

FEBRUARY 2020

THE LEADING MAGAZINE FOR • ENDOCRINOLOGISTS

Endocrine news

Where There's Smoke...

A Startling Look at Vaping & Pregnant Women

For decades, moms to be understood that cigarettes could harm their unborn children, but what about e-cigarettes? A new study from the *Journal of the Endocrine Society* sheds new light on just how dangerous vaping can be to the unborn.

STATINS & DIABETES:

Do the risks outweigh the benefits of taking statins?

LAB NOTES Q&A:

How 2020 Laureate Donald McDonnell, PhD, found his research niche.

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Hormone Science to Health

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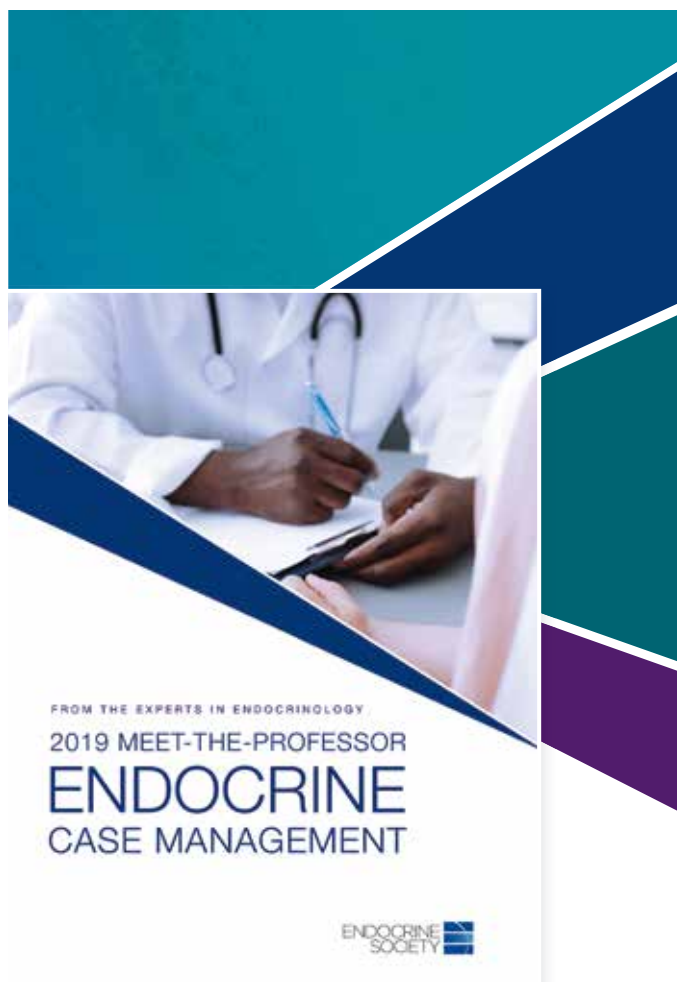
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A Host of New Features Await ENDO 2020 Attendees

ENDO 2020 is just a few weeks away, and we are excited to greet many of you in the City by the Bay for an outstanding conference experience. ENDO continues to be the Society's largest, most visible activity and reflects the breadth, depth, and diversity of endocrine research and clinical practice. As the global leader for endocrinology, we recognize not everyone can participate in-person, so new this year, we will be bringing parts of the conference to you, *via a live-stream digital format*. Be sure to tune in!

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We are confident that immersion in new ideas and meeting new people during ENDO will reenergize and fuel your passion for endocrinology.

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Carolyn Smith, PhD, and her outstanding team of co-chairs and Annual Meeting Steering Committee members have designed a robust program for ENDO 2020 — which will be held in San Francisco, Calif., March 28 — 31. I applaud them for flexing beyond scientific and clinical breakthroughs and intentionally creating an environment that stimulates curiosity, transfers new knowledge and skills, promotes networking while providing many opportunities to connect with friends and meet new colleagues. We are confident that immersion in new ideas and meeting new people during ENDO will reenergize and fuel your passion for endocrinology.

ENDO 2020 attendees can look forward to:

- ▶ Celebrating 25 years of diversity in our field with special events and sessions to reflect on the progress we have

made and identify ways to continue advancing diversity and inclusion;

- ▶ An outstanding Presidential Plenary with Atul Butte, MD, PhD, as he discusses how harnessing the power of “big data” can drive healthcare decisions, healthcare policy, and strategy, while Griffin Rogers, MD, MACP, shares opportunities for leveraging big data in the laboratory, as well as his perspective on the challenges that remain to be overcome and the strategic vision for the future of NIH research for endocrinology and diabetes;
- ▶ A plenary featuring two Nobel Laureates (Robert Lefkowitz and Brian Kobilka) speaking on advancements in G-protein receptor signaling;
- ▶ Expanding the highly popular Basic Science Pathways to include diabetes and metabolism. These focused learning tracks — focusing on neuroendocrinology, nuclear receptors and gene regulation, and reproductive endocrinology — allow you to easily network with colleagues with similar interests;
- ▶ More than 2,200 abstracts serving as your gateway to late-breaking endocrine science and medicine. New this year, the Endocrine Society is also offering \$1,500 travel awards to junior faculty with high-scoring abstracts;
- ▶ Two “mastery pathways” focused on adrenal and pituitary diseases, led by Mark Molitch, MD; James Findling, MD; and Maralyn Druce, MA, FRCP, PhD. If you are interested in focused immersion in a clinical area to increase your competence and knowledge base with in-depth and defined learning outcomes, sign-up now as slots are limited;
- ▶ All new, highly interactive Meet-the-Professor sessions, Clinical Practice Guideline presentations, and innovative symposia, all developed with your learning in mind;


- World-class, career-shaping information and leadership development for our clinical and basic science trainees, as well as a Career Fair to help you network with potential employers;

“

ENDO continues to be the Society's largest, most visible activity and reflects the breadth, depth, and diversity of endocrine research and clinical practice.

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- Meet-the-Scientist sessions tailored to key topics in endocrine investigation, such as examining chromatin landscapes and a bench-to-bedside discussion about paving the way for promising therapies to move from the lab to full clinical use; and
- Live sessions of thought leaders at plenaries, Laureates receiving their awards, and much more that will be streamed to you in the convenience of your home or office.

ENDO 2020 provides an opportunity for our community to converge in a vibrant city and propel our personal and professional journeys forward. Mark your calendars to join me in San Francisco, Calif., from March 28 to 31, 2020. If you have any questions or comments, please contact me at president@endocrine.org. 

E. Dale Abel, MB, BS, DPhil, MD, PhD
President, Endocrine Society

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FROM THE **EDITOR**

FEBRUARY 2020

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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.

Something for Everyone: Vaping, Statins, and Entrepreneurs

This month's cover story takes a closer look at the latest nasty habit that's been in the news: e-cigarettes. Or, as the habit is more commonly known, vaping. Specifically, vaping and its effects on the offspring of pregnant vapers. While the harms from drinking and smoking cigarettes during pregnancy have been long known, what, if any, harm may be caused by vaping has been the subject of ongoing debate.



Hopefully this month's cover story, "Burning Questions" by Kelly Horvath on page 22, will answer many questions. Based on a mouse study that was published in the *Journal of the Endocrine Society*, like regular tobacco and tar-laden cigarettes, vaping can be just as harmful to the offspring of vaping moms to be. Then again, maybe it should be obvious since inhaling chemicals will have effects on body organs, as Kathleen M. Caron, PhD, professor and chair, Department of Cell Biology and Physiology, University of North Carolina, Chapel Hill, N.C., who led the study put it, adding, "indeed, some of the pathways that we identified are important for reproduction, yet teenage girls are probably not thinking about this now. But I do think that is an important message — that inhaling untested chemical formulations is a dangerous thing to do and can have long-term effects."

From one media hot button issue to another, we also have a feature by Eric Seaborg ("Statins and Diabetes: How Big Is the Risk?" p. 18) that touches on the mild media frenzy over the purported link between statins and diabetes.

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There had been reports about the possibility that people who took statins could be at a higher risk for new-onset diabetes. This all came about after the U.S. Food and Drug Administration added a warning to statin labels stating that the drugs could increase fasting blood sugar and A1C levels along with the published results of the randomized JUPITER trial, which found a 27% increased risk of diabetes.

However, those findings did not differ significantly from previous studies and should not affect statin use, according to the experts quoted in the article. Essentially, regardless of the risk, statins are much more beneficial than harmful to the patients who need them. But all agree that communication is key when prescribing a statin: “If somebody needs a statin, it is always a discussion with the patient. You’ve got to talk with patients because there is so much out there, especially on the internet,” says Savitha Subramanian, MD, associate professor of medicine, Division of Metabolism, Endocrinology, and Nutrition, University of Washington, Seattle. “People have a lot of opinions, and unfortunately, statins have come under so much flak, even though they are so beneficial.”





In preparation for **ENDO 2020** next month in San Francisco, senior editor Derek Bagley looked into one of the sessions that will be of interest to any endocrinologist — regardless of age — who may be at a crossroads in his or her career. “Industrial Revelations” on page 28 discusses the **ENDO** session “Entrepreneurship and Industry in Endocrinology,” which details the various options available to endocrinologists who might possess an entrepreneurial spirit and have been considering using their endocrine expertise in the business world. “In 2020, entrepreneurship is becoming part of the lives of every endocrinologist who is interested in advancing their field and reaching more patients, providers, and researchers,” according to Stephen Hammes, MD, PhD, Louis S. Wolk Distinguished Professor of Medicine, chief, Division of Endocrinology and Metabolism, University of Rochester Medical Center, Rochester, N.Y., who served as the faculty organizer of this year’s sessions. “These opportunities extend beyond physicians — there are terrific opportunities for PhD researchers, inventors, and health administrators who want to improve endocrine care at a greater level.”

As usual, if you have your own treatment or research stories to share with the readers of *Endocrine News*, feel free to contact me at mnewman@endocrine.org. 

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

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MOST VIEWED SESSIONS FROM ENDO 2019

- 1** Pharmacological Management of Osteoporosis in Post-Menopausal Women: An Endocrine Society Clinical Practice Guideline 
- 2** Presidential Plenary: Whole Genome Approaches to Unraveling Diseases 
- 3** Update on Clinical Assay Issues: What Clinicians Should Know 
- 4** Treatment of Diabetes in Older Adults: An Endocrine Society Clinical Practice Guideline 
- 5** Congenital Adrenal Hyperplasia Due to Steroid 21-hydroxylase Deficiency: An Endocrine Society Clinical Practice Guideline 

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Endocrine Society Awards Baxter Prize to Daniel J. Drucker, MD



Researcher Daniel J. Drucker, MD, has been awarded the Endocrine Society's John D. Baxter Prize for Entrepreneurship for his contributions to diabetes treatment, the Society announced last month.

