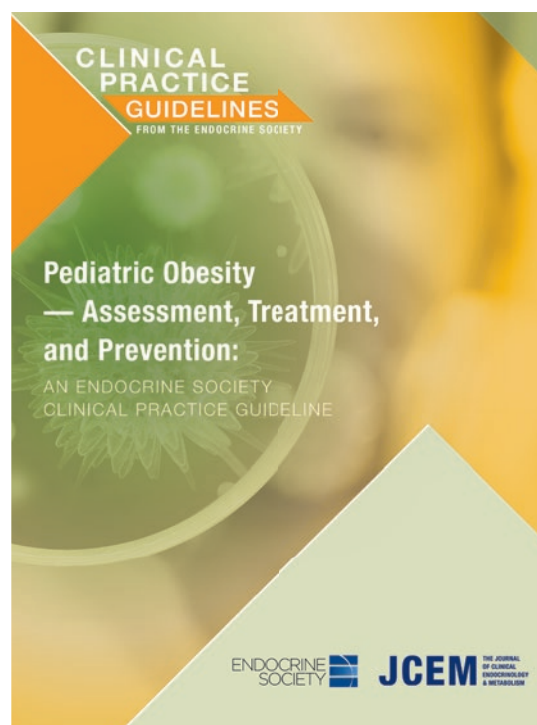
FAUNTILERoy IS A FREELANCE HEALTH WRITER BASED IN CARMEL, IND., AND A REGULAR CONTRIBUTOR TO *ENDOCRINE NEWS*. SHE WROTE ABOUT THE ISSUES SURROUNDING THE FIRST UTERUS TRANSPLANT IN THE U.S. IN THE SEPTEMBER 2016 ISSUE.

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- ▶ About 7 percent of children with extreme obesity may have rare chromosomal abnormalities or genetic mutations
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Peer-reviewed and developed by a team of experts, the Society's Clinical Practice Guidelines provide the highest quality, actionable recommendations for physicians in a clinical setting.

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Endocrine Society Opposes Revised European Commission Proposal on Criteria for EDCs; Meets with Members of Parliament March 8-9

On Wednesday, February 8, the European Commission issued revisions to its proposed criteria for the identification of endocrine-disrupting chemicals (EDCs). The proposed criteria support an extremely restrictive option, based on the World Health Organization's definition for EDCs, but with modifications that result in a very narrow definition that will prevent effective regulation of EDCs. Further, a new provision in the revised proposal further complicates regulatory activities by creating broad exemptions for chemicals that disrupt the endocrine systems of pests, such as insects and animals that attack crops. If these chemicals continue to be unregulated, it will create serious gaps in the identification criteria and create a regulatory system that does not reflect the state of the science on EDCs, causing confusion and delays in identifying EDCs that could cause harm.

The Endocrine Society has stated that the latest revisions to the criteria do not represent an improvement over previous versions, and would fail to effectively prevent harm to humans and wildlife due to exposures to EDCs. More than 1,300 studies have tied EDC exposure to health problems such as infertility, diabetes, obesity, hormone-related cancers, and neurological disorders, according to the Endocrine Society's 2015 Scientific

Statement. Because the health effects of exposure can take years or even generations to become apparent, scientists have used a variety of animal and epidemiological studies to document the effects of EDCs.

In support of effective criteria based on the state of the science on EDCs, the Society continues to work with policymakers in the EU to influence the eventual vote on the criteria. On March 8 and 9, an international group of Endocrine Society members from several EU member states traveled to Brussels for a series of bilateral meetings with EU policymakers, including members of the European Parliament. During the meetings, the Society's representatives discussed the latest science on EDCs and why the European Commission should support the Endocrine Society's recommended option for the criteria that rank EDCs in multiple categories based on available scientific evidence. This option would allow for new data to be incorporated as more studies are published.

We will continue to keep members informed of any future developments regarding the criteria. The Endocrine Society will remain involved in the ongoing debate and subsequent implementation of the criteria as applied relevant EU laws.