Drucker's research has contributed greatly to the understanding and treatment of diabetes over the past 25 years. He discovered new mechanisms of hormone action enabling the development of drugs for patients with type 2 diabetes that simplify treatment and reduce the risk of hypoglycemia. Some of these agents have recently been shown to reduce many cardiovascular complications of diabetes. He also discovered the actions of GLP-2 and developed the only therapy for patients with chronic short bowel syndrome, a rare and challenging condition that can lead to severe malnutrition and death.

Drucker will receive the Baxter Prize at **ENDO 2020** next month in San Francisco. The \$50,000 prize is awarded biennially to recognize scientists or healthcare practitioners who have demonstrated entrepreneurship by leveraging endocrine research to improve patient care. This is the second time the Society has awarded the Baxter Prize.

"Dan Drucker's seminal work has profoundly shaped the current landscape of diabetes therapies, which are now impacting the lives of millions of patients with diabetes. Second, effective treatment for short-gut syndrome has improved the lives of thousands of patients with this condition" says Endocrine Society President E. Dale Abel, MD, PhD, of the University of Iowa, Carver College of Medicine, Iowa City, Iowa. "It is important to not underestimate the impact of his pioneering work that has led to the development of two whole new classes of diabetes therapies that have improved the quality of patients' lives, reduced side effects and some of which importantly have been shown to prevent major cardiovascular complications such as heart attacks and strokes. We are thrilled to honor his numerous achievements."

Drucker is currently a professor of medicine at the Lunenfeld Tanenbaum Research Institute of Mt. Sinai Hospital and the University of Toronto in Toronto, Canada. Drucker's laboratory studies the molecular biology and physiology of gut hormones, with a focus on the glucagon-like peptides. Drucker's scientific studies have identified multiple novel mechanisms of hormone action, enabling the development of new drug classes for diabetes, obesity, and intestinal failure.

Currently the editor-in-chief of *Endocrine Reviews*, Drucker is a Fellow of the Royal Society, London. Drucker's discoveries have been recognized by numerous scientific and medical societies. He has been honored with the Endocrine Society's Clinical Investigator Award, the American Diabetes Association's Banting Award, the Claude Bernard Award from the European Foundation for the Study of Diabetes, the Manpei Suzuki International Prize, the Rolf Luft Award from the Karolinska Institute, and the Harrington Prize for Innovation in Medicine.

"I'm honored to be recognized by the Endocrine Society, and my success wouldn't have been possible without the support of my mentors and teammates," Drucker says. "I became an entrepreneur because of my passion for endocrine discovery and the potential to save lives by developing novel therapies. I am grateful for the prize, which will support my ongoing work and young investigators just setting out on the path of translational research."

The Baxter Prize was established in memory of Endocrine Society Past-President John D. Baxter, MD, who was a world-renowned scientist known for being the first to clone the human growth hormone gene. During his career, he made many fundamental medical discoveries and translated them into clinical therapies that had far-reaching implications in the fields of biotechnology and genetic engineering, benefiting the health and welfare of patients worldwide. He passed away in 2011. The Baxter family endowed the prize in his memory.



Carol H. Wysham, MD, Elected 2021 – 2022 Society President

Endocrine Society members have elected Carol H. Wysham, MD, to serve as president for the 2021 – 2022 term.

Wysham, an endocrinologist at Rockwood/MultiCare Health Systems in Spokane, Wash., and clinical professor of medicine at the University of Washington, will serve as president-elect for a year beginning in March 2020 before becoming president in April 2021.

Wysham's research and clinical work focuses on preventing and managing cardiovascular complications in individuals with diabetes. She served as a member of the Society's leadership Council — the forerunner to the Board of Directors — and chaired the Annual Meeting Steering Committee that organized **ENDO 2016**.

The Society also selected five members to join its Board of Directors beginning in March 2020. The new Board members are:

- ▶ Richard J. Auchus, MD, PhD – Board At Large
- ▶ Ruth A. Keri, PhD – Board At Large
- ▶ Kathryn Ann Martin, MD – Board At Large
- ▶ John Newell-Price, MD, PhD, FRCP – Board At Large
- ▶ Lindsey S. Trevino, PhD – Early-Career Director

The new Board members will begin serving their three-year terms following **ENDO 2020**, which will take place in San Francisco, Calif., from March 28 to 31, 2020.

Auchus is the James A. Shayman and Andrea S. Kevrick Professor of Translational Medicine, Internal Medicine and Pharmacology at the University of Michigan and the endocrinology section chief at the Ann Arbor VA Medical Center in Ann Arbor, Mich. He is known for his research in steroid biochemistry and treats patients with complex adrenal disorders. He is an associate editor of the Society's basic science journal, *Endocrinology*, and has served as chair of the Nominating Committee and a member of the Research Affairs Core Committee.

Keri is professor and vice chair of pharmacology, and associate director for basic research at Case Comprehensive Cancer Center at Case Western Reserve University School of Medicine in Cleveland, Ohio. She researches breast cancer, including the disease's initiation and progression as well as therapeutic approaches for treating it. She is an associate editor of *Endocrinology* and a member of the Society's Basic Science Strategy Advisory Group. She previously served as co-chair of the Research Affairs Core Committee.

Martin is a member of the faculty of the Reproductive Endocrine Unit at Massachusetts General Hospital and assistant professor of medicine at Harvard Medical School in Boston, Mass. Her clinical interests include female infertility, menopause, and menstrual disorders. She has served as chair of the Society's Nominating Committee, Clinical Practice Guidelines Subcommittee, and Special Programs Committee.

Newell-Price is professor of endocrinology and consultant endocrinologist at the University of Sheffield in Sheffield, U.K. He researches pituitary disease, adrenal conditions, neuroendocrine tumors, and cortisol. He served as the Annual Meeting Steering Committee chair overseeing **ENDO 2018**, and he is currently a member of the Society's Clinical Guidelines Committee and Global Engagement Advisory Group.

Trevino is assistant professor at the City of Hope National Medical Center in Duarte, Calif. Her research investigates the molecular basis of how endocrine-disrupting chemicals promote the development of diseases with known disparities, including chronic liver disease and cancer. An alum of the Society's Future Leaders Advancing Research in Endocrinology (FLARE) program, she serves on the Society's Research Affairs Core Committee and Basic Science Outreach Advisory Committee.

Remembering Jean E. Rivier, PhD (1941 – 2019)



Jean Rivier was a chemist both in training and spirit, but by isolating and characterizing many then-undiscovered peptide hormones, and providing the synthetic peptide tools critical to experimental biology to study them, he became a pioneer of our modern understanding of the biological roles of peptides in regulating nearly all physiologic systems ranging from endocrinology and neuroscience, to the gut, the immune system, and beyond.

Rivier's career concluded as professor emeritus at the Salk Institute, having previously held the Dr. Frederik Paulsen Chair in Neurosciences Professor in Clayton Foundation Laboratories for Peptide Biology at the Salk. He was also the founder and president of Sentia Medical Sciences, Inc., a San Diego biotechnology company dedicated to the discovery and development of new therapeutics to treat stress-related diseases.

In 1970, he followed his wife, Catherine Rivier, to the Salk Institute in La Jolla, Calif., and joined her in the laboratory of Dr. Roger Guillemin on the quest for the isolation and characterization of the hypothalamic releasing factors. Their efforts, in concert with other members of the Guillemin lab, led to the discovery and biological characterization of the early hypothalamic releasing factors including thyrotropin-releasing hormone, gonadotropin-releasing hormone, and somatostatin, which resulted in Dr. Guillemin sharing the Nobel Prize for medicine in 1977.

In 1973, Jean, Catherine, and their long-time collaborator Wylie Vale formed the Peptide Biology Laboratory at the Salk and went on to discover and characterize multiple other new peptide hormones including corticotropin-releasing factor (CRF), urocortins 1-3, growth-hormone releasing hormone, and inhibin. In particular, after decades of searching by numerous investigators, the isolation of CRF by Jean and his colleagues in 1981 for the first time uncovered the molecule at the nexus of the central and peripheral stress response pathways with implications for mental health, gastrointestinal disease, and immunology in addition to endocrinology. Jean's pioneering use of reverse phase high pressure chromatography was a breakthrough, not only for the purification and characterization of several key factors such as CRF, but also for enabling the widespread use of solid phase synthesis of peptides and peptide analogs. Jean developed the earliest synthetic versions and analogs of these newly discovered peptides, allowing collaborators to explore their various physiologic and pathophysiologic roles.

Jean was a proud father of two children, a loving husband, and a great friend and collaborator to many of us around the world. He was a legend of the field of peptide chemistry and biology who will be sadly missed by all of us who had the pleasure and honor to know him.

R. Scott Struthers, PhD, Founder & CEO, Crinetics Pharmaceuticals, Inc., San Diego, Calif.



BY DEREK BAGLEY
Senior Editor

Older Adults with Hypothyroidism Face Elevated Risk of Death

While older adults with hypothyroidism face an elevated risk of death, individuals with subclinical hypothyroidism did not face the same risk, according to new research published in *The Journal of Clinical Endocrinology & Metabolism*.

Researchers led by Carol Chiung-Hui Peng, MD, of the University of Maryland Medical Center Midtown Campus in Baltimore, Md., and Huei-Kai Huang, MD, of Hualien Tzu Chi Hospital and Tzu Chi University in Hualien, Taiwan, point out that until now there had been no meta-analysis available to assess the association between hypothyroidism and mortality specifically among the elderly population, even though prior studies have been inconsistent. “Herein, we conducted a systemic review with meta-analysis focusing on the elderly population to determine whether hypothyroidism increases all-cause mortality as well as cardiovascular mortality,” the authors write.

“Our meta-analysis is the first to evaluate and confirm the association between hypothyroidism and mortality, specifically focusing on an older population,” Peng says.

The researchers reviewed the results of 27 published articles that included more than 1.1 million older individuals. Although hypothyroidism was associated with all-cause mortality risk, the studies did not find a higher incidence of cardiovascular mortality. Interestingly, studies published in Asia and North America were associated with increased all-cause mortality in the hypothyroid population, while those published in Europe and Oceania were not. Among individuals with hypothyroidism who were 80 years old or older, the researchers found no increased risk of all-cause or cardiovascular mortality.

“Our analysis found individuals with hypothyroidism aged 60 years or older were 26% more likely to die from all causes than individuals in the same age range who did not have the thyroid condition,” Huang says.

The mortality difference was not seen in older patients with milder forms of thyroid disease. This study provides further evidence to help guide management of hypothyroidism in older adults.

Based on their findings, the authors conclude: “This systemic review and meta-analysis showed that hypothyroidism is significantly associated with higher all-cause mortality in the elderly population, but not with cardiovascular mortality. The subgroup analyses revealed that increased all-cause mortality is merely observed in patients with overt hypothyroidism and not in those with subclinical hypothyroidism. Additionally, the pooled results also vary between studies with different designs and geographic locations. Owing to the between-study heterogeneity, these study results should be interpreted cautiously, and further prospective large-scale high-quality studies are necessary to confirm our findings.”

Findings: “In accordance with guidelines, our findings imply that individuals with subclinical hypothyroidism — those who have milder thyroid dysfunction — may not benefit from being treated with synthetic thyroid hormone,” says Kashif M. Munir, MD, associate professor in the Division of Endocrinology, Diabetes, and Nutrition at the University of Maryland School of Medicine in Baltimore, Md., and another of the study’s authors. “However, treatment should be considered in individuals diagnosed with hypothyroidism, given increased all-cause mortality.”



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Our analysis found individuals with hypothyroidism aged 60 years or older were 26% more likely to die from all causes than individuals in the same age range who did not have the thyroid condition.

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Simple
adjustments
on the CGM
alarm settings
can inform
patients about
high or low blood
sugar events
early, so they
can be ahead
of time for
treatments
when needed.
”

People with Type 1 Diabetes Still Struggle with Blood Sugar Control Despite CGM

Some continuous glucose monitoring (CGM) alarm features and settings may actually hinder better blood sugar control for people with type 1 diabetes, according to a study published in the *Journal of the Endocrine Society*.

The most common way to check blood sugar is the finger prick method. This test is done between one to six times per day and is difficult for most people. Using a CGM allows patients to check blood sugar automatically, even while they're sleeping. This frequent monitoring can lead to better outcomes when managing diabetes, but patients with type 1 still face challenges with avoiding high and low blood pressure daily.

Researchers led by Yu Kuei Lin, MD, of University of Michigan Medical School in Ann Arbor, point out that alarms generated by CGMs for pending or ongoing hypo/hyperglycemic events can cause disruptions to daily life or sleep and that patients can become overwhelmed by the amount of alarms and stop responding to them, which has been described in the literature. “However, little information exists on how CGM alarm settings are associated with the number of alarms, and whether the alarm numbers alter patients’ responses and thus affect the time duration to recover from hypo/hyperglycemia,” the authors write.



“Managing type 1 diabetes is a constant battle between high and low blood sugar levels, and many patients using CGMs continue to struggle to find a balance,” Lin says. “Our study demonstrated that some CGM alarm features and settings may achieve better blood sugar control for patients with type 1 diabetes.”

In this study, researchers examined data from 95 patients with type 1 diabetes to better understand the associations between CGM alarm settings and blood sugar levels. They found different CGM blood sugar thresholds for high and low blood sugar alarms were associated with various hypo/hyperglycemic outcomes and suggest adjustments to these thresholds could lead to better management of hypo- and hyperglycemia.

Findings: “Simple adjustments on the CGM alarm settings can inform patients about high or low blood sugar events early, so they can be ahead of time for treatments when needed,” Lin says.

The study received funding support from the NIDDK/Washington School of Medicine Diabetes Research Center, the University of Utah Diabetes and Metabolism Research Center, the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), and the National Center for Advancing Translational Sciences.

READ THIS AND OTHER ENDOCRINE SOCIETY JOURNAL ARTICLES AT
[HTTPS://ACADEMIC.OUP.COM/ENDOCRINESOCIETY](https://academic.oup.com/endoctrinesociety).

FDA Approves New Treatment of Germline BRCA-mutated Metastatic Pancreatic Cancer

The country was saddened to learn in late December that Rep. John Lewis (D-Ga.), the legendary Civil Rights activist, was being treated for stage four pancreatic cancer.

“While I am clear-eyed about the prognosis, doctors have told me that recent medical advances have made this type of cancer treatable in many cases, that treatment options are no longer as debilitating as they once were, and that I have a fighting chance,” Lewis says in a statement.

One of those medical advances was recently announced at the end of 2019 as the FDA approved olaparib for the maintenance treatment of adult patients with deleterious or suspected deleterious germline BRCA-mutated (gBRCAm) metastatic pancreatic adenocarcinoma whose disease has not progressed on at least 16 weeks of a first-line platinum-based chemotherapy regimen. AstraZeneca and Merck are marketing this new drug as LYNPARZA. Patients will be selected for therapy based on an FDA-approved companion diagnostic for LYNPARZA.

The approval follows the recommendation by the U.S. FDA Oncologic Drugs Advisory Committee on Dec. 17 for LYNPARZA in this indication and was based on results from the pivotal Phase 3 POLO trial published in the *New England Journal of Medicine* and presented at the 2019 American Society of Clinical Oncology (ASCO) Annual Meeting.

Results showed a statistically significant and clinically meaningful improvement in progression-free survival (PFS) where LYNPARZA nearly doubled the time patients with gBRCAm metastatic pancreatic cancer lived without disease progression or death to a median of 7.4 months vs. 3.8 months on placebo (HR 0.53 [95% CI 0.35-0.81] $p=0.0035$).

Hedy L. Kindler, MD, co-principal investigator of the POLO trial and professor of medicine, University of Chicago Medicine, says, “[The] approval of olaparib based on the POLO results gives clinicians an important first-line maintenance treatment option, which nearly doubled the progression-free survival benefit in patients with germline BRCA-mutated metastatic pancreatic cancer.”

The most common adverse reactions (ARs) $\geq 10\%$ were fatigue/asthenia (60%), nausea (45%), abdominal pain (34%), diarrhea (29%), anemia (27%), decreased appetite (25%), constipation (23%), vomiting (20%), back pain (19%), arthralgia (15%), rash (15%), thrombocytopenia (14%), dyspnea (13%), neutropenia (12%), nasopharyngitis (12%), dysgeusia (11%), and stomatitis (10%). The most common \geq grade 3 ARs were anemia (11%), fatigue/asthenia (5%), decreased appetite (3%), abdominal pain (2%), vomiting (1%), and arthralgia (1%). Among patients taking LYNPARZA, dose interruptions due to an adverse reaction of any grade occurred in 35%, and dose reductions due to an adverse reaction occurred in 17%. Discontinuation due to adverse reactions occurred in 6% of patients receiving LYNPARZA.

LYNPARZA is currently approved in 65 countries for the maintenance treatment of platinum-sensitive relapsed ovarian cancer, regardless of BRCA status. It is approved in the U.S., the EU, Japan, and several other countries as first-line maintenance treatment of BRCA-mutated advanced ovarian cancer following response to platinum-based chemotherapy. It is also approved in 44 countries, including the U.S. and Japan, for gBRCAm, HER2-negative metastatic breast cancer, previously treated with chemotherapy; in the EU, this includes locally advanced breast cancer. ^{EN}



“

“[The] approval of olaparib based on the POLO results gives clinicians an important first-line maintenance treatment option, which nearly doubled the progression-free survival benefit in patients with germline BRCA-mutated metastatic pancreatic cancer.

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Photo: lunamarina/Shutterstock.com

ENDO 2020

San Francisco, California

March 28 – 31, 2020

KEY DATES

ADVANCE REGISTRATION DEADLINE:

February 13, 2020

LAST CALL ABSTRACTS:

Opens January 9, 2020

HOUSING DEADLINE:

March 3, 2020

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www.endocrine.org/endo2020

Miami Thyroid Oncology Symposium

Miami, Florida

March 13 – 14, 2020

Organized by the Miami Cancer Research Center, the 4th Annual Miami Thyroid Oncology Symposium will begin with a course on the essentials of clinical genomics that aims to provide a strong foundation for practicing physicians and help them understand the evolving role of clinical molecular testing. There will be an oral/poster abstract presentation session, followed by an expert panel discussion on the first day, which will provide a platform for young physicians in training and all

academic and practicing physicians to present and discuss their research work and clinical experience.

www.miamicancerresearch.org

Clinical Endocrinology 2020

Boston, Massachusetts

March 21 – 25, 2020

Harvard Medical School has selected more than 40 faculty and outside experts to present up-to-date, evidence-based approaches to endocrine problems. This course will cover many topics including osteoporosis, diabetes, hypercholesterolemia, pituitary tumors, menopause, thyroid abnormalities,

reproductive dysfunction, and a broad spectrum of other clinical problems in endocrinology.

www.endocrinology.hmscme.com

Endocrine Fellows Series: Type 1 Diabetes Care and Management

San Francisco, California

March 24 – 26, 2020

Fellows Series: Type 1 Diabetes Care and Management is a comprehensive conference for adult and pediatric endocrine fellows interested in type 1 diabetes. A preconference event to **ENDO**, the unique and highly sought after program offers an opportunity to learn from leaders

in the field through interactive sessions, small group discussions, and hands-on learning. The curriculum provides comprehensive education not typically taught in fellowship and opportunities to connect with thought-leaders and peers.

www.endocrine.org/meetings-and-events/fellows-conferences/t1d-fellows

The 4th International Symposium on the Calcium Sensing Receptor (CaSR)

San Francisco, California

March 26 – 27, 2020

This symposium will bring together basic, translational, and clinical scientists from different disciplines who study the biochemistry, molecular biology, cell biology, physiology, and pathophysiology of the CaSR and clinical disorders of CaSR function. The program will include lectures, oral abstract presentations, poster discussion sessions, and forums for young investigators to meet senior experts.

www.ncire.org/casrsymposium2020



Photo: Dana Fleming/Shutterstock.com

American Association of Endocrine Surgeons 41st Annual Meeting

Birmingham, Alabama

April 4 – 6, 2020

The American Association of Endocrine Surgeons (AAES) 41st Annual Meeting will feature symposia on wellness, diversity and inclusion, business in surgery, interesting case presentations, and a new quick shot poster session to allow more presenters to the podium. Additionally, the AAES will again host the Advanced Endocrine Surgery Course as an opportunity to review current standards in management of complex endocrine diseases, while engaging on a personal level with nationally recognized authorities in the field.

www.endocrinesurgery.org

INTERNATIONAL ITINERARY

Groningen Pituitary and Skullbase Symposium

Groningen, Netherlands

March 4 – 6, 2020

The Groningen Pituitary and Skullbase Symposium will look into the care and cure of patients with pituitary or skullbase pathology. The conference will focus on various aspects of pituitary and skullbase diseases. A national and international faculty will be present to elucidate on radiology, radiotherapy, endocrinology, surgery, and research topics.

www.gps-symposium.com

17th Biennial Congress of the Asian Association of Endocrine Surgeons – AsAES 2020

Melbourne, Australia

March 5 – 7, 2020

AsAES 2020: Controversies in Endocrine Surgery will focus on key areas of endocrine surgery including benign and malignant thyroid disease, parathyroid disease, and management of adrenal pathology. Partnering with the Endocrine Society of Australia – ESA, the symposia will offer a combined multidisciplinary program on Day 2, which will focus on areas of combined interest to both endocrine surgeons and endocrinologists.

www.asaes.com

EMBO EMBL Symposium Inter-Organ Communication in Physiology and Disease

Heidelberg, Germany

March 15 – 18, 2020

This symposium will showcase how sophisticated genetic approaches are transforming the understanding of physiology and reveal emerging paradigms of inter-organ communication relevant to metabolic homeostasis and disease. The conference aims to provide a high visibility platform to scientists who use modern molecular genetic tools to discover inter-organ communications to illustrate how much our molecular and genetic understanding of whole-organism physiology has progressed in the past 20 years.

www.embo-embl-symposia.org

ECE 2020: 22nd European Congress of Endocrinology

Prague, Czech Republic

May 2 – 26, 2020

The European Congress of Endocrinology is the European Society of Endocrinology's premier event, attracting over 3,500 international delegates each year across the spectrum of endocrinology. The event is a showcase of the best of science and clinical practice across the fields of endocrinology and metabolism, and aims to deliver to all audiences interested in the field, whether you are an experienced consultant, a scientist, or a nurse, and whether you are well advanced in your career or just starting out.

ece2020@endocrinology.org



Studies linking statins to diabetes receive media attention but should not distract clinicians from the goal of reducing cardiovascular risk.