Endocrine Society Capitol Hill Day Advocates for NIH Funding, Special Diabetes Program & Core Principles for Health Reform



On Wednesday, March 15, members of the Society's Advocacy and Public Outreach Core Committee, Council, and Future Leaders Advancing Research in Endocrinology (FLARE) will take to Capitol Hill in Washington, D.C., to advocate for key Society legislative priorities – funding for the National Institutes of Health (NIH), continuation of the Special Diabetes Program, and core principles for health reform.

March is usually the key time when lawmakers in Washington, D.C., make funding decisions for federal agencies and programs, so this is an opportunity for the Society to influence decisions by talking about the value of endocrine-related research. Hill Day participants will share multiple perspectives with their congressional delegations. From Clifford Rosen, MD, who will talk about his career in research and the impact funding cuts will have on his laboratory and the people he works with, to FLARE fellow Joshua Joseph who is starting a career in research and worried about how funding cuts will limit opportunities and cause younger researchers to abandon the field.

Hill Day participants will talk to representatives and senators about the importance of continuing the Special Diabetes Program (SDP). The program is a special appropriation for research on the prevention and cure of type 1 diabetes that provides nearly \$150 million annually to the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The SDP consists of two initiatives: one to advance type 1 research at the NIH; and the other to fund treatment, education, and prevention programs for American Indian and Alaska Native populations who are disproportionately affected by type 2 diabetes. Since

its creation 20 years ago, the SDP has shown tangible results by helping scientists make significant advances in cure therapies, prevention studies, and treatments — including artificial pancreas technology and groundbreaking advances in vision improvement among people with diabetic eye disease. The SDP is currently set to expire on September 30, 2017. Renewal of the SDP is one of the Society's top legislative priorities, to ensure that promising SDP-funded research can continue delivering results toward better treatments, therapies, and ultimately, a cure for type 1 diabetes.

In addition to talking about research funding and the SDP, Hill Day participants will discuss the top issue on the minds of members of Congress – healthcare reform – and share the list of core principles the Society recommends be part of any health reform package:

- Ensuring access to affordable healthcare, including no life-time caps, pre-existing condition exclusions, and eligibility to remain on a parent's coverage until age 26;
- Expanding preventive health benefits;
- Creating coordinated care models; and
- Protecting women's health, including access to contraception and preventive screenings.

Hill Day will offer a great opportunity for members to develop relationships with their elected officials in Washington, D.C., help influence decision-making, and educate lawmakers about endocrinology.



Current Policy Landscape in Washington, DC is Worrisome for NIH Funding

As the Society continues to advocate for the National Institutes of Health (NIH), we are facing some potential challenges in 2017, especially as we advocate for and seek to secure robust, sustained, and predictable annual funding increases for the NIH. Some of these challenges include:

1 Congress still has not even completed spending legislation for fiscal year (FY) 2017, which began last fall (October 1, 2016). Therefore, the government is currently operating under a continuing resolution (CR) until April 28, and the concern is that we'll see a full-year CR that flat funds federal agencies, including the NIH, for FY 2017. Funding through the CR eliminates the \$2 billion funding increase for the NIH in FY 2017 that we sought and got support for from many in Congress.

2 There will likely be some strong efforts from the Trump administration and Members of Congress to reduce the amount of annual funding that is designated and available for non-defense, discretionary federal programs, such as for the NIH. For example, non-defense, discretionary spending is likely to take a significant hit if President Trump carries out his promises to boost military and veterans spending, protect Social Security and Medicare, pay for a massive infrastructure program, build a wall along the Southern border, and slash taxes for all income groups.

3 President Trump's nominee for director of the Office of Management and Budget, Congressman Mick Mulvaney (R-SC), has been very vocal about reining in government spending and reducing our national debt. In fact, when he was nominated for the position, Mulvaney said in a statement, "The Trump administration will restore budgetary and fiscal sanity back in Washington after eight years of an out-of-control, tax-and-spend financial agenda." Mulvaney is the founder of the House Freedom Caucus, the most conservative faction of House Republicans, and has consistently advocated for significant spending cuts. It is also increasingly likely that Mulvaney will very soon become the next White House budget director. ^{EN}

TAKE ACTION: With these challenges in mind, it is critical that members of Congress hear from all of their constituents who are researchers about the need to fund the NIH. Please take a moment to join the Society's online advocacy campaign urging Congress to increase NIH funding. Visit www.endocrine.org/advocacy. You only need to provide your address and our software will provide you with a letter and connect you with your representative and senators' offices. This will take a minute of your time, but will make a difference.