Statins & DIABETES:

BY ERIC SEABORG

HOW BIG IS THE RISK?



Almost eight years after the Food and Drug Administration (FDA) added a warning to statin labels about the drugs increasing fasting blood sugar and hemoglobin A1C levels — and by inference raising the risk of new-onset diabetes — a new observational study on the diabetes risk received a great deal of media attention in 2019.

The study was picked up by *Prevention* magazine and National Public Radio's People's Pharmacy and led to eye-catching headlines: "Statins may double the risk of diabetes," proclaimed medicalnewstoday.com. But the findings did not differ much from those of previous studies and should not affect statin use, experts tell *Endocrine News*.

Meanwhile, in a much lower-profile development, the American Heart Association released a scientific statement on statin safety concluding that the benefits of reducing cardiovascular risk far outweigh the risks from new-onset diabetes.

Although the relative risk of diabetes may sound large, the absolute risk is actually small. One of the randomized controlled trials that led to the FDA warning was the JUPITER (Justification for the Use of Statins in Prevention: an Intervention Trial Evaluating Rosuvastatin) trial, which found a 27% increased risk of diabetes, but that diabetes occurred in 0.6% more participants randomized to receive rosuvastatin than placebo over two years.

"You need to treat a lot of people with statins for one person to get diabetes," according to Savitha Subramanian, MD, associate professor of medicine in the Division of Metabolism, Endocrinology, and Nutrition at the University of Washington in Seattle. "Based on some of the data in the literature, if you treat a thousand people with statins, one person may get diabetes in one year."

That New Study

The new study, published in *Diabetes Metabolism Research and Reviews*, was a retrospective cohort study of individuals



“If somebody needs a statin, it is always a discussion with the patient. You’ve got to talk with patients because there is so much out there, especially on the internet. **People have a lot of opinions, and unfortunately, statins have come under so much flak, even though they are so beneficial.**”

— SAVITHA SUBRAMANIAN, MD, ASSOCIATE PROFESSOR OF MEDICINE, DIVISION OF METABOLISM, ENDOCRINOLOGY, AND NUTRITION, UNIVERSITY OF WASHINGTON, SEATTLE

enrolled in an insurance plan in the Midwest. It looked at the development of new-onset diabetes in patients who began taking statins compared with a matched control group who did not. It found that statins doubled the risk of developing diabetes, with the risk greatest among those taking statins for two years or longer. It found no differences by statin class or dose.

The study’s lead author, Victoria Zigmont, PhD, MPH, assistant professor at Southern Connecticut State University in New Haven, says that these and other findings from observational studies complement data from randomized controlled trials because they provide a window into how the drugs are being used in the real world and their effects.

Effect on Patient Perception

The study’s significance may lie less in its new data and more in the media coverage it received — reports of a “doubled risk” could lead patients to be leery of starting a statin. “If somebody needs a statin, it is always a discussion with the patient,” says Subramanian. “You’ve got to talk with patients because there is so much out there, especially on the internet. People have a lot of opinions, and unfortunately, statins have come under so much flak, even though they are so beneficial.”

The American Heart Association scientific statement provides an evidence-based foundation for counseling patients, says Connie B. Newman, MD, adjunct professor of medicine in the Division of Endocrinology, Diabetes, and Metabolism at the New York University School of Medicine in New York City. Newman chaired the expert panel that wrote the statement.

Cardiovascular diseases remain the leading cause of death in the U.S. and globally, and statins have made a significant difference. The statement notes that “the most effective statins produce a mean reduction in low-density lipoprotein cholesterol of 55% to 60%” and have had “a major impact in reducing the incidence of cardiovascular diseases ... including myocardial infarction and stroke, as well as death from cardiovascular diseases.”

Yet, the statement notes that “studies ... have reported an increase in patients stopping statins after negative media coverage and in major vascular events after stopping statin treatment.”

It notes that the risk of patients on statins developing diabetes “is largely confined to patients with multiple preexisting risk factors for diabetes mellitus. The absolute risk of statin-induced diabetes mellitus in major trials has been $\approx 0.2\%$ per year. The size of any effect in routine clinical practice will depend on the baseline risk for developing diabetes mellitus in the patient population. In addition, in patients with diabetes mellitus, the average increase in HbA1c with initiation of statin therapy is small and thus is usually of limited clinical significance.”

It concludes: “Statin therapy substantially reduces cardiovascular events in those with and without diabetes mellitus and in the latter case, several cardiovascular events are prevented for every new diagnosis of diabetes mellitus. Furthermore, when considering the increase in newly diagnosed diabetes mellitus, it is important to note that this represents a far less dramatic and threatening event than the occurrence of myocardial infarction, stroke, or cardiovascular death.”



RESOURCE

Statin Safety and Associated Adverse Events: A Scientific Statement from the American Heart Association was published in February 2019 in *Arteriosclerosis, Thrombosis, and Vascular Biology* and is available at: www.ahajournals.org/doi/full/10.1161/ATV.0000000000000073.

Diabetes Prevention

Any link between statins and diabetes should not lessen the appropriate use of statins but only reinforces the need for patients to improve their lifestyles, which benefits both cardiovascular disease and diabetes risks, Newman notes. Losing weight, improving diet, and exercising more are all steps patients should be taking, and perhaps the greater risk of diabetes could give greater urgency to intensifying lifestyle therapies. “Whenever you prescribe a statin to a patient, you should talk to them about lifestyle changes,” Newman says. “Statins are adjunct to diet in the labels. They are not meant to be prescribed without a discussion about the importance of a healthy lifestyle.”

“There is quite a bit of research that shows that when physicians engage with their patients around enrollment in programs like the Diabetes Prevention Program, and the physicians follow up with them, then patients are more successful,” Zigmont says. “If physicians are comfortable having those conversations, there is research to show that this can be very beneficial for the patients in the long run.”

With one in four Americans over the age of 40 taking a statin and an increasing number of patients developing diabetes, these conversations — and the need for healthier lifestyles — are only growing in importance. ^{EN}

SEABORG IS A FREELANCE WRITER BASED IN CHARLOTTESVILLE, VA. HE WROTE ABOUT APPROPRIATE VITAMIN D LEVELS IN THE JANUARY ISSUE.



AT A GLANCE

- ▶ Media reports on the risks of statins — including for developing diabetes — can cause patients to be anxious and even stop taking a statin.
- ▶ Statins have been shown to reduce cardiovascular events and mortality, so the risk of diabetes should not interfere with patients taking them.
- ▶ Cardiovascular disease and diabetes risk can both be reduced by lifestyle changes, so when discussing patient concerns, clinicians can emphasize the need to intensify efforts to lose weight, improve diet, and increase exercise.



BURNING QUESTIONS:



While the health risks linked to tobacco use by pregnant women have been long understood, vaping presents a new frontier. A recent mouse study from the *Journal of the Endocrine Society* appears to show that the offspring of vaping mothers could suffer ill effects.

We've known for decades about the health risks that tobacco use by a pregnant woman can pose to the fetus (as well as to herself). According to the U.S. Centers for Disease Control and Prevention (CDC), such risks include preterm birth, low birthweight, birth defects, and sudden infant death syndrome. A team of researchers from the Caron Lab at the University of North Carolina in Chapel Hill, asked the question, if tobacco is so harmful in pregnancy, are e-cigarettes that also contain nicotine really any safer?

Where There's Vapor . . .

Led by Kathleen M. Caron, PhD, professor and chair of the Department of Cell Biology and Physiology, the team performed experiments to test fertility and implantation in female mice exposed to e-cigarette vapor.

Just as they published their findings in "E-Cigarette Exposure Delays Implantation and Causes Reduced Weight Gain in Female Offspring Exposed in Utero" in the *Journal of the Endocrine Society* in early September, reports of a new pulmonary disease called e-cigarette, or

BY KELLY HORVATH

Are E-Cigarettes Safer than Traditional Cigarettes for Pregnant Women?



vaping, product use–associated lung injury (EVALI) had become widespread. As of early December 2019, 2,291 hospitalized cases of EVALI have been reported to the CDC from all 50 states, the District of Columbia, and two U.S. territories (Puerto Rico and the Virgin Islands), and at least 48 deaths have been confirmed.

It is not yet completely clear what mechanism leads to the severe lung inflammation, but researchers are continuing to investigate how vitamin E acetate, a metabolite produced by the vaping cartridges, contributes as well as how combustible material inside the device might be creating cyanide that gets inhaled.

“I think what the underlying problem is, is that these devices are not regulated by any regulatory agency,” Caron explains. “So, from vape shop to vape shop they could contain very different formulations; literally anything could be in them, in terms of toxicants and chemicals. That’s a huge problem.” According to

a fall 2019 update on the CDC’s website, “Regardless of the ongoing investigation . . . [e-cigarette], or vaping, products should never be used by youths, young adults, or women who are pregnant.”

Although the CDC and the U.S. Food and Drug Administration (FDA) have teamed up to urgently warn consumers to stop vaping, especially pregnant women, for some, the damage could already be done. Caron and team have identified some of what this damage is. “We were the first to look at the effects of e-cigarette vapors on fertility and pregnancy,” Caron says. “I’m a parent, and my kids tell me that they see middle and high school students vaping. So, we have a whole generation of young people who are not thinking about being reproductively active at this point in their lives, but they’re vaping. Might it affect their reproductive success later? We realized that these basic, fundamental studies have not been performed.”

Aside from potentially affecting future reproduction, in some parts of the world like Europe, pregnant women have been advised by their physicians to switch to e-cigarettes if they are current smokers, due at least in part to perceptions that e-cigarettes are safer than traditional cigarettes. “This recommendation is made even in the absence of basic foundational knowledge,” Caron says. “We were really concerned about that. Nobody has done a study in mice, let alone people, so we were really motivated to do this and do it quickly.”

“

I’m a parent, and my kids tell me that they see middle and high school students vaping. So, we have a whole generation of young people who are not thinking about being reproductively active at this point in their lives, but they’re vaping. Might it affect their reproductive success later? We realized that these basic, fundamental studies have not been performed.”