Bring your family to the Beach and call it Home!

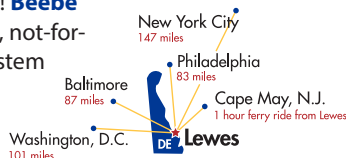


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- Margaret H. Rollins School of Nursing

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Endocrinologist



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- Opportunity to engage in mentoring our four endocrinology fellows, as well as internal medicine residents and medical students on rotation.

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

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POLYCYSTIC OVARY SYNDROME

WHAT YOU NEED TO KNOW

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

WHAT IS PCOS?

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

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

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

POTENTIAL PCOS CAUSES

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



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



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



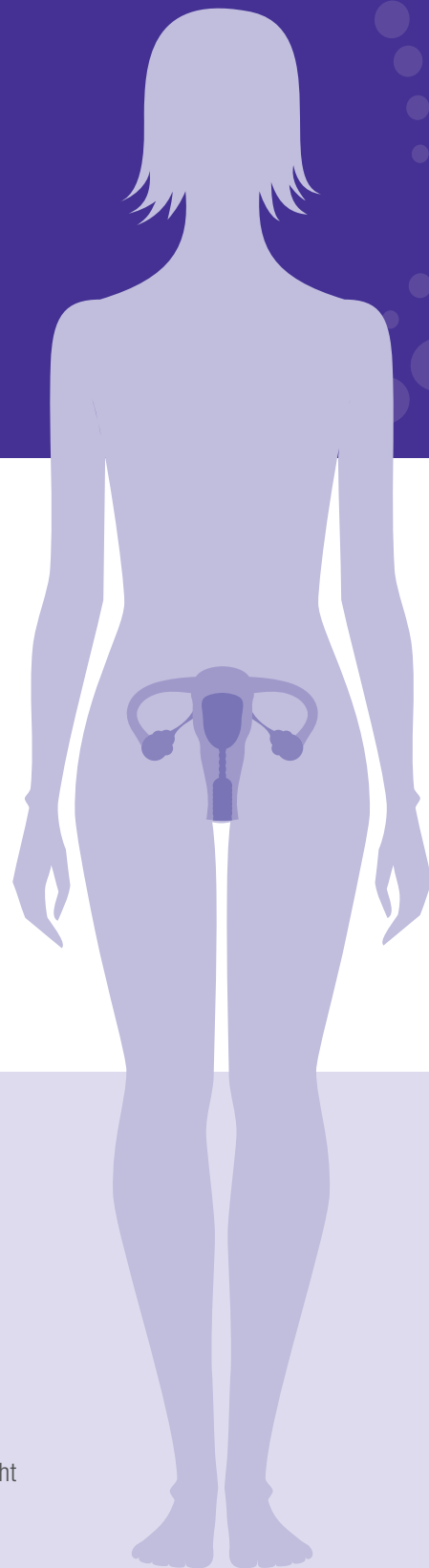
Obesity — because women and girls with PCOS are more likely to gain excess weight and women and girls who are obese are more likely to have the condition, there is a tight, but not absolute, link between the two.

Visit hormone.org for more information.

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



Hormone Health
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PCOS CAN AFFECT A WOMAN'S:

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

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

DID YOU KNOW?

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

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

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

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

Pregnant women with PCOS appear to have higher rates of:

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

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

TREATMENT

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

5 STEPS TO LIVING BETTER WITH PCOS

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



Patients have questions. We have answers.

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



Hormone Health
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Registration ends: October 11, 2017

Fee for Established scientists: \$25

Fee for Students and Fellows: \$10

<http://championfund.org>

Keynote Speaker: Haifan Lin

Plenary Speakers: Janice Bailey, Tracy Bale, Blanche Capel, Matthew Coward, Tony De Falco, Jannette Defour, Chris Geyer, Marty Matzuk, Debra Wolgemuth



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