— KATHLEEN M. CARON, PHD, PROFESSOR AND CHAIR, DEPARTMENT OF CELL BIOLOGY AND PHYSIOLOGY, UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL



Their multipart study was conducted more than a year ago — before EVALI had even emerged. In one trial to test fertility, they exposed mice to e-cigarette aerosol consisting of nicotine plus propylene glycol and vegetable glycerin (PGVG) for three hours a day with two two-second puffs per minute. Control mice were exposed to room air. Exposure began on the first day of mating and continued five days a week for four months. They found that first pregnancy was delayed compared to that in air-exposed mice, but that subsequent litters were not delayed. The number of pups was also slightly smaller, and one vapor-exposed mouse delivered no pups at all. Researchers caution that these problems could be exacerbated depending on individual factors.

In the trial to test implantation and how e-cigarette exposure delayed pregnancy, mice were exposed five days a week for four weeks prior to mating. Five and a half days after the establishment of the copulatory plug, vapor-exposed mice did not have implantation sites. Because they were nevertheless able to maintain pregnancy, researchers determined that implantation is delayed in these mice.

Their next step was to examine the effects of e-cigarette exposure on the offspring. At eight and a half months, exposed female offspring were significantly smaller in body weight compared to their air-exposed counterparts, suggesting that in utero e-cigarette exposure results in metabolic impairments and a failure to thrive. Male offspring showed slight fertility impairment.

Cause for Pause

“Fifty years of research in all kinds of animal models and in people tells us that cigarette smoking in pregnancy has bad effects on the mother and bad effects on the offspring,” Caron says. “We found similarly that this is the case with the mice that were exposed to the e-cigarette vapors. We haven’t yet dug deep into the whys or the hows, but we felt that the findings were significant and profound enough that they needed to be published quickly.”

Her team plans to conduct additional studies with larger numbers about how e-cigarettes affect pregnancy initiation and long-term effects in offspring. “By and large, a lot of what we know about human reproduction comes from the mouse,” she explains, “so, while we can’t predict with certainty that what we found in the mouse would happen in a human, there’s a strong chance that these things will be correlated in humans as well. There’s certainly enough evidence here and strong enough trends to suggest that we should be looking at this more carefully.”

In addition, their study investigated a simple formulation of nicotine and PGVG (as opposed to any added flavors) and whether, when combusted and inhaled, it can have toxic effects. Their study does not distinguish whether these effects were

AT A GLANCE

- ▶ In female mice, e-cigarette exposure delayed first-time pregnancy and may have affected fetal survival.
- ▶ E-cigarette exposure in mating mice caused a delay in embryo attachment.
- ▶ Female offspring exposed to e-cigarettes in utero failed to grow to normal size at age 8.5 months.

“

Inhaling chemicals will have effects on body organs; indeed, some of the pathways that we identified are important for reproduction, yet teenage girls are probably not thinking about this now. **But I do think that is an important message — that inhaling untested chemical formulations is a dangerous thing to do and can have long-term effects.”**

— KATHLEEN M. CARON, PHD, PROFESSOR AND CHAIR, DEPARTMENT OF CELL BIOLOGY AND PHYSIOLOGY, UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL

due to nicotine or to PGVG. They are currently looking more closely into differentiating these effects in the lab.

With the emergence of EVALI and her study coinciding in a perfect storm of warning, Caron hopes we all take a step back and do a better job of educating young people about vaping. E-cigarette companies have come under fire recently for seeming to market to youth with their special flavors, particularly mint, which is the most popular flavor among middle and high school students. (However, as of this writing, the FDA is expected to ban all flavorings except tobacco and menthol due to both the meteoric rise in teenage vaping and to potential dangers associated with the flavored compounds themselves as they are heated and aerosolized.)

“Inhaling chemicals will have effects on body organs; indeed, some of the pathways that we identified are important for reproduction, yet teenage girls are probably not thinking about this now. But I do think that is an important message — that inhaling untested chemical formulations is a dangerous thing to do and can have long-term effects,” Caron says.

She has a message for clinicians as well: Although e-cigarettes are perceived as a safer alternative during pregnancy and were originally created to help smokers wean themselves off traditional cigarettes in a “cleaner” way, we actually did not have rigorous experimental data to support our perceptions, and unforeseen harms are emerging rapidly. “The implications really do intersect with reproductive endocrinology,” she says. For now, e-cigarettes do not look like such a safe alternative, especially for young adolescents. **EN**



— HORVATH IS A FREELANCE WRITER BASED IN BALTIMORE, MD. SHE WROTE ABOUT THE TOP ENDOCRINE SCIENCE DISCOVERIES OF 2019 IN THE DECEMBER ISSUE.

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INDUSTRIAL *REVELATIONS:* *Combining Endocrinology & Industry*

A novel way to reach even more patients, clinicians, and researchers is to take your endocrinology skill into the business world. Here we highlight an **ENDO 2020** session that will show attendees how industry could be a viable route for researchers and physicians alike.

ENDO 2020
PREVIEW

BY DEREK BAGLEY



Last year, at **ENDO 2019** in New Orleans, three entrepreneurs at different stages of their careers — Alan Schneyer, PhD, chief executive officer and co-founder of Fairbanks Pharmaceuticals in Concord, Mass.; R. Scott Struthers, PhD, chief executive officer and co-founder of Crinetics Pharmaceuticals in San Diego; and W. Lee Kraus, professor and director of the Cecil H. and Ida Green Center for Reproductive Biology Sciences at the University of Texas Southwestern Medical Center in Dallas — shared their experience of going the entrepreneurial route in endocrinology, of earning their graduate degrees, and entering jobs in industry.

The program was a success, and so here at the dawn of a new decade, **ENDO 2020** in San Francisco will feature a program titled “Entrepreneurship and Industry in Endocrinology” during which attendees will again hear from endocrinologists who adopted entrepreneurship in order to not only further their careers, but better the lives of endocrinology patients the world over. Joining Schneyer and Kraus this year will be Kiersten Stead, PhD, managing partner, Data Collective, San Francisco, Calif., and Eydith Comenencia Ortiz, PhD, associate director, Genentech, San Francisco, Calif.



“In 2020, entrepreneurship is becoming part of the lives of every endocrinologist who is interested in advancing their field and reaching more patients, providers, and researchers,” says Stephen Hammes, MD, PhD, Louis S. Wolk Distinguished Professor of Medicine and chief of the Division of Endocrinology and Metabolism at the University of Rochester Medical Center in Rochester, N.Y., and faculty organizer of this year’s session. “Technology and social media are exploding and offering a myriad of new opportunities for those interested in promoting endocrine health, whether they be in private practice, industry, or academics. These opportunities extend beyond physicians — there are terrific opportunities for PhD researchers, inventors, and health administrators who want to improve endocrine care at a greater level.”

Taking a Chance

Terrific opportunities for physicians and researchers to be sure, but the fact remains that those with fresh MDs and PhDs might not think about this particular career route,



“ In 2020, entrepreneurship is becoming part of the lives of every endocrinologist who is interested in advancing their field and reaching more patients, providers, and researchers. **These opportunities extend beyond physicians — there are terrific opportunities for PhD researchers, inventors, and health administrators who want to improve endocrine care at a greater level.**”

— STEPHEN HAMMES, MD, PHD, LOUIS S. WOLK DISTINGUISHED PROFESSOR OF MEDICINE, CHIEF, DIVISION OF ENDOCRINOLOGY AND METABOLISM, UNIVERSITY OF ROCHESTER MEDICAL CENTER, ROCHESTER, N.Y.

AT A GLANCE

See it at **ENDO 2020!**

Entrepreneurship and Industry in Endocrinology

Monday, March 30, 2020, 9:15 AM – 10:45 AM

This session will discuss the various options for endocrinologists who are considering using their skills and entrepreneurial spirit in the world of industry. There will be a panel discussion followed by a coffee and networking session for all attendees.

or, if they are aware of it, might not think it's the best move. "I think the biggest question that most people have that are still in academia is that is my idea worth doing and should I take a chance on this?" says Schneyer, who is presenting again this year. "And then if I decide to do it, how do I do it?"

In the old days (prior to 2020), most endocrinologists completing graduate school might not have settled for anything less than an academic career. According to Schneyer, whether these early-career endocrinologists did eventually end up in industry, they all had academic careers in mind, even as the number of positions in those careers shrink.

But now the world has turned, and newly minted endocrinologists don't have to be daunted by the entrepreneurial spirit anymore, especially as academic positions become more and more competitive. "Since we are all very busy, we often feel that we do not have the time or bandwidth to do our day jobs and also get involved in entrepreneurship," Hammes says. "However, this is simply not true anymore. There are amazing individuals who can help us get more involved in entrepreneurship through working in teams. This allows all of us to use our particular expertise to help a team move ideas and concepts forward."

Examining Pros & Cons

Schneyer attends entrepreneurial programs across the country, where he talks to graduate students thinking about their next steps, and he says he's amazed at how many of this new generation of endocrinologists are actually considering going the industry route. "A lot of the people I meet in these entrepreneurial programs are people right out of school," he says. "They're either in graduate programs now or just finished or in a post doc. And they have come across something where they've discovered something that they and their mentors think has commercial potential. The mentor doesn't want to leave the academic department, so the student or post doc becomes the protagonist for the company."

- ▶ In 2020, entrepreneurship among endocrinologists is becoming an increasingly attractive career path, especially as academic positions become more competitive.
- ▶ Still, some early-career endocrinologists may not be aware that industry is a viable option or they may have questions about the correct decisions to make when following the entrepreneurial route, so an **ENDO 2020** session will provide attendees the opportunity to hear from experts and ask questions.
- ▶ The aim of the session is to help attendees not only to learn from experts but to network as well so they can start drafting or finalizing career plans as they enter the endocrinology workforce.



“A lot of the people I meet in these entrepreneurial programs are people right out of school. They’re either in graduate programs now or just finished or in a post doc. And they have come across something where they’ve discovered something that they and their mentors think has commercial potential. **The mentor doesn’t want to leave the academic department, so the student or post doc becomes the protagonist for the company.**”

— ALAN SCHNEYER, PHD, CEO AND CO-FOUNDER, FAIRBANKS PHARMACEUTICALS, CONCORD, MASS



Schneyer says he’s planning to focus his talk on the options available and the pros and cons of each decision. His view is that this younger generation of endocrinologists are correctly positioned for entrepreneurial careers in industry. They are more prone to take risks, to start the company they dreamed of, and not be locked into a tenure track. “Because you’re younger, you’re much more likely to be willing to take the risks and try it for a couple of years,” he says. “If it doesn’t work out, that’s okay. You don’t have kids in college that you have to worry about and all that other stuff.”

Capitalizing on Venture Capitalists

It also won’t hurt that **ENDO 2020** is being held in San Francisco, the major hub of venture capitalism in the world. “The Endocrine Society annual meeting has everything that you need,” Schneyer says. “The expo already has every major pharmaceutical company and most of the minor ones that have anything to do with endocrinology are already there. And they usually bring a sales staff, but all they have to do now is bring somebody from their external collaboration and business development group to the meeting.”

Indeed, that is the aim of this session, not only to learn from the experts but to start drafting or finalizing career plans once attendees have turned their tassels. “This entrepreneurship session being offered at the **ENDO 2020** will provide a forum where those interested in learning more about entrepreneurship can hear from a panel of experts who have all become involved in entrepreneurship in their own unique ways and have their own interesting stories to tell,” Hammes says. “There will also be opportunities for discussion and networking; thus this session will offer attendees a great introduction in what is out there for them with regard to entrepreneurship in endocrinology.”

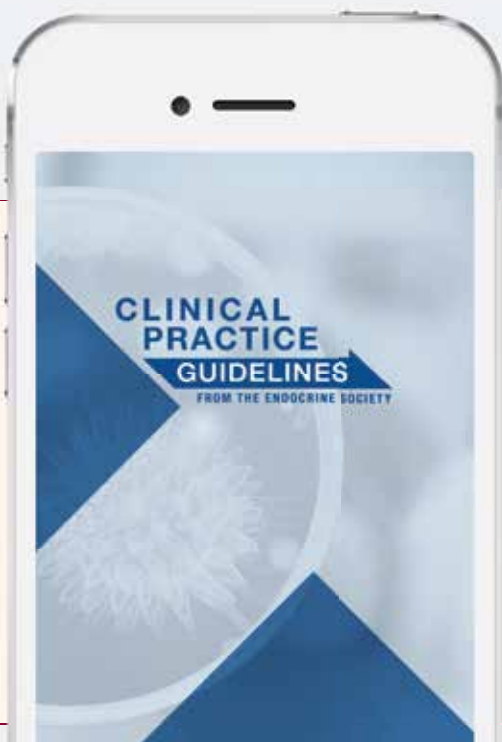
“My generation is going to be leaving and then they need to be replaced by somebody,” Schneyer says. “New members are going to come from somewhere and if the academic pool is shrinking, you’ve got to get them from somewhere else.” **EN**

— BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. HE WROTE ABOUT THYROID EYE DISEASE TREATMENTS IN THE JANUARY ISSUE.

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Budding Problems:

Essential Oils as Endocrine Disruptors



BY KELLY HORVATH

As endocrine science unlocks more secrets of endocrine disruptors, new common household items are being scrutinized for their safety. A recent study from *The Journal of Clinical Endocrinology & Metabolism* reveals how lavender oil – a staple in Hispanic culture – could possess estrogenic and antiandrogenic consequences.

In some U.S. Hispanic communities, liberal use of a certain scent, called agua de violetas, to perfume babies is common. It is so common, in fact, that it is also known as the “baby cologne,” although people of all ages are known to use it.

When prepubertal gynecomastia began occurring with relative frequency in these communities, a link was established to the lavender oil-containing agua de violetas. Lavender oil as well as tea tree oil, as is now known, stimulates estrogen receptor activities.

Coming Up Lavender

In 2007, with the understanding that prepubertal gynecomastia is both rare and pathologic as opposed to the much more common pubertal gynecomastia occurring in up to 60% of males, Kenneth S. Korach, PhD, of the National Institute of Environmental Health Sciences (NIEHS), National Institutes of Health in Research Triangle Park, N.C., and his team sought an environmental source of the estrogen that was likely to blame. From both case reports and in vitro studies, they

determined that lavender oil and tea tree oil are estrogenic and antiandrogenic, thus disrupting hormone pathway signaling when routinely applied topically, as reported in *New England Journal of Medicine*.

Their findings let people know that, just because it is “natural,” lavender oil could be the source of some negative health effects in young boys.

Price of Oil

But Korach and team had more questions in the ensuing decade. “One of the comments that I remembered about the study was that both lavender and tea tree oil are mixtures and made of a number of components. We next wanted to identify what components in the oils might be mediating these hormonal effects, either as estrogen agonists or as androgen antagonists,” Korach explains.

When postbaccalaureate Intramural Research Training Award (IRTA) fellow J. Tyler Ramsey, D.O. candidate, joined the lab at NIEHS, that’s just what he did, finding that the eight components analyzed and tested (eucalyptol, 4-terpineol, dipentene/limonene, alpha-terpineol, linalyl acetate, linalool, alpha-terpinene, and gamma-terpinene) have varying hormonal activity, but most had at least some. “For breast development, you need estrogen and/or you need something that blocks testosterone,” Ramsey says. “That’s why we looked at both of those aspects, and we were able to see that most of the components had some level of activity.”

Especially worrisome, many of these components are found in dozens of other so-called “essential oils,” that unwitting consumers assume are safe to use in everything from perfume, as mentioned, to other personal-care products like soaps, lotions, deodorants, and laundry detergents.

What About the Girls?

These mechanistic assays done in culture on cancer cells were just one part of the study Ramsey led. The other part of “Lavender Products Associated with Premature Thelarche and Prepubertal Gynecomastia: Case Reports and Endocrine-Disrupting Chemical Activities,” published in November in *The Journal of Clinical Endocrinology & Metabolism*, as the title suggests, concerns four case studies, three prepubertal girls and

one prepubertal boy showing signs of breast development and exposed to hygiene products containing lavender oil.

Until now, no one had looked at whether this endocrine disruption could affect girls, possibly because early breast growth in girls is easily mistaken for early puberty. Two clinicians, Ajanta N. Naidu, MD, of the Children's Hospital of Orange County in Irvine, Calif., and Alejandro Diaz, MD, of the Nicklaus Children's Hospital, in Miami, Fla., had noticed prepubertal thelarche in young girls using topical lavender oil products, and being familiar with the *NEJM* study, put two and two together and joined the team of investigators to determine if this lavender oil was again the culprit.

Diaz defines premature thelarche as "the development of breast tissue under the age of seven to eight years, resulting from a prior exposure to exogenous or endogenous estrogen, or to estrogenic substances." The negative effects of premature puberty include an increased risk of developing breast cancer later in life, according to epidemiologic studies.

One girl age seven years was frequently exposed to Mi Tesoro Agua de Violetas, a three-year-old girl was regularly bathed with Baby Magic Calming Baby Bath Lavender and Chamomile soap,

“A lot of people use these types of products, and it's unclear why just a small group of patients show this clinical condition. We don't want to be alarmists and tell people they should quit using these products; they just need to be aware that there could be some consequences in susceptible individuals.”

— KENNETH S. KORACH, PHD, NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES, NATIONAL INSTITUTES OF HEALTH, RESEARCH TRIANGLE PARK, N.C.



When prepubertal gynecomastia became somewhat prevalent in certain U.S. Hispanic communities, one of the common factors was the use of a baby wash known as agua de violetas.

and another seven-year-old was exposed to lavender oil through a diffuser she sat near at school. The one boy, age seven, was regularly exposed to Crusellas Violet Water cologne.

“When the children were on lavender oil, we were able to see some kind of breast development early on, and once the product was removed, it went away,” Ramsey says.

Natural Causes

Although Korach has now retired from active research, Ramsey would like to pursue an epidemiological study next. “We still are not sure if it's a genetic component or whether Hispanics use lavender oil more than other cultures,” Ramsey says. “That kind of study is a good one to do at this point to figure out if there is a correlation with a certain population or not.”

According to Diaz, premature thelarche/gynecomastia related to lavender use is observed more frequently among Hispanic populations. “This is due to the very common use of colognes and perfumes that contain this substance, often beginning during infancy. This is particularly true among persons within the Cuban or other Caribbean cultures,” he says. “It is also possible that there is a genetic predisposition to develop early thelarche/gynecomastia when exposed to lavender during early childhood. This may explain why not every child exposed to this substance develops breast tissue.”

Meanwhile, the team's findings should resonate in clinicians' day-to-day practices. “We thought that this study and the report of these cases would make clinicians, particularly pediatric endocrinologists who are going to be the type of physician mostly likely to see these patients, aware that when they cannot explain the cause of the condition, something as simple as these types of products being used by the patients could be at the root of it,” Korach says.



“With three papers on this issue, it might be warranted to add ‘are you currently using any essential oils?’ to the list. If someone were to come in with a heart problem, we would ask about their caffeine intake to see if that is a potential cause, likewise, a pediatrician should be asking about essential oils in the setting of premature thelarche or prepubertal gynecomastia.”

— J. TYLER RAMSEY, D.O. CANDIDATE, NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES, NATIONAL INSTITUTES OF HEALTH, RESEARCH TRIANGLE PARK, N.C.

“As clinicians, we are required to ask certain questions and pursue a diagnostic protocol when a patient comes in and presents with a certain symptom,” Ramsey says. “With three papers on this issue, it might be warranted to add ‘are you currently using any essential oils?’ to the list. If someone were to come in with a heart problem, we would ask about their caffeine intake to see if that is a potential cause, likewise, a pediatrician should be asking about essential oils in the setting of premature thelarche or prepubertal gynecomastia.”

Again, there’s irony in consumers believing they are making good choices in using “natural” products, but the fact is that very little research has been done on potential adverse effects. “St. John’s wort is a prime example,” Ramsey says. “That natural product was used frequently to treat depression, but when actual studies were done, its efficacy was questionable, and it has lots of other side effects. So, it’s an important question — what are these things actually doing?”

It’s also important to remember that, as Korach points out, the cadre of affected patients was quite small. “A lot of people use these types of products, and it’s unclear why just a small group of patients show this clinical condition,” he says. “We don’t want to be alarmists and tell people they should quit using these products; they just need to be aware that there could be some consequences in susceptible individuals.”

According to Diaz, most girls exposed to lavender-containing products do not develop premature thelarche. “Therefore, we cannot universally recommend avoiding use of lavender-containing products,” he says. ^{EN}

— HORVATH IS A FREELANCE WRITER BASED IN BALTIMORE, MD. SHE WROTE ABOUT THE TOP ENDOCRINE SCIENCE DISCOVERIES OF 2019 IN THE DECEMBER ISSUE.

AT A GLANCE

- ▶ Lavender oil, itself often a mixture of several components, is a component in many fragrances and personal hygiene products that has been found to have estrogenic and antiandrogenic properties.
- ▶ Three prepubertal girls and one boy with a history of continuous exposure to products containing lavender oil showed breast development that dissipated with product discontinuation.
- ▶ Genetic susceptibility may be a contributing factor, but for patients with idiopathic premature thelarche or prepubertal gynecomastia, clinicians should advise discontinuing use of essential oils to see if the condition resolves.



Mastering the Clinical Job Hunt

Finding your first job can be a challenge for early-career clinicians. Luckily, *Endocrine News* talked to some seasoned pros with advice on how to find a setting that appeals to you, your family, and your professional goals.

BY CHERYL ALKON

What's the best way to find a clinical position as an early-career endocrinologist? Flexibility, focus, and knowing what drives you and makes you happy.

"When advising someone, you're trying to understand how they see their future careers and, as much as possible, keep as many doors open along the way," says Stephen M. Rosenthal, MD, a professor of pediatrics in the Division of Pediatric Endocrinology and the medical director of the Child and Adolescent Gender Center at the University of California in San Francisco. "At the early phases of your career, you are potentially exposed to the great breadth of what endocrinology is. Given that you've made the choice of endocrinology, you have almost limitless opportunities to find out what excites you."

Know Your Choices

Clinical positions exist in academic, medical center, and private settings. Each has different attributes.

“When working in a purely private setting, there is probably more autonomy than there would be in a larger work environment regarding patient flow and hours,” says Howard B.A. Baum, MD, associate professor, Division of Diabetes, Endocrinology, and Metabolism at Vanderbilt University Medical Center in Nashville, Tenn. “There are probably fewer opportunities for teaching or research; you would have to do outreach to pharma or academic settings to make that happen.”

In an academic setting, the physician will have less responsibility for staffing, hiring and firing, purchasing, furnishing an office, while “there are typically more opportunities to interact with trainees and you can find opportunities for research,” Baum says.

For physicians working in a private setting as an employee of a hospital, “it’s sort of a blend: some administrative details are handled by someone else and you can engage in the full-time practice of medicine; though, it’s not easy to engage with trainees or research,” Baum says.

When choosing where to work, consider geography, your family’s or partner’s needs, and the merits of a particular program or location. “When you look at it, what strengths come to mind,” Rosenthal says. “I don’t think every center can be outstanding in every area. Are their strengths aligned with your interests? What is their reputation and the track record of the people on faculty there? Do they have an established mentoring program? Do they do committee work in things like professional societies? Is there a consciousness about the pipeline?”

Also, what about the money?

“For some people, finances have an influence on the choices people make,” Rosenthal says. With some carrying significant prior educational debt, cost of living and salaries can be a major factor. “Some people might really want to be in a place and say that money isn’t everything. But for others with a huge burden of debt, they need to find something that will work for them.”

Do Your Research

Once you have a sense of what you want, talk to others to find out what they offer and who they know, especially your mentors and prior graduates in your specialty, residency, and/or fellowship. They will have professional and personal contacts all over the country and may even recommend you for particular programs you are interested in, Baum says.

Talking to people a year or two ahead of her professionally was vital for Kelsi Deaver, MD, an adult endocrinologist at the Denver Endocrinology, Diabetes & Thyroid Center in Colorado. “Even if they aren’t hiring,” she says. “Doing so helped me get a lay of the land for job opportunities in my area, and eventually put me in contact with my current employer.” She also cites the importance of touring a program or employer’s location, talking to the support staff, and asking about turnover rates and noting whether people seem to be enjoying their jobs.

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—STEPHEN M. ROSENTHAL, MD, PROFESSOR
OF PEDIATRICS, DIVISION OF PEDIATRIC
ENDOCRINOLOGY; MEDICAL DIRECTOR, CHILD AND
ADOLESCENT GENDER CENTER, UNIVERSITY OF
CALIFORNIA, SAN FRANCISCO, CALIF.



Navigating Negotiations

When you've landed a new position, you'll typically receive an employment contract detailing the parameters of the job. Points typically include what your work schedule is, who determines it, how compensation will be determined, and whether there is the opportunity to benefit financially from taking on a more demanding patient schedule versus working for a flat salary, according to Baum.

Other elements may include the parameters for being named a practice partner, whether there is a buy-in element, and who would determine the value of the practice at the time of the buy-in. Deaver cites other possible benefits such as loan payback, relocation assistance, CME funds, vacation time, and 401k matching.

Additionally, find out how many patients you are expected to see in a day, whether there is protected time for patient calls or administrative work, and what support services (such as a medical assistant, scribe, nurse, ultrasound, lab/cytology tech) are available. Finally, ask whether malpractice insurance is included and if tail coverage will be provided if you change jobs.

"All of these are things a good healthcare attorney would be familiar with," Baum says. "I think an attorney should always be part of the process for any big life change, especially if it will affect your livelihood for the next several years."

To find an attorney, ask colleagues, family members, or other career connections for recommendations. "Even if something is standard in a contract, it might not be standard for you," Baum says. "Everything is negotiable."

Yet, negotiation can vary depending on the type of system you join, Deaver says, adding that large hospital groups are much less likely to alter their contracts, while a private group is more likely to do so. "I met with an attorney and found that no matter what changes he suggested, the corporation was unwilling to make adjustment to their standard contract," she says.

"You can learn more about contract negotiations and the business of medicine at websites run by the American Medical Association, the *NEJM* Career Center, and especially at conferences like the Endocrine Society," Deaver says. "I learned countless tips from these meetings and from talking with recent graduates. Stay eager, flexible, and optimistic during this challenging time!"

Ultimately, knowing your own wants and needs will serve you best. "What makes you the happiest and most productive person," Baum says. "It sounds fundamental, but even though I got messages about what to do or where to go for prestige as a young trainee, I ultimately figured it out." ^{EN}

See it at ENDO 2020!

Early-Career Forum

Friday, March 27, 2020, 7:30 AM to 5:15 PM

The Early-Career Forum is the ideal way to learn how to navigate your career in endocrinology. From sessions on how to best navigate **ENDO 2020** and personal career journeys to various career paths within clinical endocrinology settings, the Early-Career Forum is a must for postdoctoral fellows, clinical fellows, medical students, and graduate students to interact with their peers and recognized experts in the endocrine community.

— ALKON IS A MASSACHUSETTS-BASED FREELANCE WRITER WHO IS THE AUTHOR OF THE BOOK, *BALANCING PREGNANCY WITH PRE-EXISTING DIABETES: HEALTHY MOM, HEALTHY BABY*. SHE WROTE ABOUT HOW TO INSPIRE PATIENT LOYALTY IN THE JANUARY ISSUE.

Endocrine Society Hosts “Rock Stars of Research” to Educate Congressional Staff on Women’s Health Research



Teresa Woodruff, PhD; Janine Clayton, MD; Hadine Joffe, MD, MSc, served as panelists at Endocrine Society Women’s Health Research Congressional Briefing, “Rock Stars of Research: Scientists Who Are Shaping the Future of Women’s Health Care” held on January 14.

January 25, 2020 marked the second anniversary of the National Institutes of Health (NIH) policy that requires researchers to consider sex as a biological variable in basic and clinical research studies.

To recognize Women’s Health Research Day and the importance of this policy, we hosted a congressional briefing on January 14, titled “Rock Stars of Research: Scientists Who Are Shaping the Future of Women’s Health Care.” The panel included real research rock stars: Janine Clayton, MD, director of the Office of Women’s Health Research at the NIH and architect of the NIH policy to include sex and gender as a biological variable in research; Teresa Woodruff, PhD, dean and associate provost for graduate education at the Graduate School at

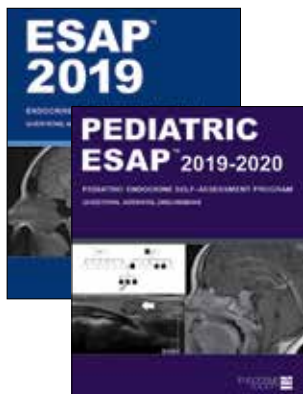
Northwestern University, past president of the Endocrine Society, and editor-in-chief of *Endocrinology*; and Endocrine Society member Hadine Joffe, MD, MSc, executive director of the Brigham and Women’s Hospital Connors Center for Women’s Health and Gender Biology and vice chair for psychiatric research at Harvard Medical School where she founded and directs the Women’s Hormones and Aging Research Program.

More than 60 congressional staff attended the standing-room-only event to learn about recent advances in women’s health research, how the NIH Office of Women’s Health Research is advancing women’s health across institutes, the policy priorities of the Society, and why it is important to consider sex as biological variable in research.

We hope that congressional staff left the briefing more committed to supporting NIH funding, more interested in women’s health research, and more excited about the future of women’s health.

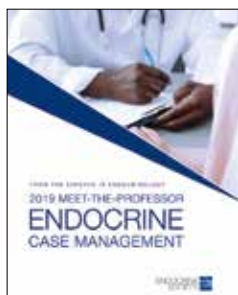
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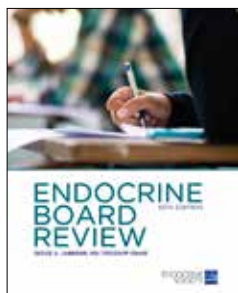
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Congress to Begin Work on FY 2021 Appropriations & NIH Funding

With the appropriations process for fiscal year (FY) 2020 finally concluded, Congress can now turn its attention to setting priorities for next year's budget. As in previous years, the Endocrine Society will advocate for appropriate funding levels for our priorities, including the National Institutes of Health (NIH).

While our track record of success in achieving increases for the NIH has been remarkable — we have had increases of \$2 – 3 billion for each of the past five years — FY 2021 presents some new challenges. The Bipartisan Budget Agreement of 2019 included increased statutory spending caps that will apply through 2021. However, the topline spending level for 2021 is essentially the same as the level enacted for 2020. Consequently, we face a difficult battle to secure another increase in funding for biomedical research and continue the progress made in the past five years to restore the NIH's purchasing power that has been lost due to years of flat funding following the high-water mark in FY 2003.

During the next several months, we will conduct meetings with congressional staff, conduct a Researcher Hill Day in Washington so our members can meet with their elected officials, discuss funding priorities with NIH, and launch online advocacy campaigns.

Society members will have numerous opportunities to take action and make an impact in the upcoming budget battles. Be on the lookout for e-mail alerts that will enable you to send targeted messages to your congressional representatives advocating for increased funding for biomedical research in 2021 during targeted periods of time. The Society will also regularly meet with members of Congress who have influence over the appropriations process to share stories of NIH research and the impact that scientific discoveries have on building knowledge and improving patient care. If you are interested in participating in some of these visits, please contact the Society's Government and Public Affairs team at advocacy@endocrine.org.

First-Ever Quality Measures Aim to Reduce Outpatient Hypoglycemia

The Endocrine Society partnered with Avalere Health to introduce the first-ever quality measures to help healthcare providers assess how well they identify and care for older adults at greater risk of hypoglycemia. A technical expert panel (TEP), led by Endocrine Society member James Rosenzweig, MD, published the quality measures, which focus on outpatient treatment for adults who are 65 and older and have type 2 diabetes, in the Society's *Journal of Clinical Endocrinology & Metabolism* (JCEM). The TEP members, which included endocrinologists, primary care physicians, diabetes care and education specialists, pharmacists, measurement experts, and patient advocates, relied on their clinical background, measure development expertise, and insight into patient perspectives to develop the measure set.

The quality measures are one component of the Society's larger initiative aimed at reducing the risk of hypoglycemia, the Hypoglycemia Prevention Initiative. The final measures, which went through a public comment period prior to finalization are:

- ▶ Proportion of Patients Who Were Assessed to be at Greater Risk for Hypoglycemia
- ▶ Educational Intervention for Patients at Greater Risk for Hypoglycemia
- ▶ Patient Reported Level 3 Hypoglycemic Event Requiring Assistance

The full manuscript and measure specifications can be found on the JCEM website and in the February 2020 print edition.



European Parliament Passes Resolution Calling for Comprehensive Action on EDCs

On January 14 the European Parliament passed a resolution in response to the European Union's "Green Deal"—a plan to invest more than €1 trillion in environmental initiatives, including important provisions to protect people from exposure to endocrine-disrupting chemicals (EDCs).

We applaud this legislative step as it includes many of the policy and action steps we have advocated. The Society has dedicated years to pressing for science-based policies to regulate EDCs, which mimic, block, or otherwise interfere with the body's hormones. Last December, Society members from seven EU member states met with policy makers in Brussels to urge action on EDCs.

Launched on December 11, the Green Deal contains a commitment to produce a chemicals strategy for sustainability by summer 2020. In addition to addressing climate change, the plan to make the economy more environmentally friendly calls for closing gaps in chemicals legislation so that the most dangerous chemicals, including EDCs, can be rapidly removed from products.

The resolution calls for policy makers to develop ambitious legislative proposals by June 2020 to address EDCs, particularly in sources of human exposure such as cosmetics, toys, and food

“
The science shows we are exposed
to a chemical cocktail including
EDCs from a variety of sources, and
we need comprehensive regulations
to address the threat.

”

packaging. Proposals need to address existing regulatory gaps in EU chemicals legislation that need to be closed and encourage the rapid substitution of hazardous chemicals with safer



Society members Evi Diamanti-Kandarakis, PhD, MD, Josef Kohrle, Niels Skakkebaek, MD, PhD, Linda Fryklund, PhD, BSc, Jenny Visser, PhD, and Remy Slama, PhD, with Elizabeth Drury outside European Parliament December 3, 2019, before meetings with policy makers about regulation of EDCs.

alternatives. The resolution also calls for the new EU framework to take into account harms due to cumulative exposures and the effects from mixtures of EDCs.

“We are pleased to see the European Parliament and Commission prioritizing a future where the public is protected from EDCs,” says Angel Nadal, PhD, chair of the Society’s EDC Advisory Group and professor at Miguel Hernández University in Elche, Spain. “The science shows we are exposed to a chemical cocktail including EDCs from a variety of sources, and we need comprehensive regulations to address the threat.”

We look forward to the Commission’s upcoming proposals for changes to the regulatory framework, which will “reflect scientific evidence on the risk posed by endocrine disruptors.” This effort will help ensure EDCs are comprehensively addressed in a harmonized approach across all sectors.

EDCs are commonly found throughout our environment in consumer products, food containers, personal care products, pesticides, and furniture. EDCs contribute to serious health problems such as diabetes, obesity, neurodevelopmental disorders, and reproductive problems. Children, unborn children, and adolescents’ developing bodies are particularly vulnerable to exposures.

A series of economic analyses found EDC exposures may be costing the EU upwards of €157 billion (\$177 billion) a year. Society experts led the effort to quantify the public health impact of EDCs on the economy.

The Endocrine Society will continue to monitor progress on legislative proposals to ensure that they are effective in minimizing exposure to EDCs

Anticipating an Ambitious 2020 Congressional Agenda, Society Will Continue Insulin Affordability, Special Diabetes Program Renewal, & Research Funding Advocacy

Congress returned to Washington from its holiday recess and set an ambitious agenda given that the election year and impeachment process will shorten the legislative window. Congress has approximately four months to sort out one of its most ambitious priorities: lowering prescription drug prices.

The year-end spending bill gave Congress until May 22 to figure out long-term funding solutions for some important programs, including the Special Diabetes Program and community health centers. Lawmakers hope they can use these less controversial “must pass” health measures as a vehicle for their more difficult goals.

However, drug pricing legislation remains gridlocked in partisan politics creating doubts about whether a compromise can be reached. We will continue to urge Congress to address insulin pricing and will keep members apprised of developments. We also will continue to advocate for a long-term renewal of the Special Diabetes Program and increased funding for biomedical research — stay tuned for future advocacy campaigns. **EN**



Q&A WITH Donald McDonnell, PhD

GLEND FAUNTLEROY SHAW



Laureate Recipient
of the 2020 Gerald
D. Aurbach Award
for Outstanding
Translational
Research, Donald
McDonnell, PhD,
discusses how he
found his research
niche, his team of
scientists, and their
quest to discover the
secrets of cancer
treatment.

Even during his undergraduate studies, Donald McDonnell, PhD, knew he wanted to help unlock the mysteries of cancer. A mentor later advised him to find “his niche” in research, and now as the professor and chair of the Department of Pharmacology and Cancer Biology at Duke University School of Medicine, McDonnell has done exactly that. His research has led to the development of novel therapeutics for treating and preventing hormonally responsive cancers, namely cancers of the breast and prostate.

This year, he is one of the Endocrine Society’s 2020 Laureate Awards winners as the recipient of the Gerald D. Aurbach Award for Outstanding Translational Research. *Endocrine News* caught up with McDonnell to learn more about what led to his discoveries.

Endocrine News: The Laureate award is named in honor of Dr. Gerald Aurbach, the Society’s 68th president and a renowned researcher and clinician. What does this award mean to you?

Donald McDonnell: One of the most impressive things about Dr. Aurbach was that he was known for his translational research. He was very much interested in fundamental aspects of endocrine action and endocrine signaling, but really as it informed his use or development of agents to treat endocrinopathies. He’s the classic example of a translational researcher, and to be recognized with this award was really a validation of the approach that we have taken to develop estrogen receptor modulators for various diseases.

EN: How did treating hormone-dependent cancers and metabolic diseases become the pinpoint of your research?

McDonnell: I always wanted to work in cancer. I started right after undergraduate school and worked through my graduate study with Dr. Bert O'Malley. He was also former president of the Endocrine Society. That's where I started getting interested in nuclear receptors, and I attribute changing directions in my career towards drug discovery to Dr. O'Malley.

When I finished my graduate studies and early post-doc work, he posed a question: "Where do you see yourself in 10 years?" I outlined a plan to him, and, in retrospect, it really wasn't very much of a departure from what I was doing at the time. He told me I really needed to find some niche for myself if I wanted to stay in the field. So, with his blessing, I did a one-year post-doc at SmithKline Pharmaceuticals in Philadelphia. That was my first introduction to drug discovery and mechanism-based discovery. And the rest is history.

I landed at Duke about 25 years ago to set up a research lab, with the goal of understanding how the cell recognizes steroid hormones and antihormones and using that information to develop new classes of receptor modulators. Most of the drugs we've developed, thus far, are for estrogen receptor-positive breast cancer although some have been evaluated as treatments for osteoporosis. I believe my group has contributed in a very significant way to the development of new drugs for the treatment of breast cancer. Several of the drugs that came out of my lab or that were based on research that came out of my lab are in clinical trials. Indeed, we have been directly involved in the development of five of the 11 ER-modulators in clinic trials, at the moment.

EN: Tell us about your research team at Duke.

McDonnell: My research team varies from between 18 and 20, depending upon funding status and time of the year. It's made up of a mix of senior scientists who have been with me for over 20 years as well as post-docs, graduate students, and research staff.


What makes Duke special for me is the geography. We're very close to the clinics, and nearly all of my projects engage clinicians who are involved in breast cancer research or clinical research. I'm also closely associated with several of the endocrinologists in the Endocrine Division of the Department of Medicine at Duke. I'm only about 200 yards away from the clinic, so it's not a big walk for me to go and find a collaborator.

“Most of the drugs we've developed, thus far, are for estrogen receptor-positive breast cancer although some have been evaluated as treatments for osteoporosis. I believe my group has contributed in a very significant way to the development of new drugs for the treatment of breast cancer. Several of the drugs that came out of my lab or that were based on research that came out of my lab are in clinical trials.”

EN: Can you explain your work that found definite links between obesity and breast cancer and how the therapy for breast cancer is impacted by obesity?

McDonnell: Work from the group of my friend, Dr. David Mangelsdorf, demonstrated that a metabolite of cholesterol, called 27-Hydroxycholesterol, could function as a selective estrogen receptor modulator (SERM) and attenuated the actions of endogenous estrogens in the cardiovascular disease. Taking a lead from his work, my team went on to show that this molecule was a biochemical link between dyslipidemia and osteoporosis and also was linked to breast cancer pathobiology. This was important as dyslipidemia is a comorbidity of obesity and our findings provided another mechanism linking obesity and breast cancer. In collaboration with Signe Borgquist (University of Lund), we showed that lowering cholesterol also reduced circulating 27HC, and studies are ongoing to examine how this new ER-ligand impacts the efficacy of endocrine therapies in breast cancer patients.

EN: What's in store for you and your team in 2020?

McDonnell: Most of the work that my group has done in developing ER-modulators has focused on their cancer cell intrinsic activities. But most cells within the tumor microenvironment express ER, and so we have embarked on a large project to define the cancer cell extrinsic actions of endocrine therapies and how they influence response to therapy. 

Top 5 Things to Know About TYPE 2 DIABETES & HEART DISEASE

Both type 2 diabetes and cardiovascular diseases can progress over many years without symptoms. In most cases, heart disease and type 2 diabetes can be prevented by changing your lifestyle and taking preventative measures. Here are the top five things to keep you and your loved ones in the know!

1

ACTIVE LIFESTYLE

Exercise is the only natural way to keep your hormones in balance. Studies show that 150 minutes per week or 30 minutes a day of moderate intensity activity—such as brisk walking—can reduce the risk of diabetes by 25-35 percent. Physical activity also lowers blood pressure and reduces the risk of hypertension and heart disease.



2

HEALTHY EATING

Prioritize foods such as vegetables, fruits, fish, low-fat dairy, and whole grains products that are rich in fiber. Eat fresh as often as possible! Limit your intake of sugar-sweetened beverages, red and processed meats, and any processed foods. The USDA and AHA recommend that sodium intake should be limited to 1,500 mg/day in people with prehypertension and hypertension.



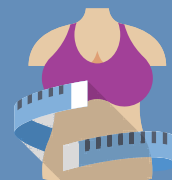
3

LOWER YOUR WAIST CIRCUMFERENCE

Having an increased waist circumference can raise your risk for type 2 diabetes and heart disease. Your physician may measure your waist circumference as a routine part of your physical exam.

Guidelines For Waist Circumference Measurement

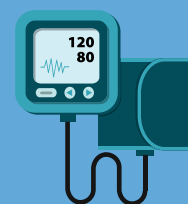
	Men	Women
Caucasian, African, Hispanic, and Native American	↓ 102 cm	↓ 88 cm
East and South Asian	↓ 90 cm	↓ 88 cm



4

MANAGE BLOOD PRESSURE

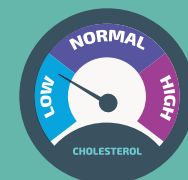
High blood pressure rates can lead to type 2 diabetes and heart disease. Normal blood pressure levels should measure below 120/80 mm Hg. If your blood pressure is higher than normal, doctors recommend making lifestyle changes, such as increasing physical activity, enhancing potassium intake, and limiting sodium in your diet, drinking alcohol in moderation.



5

KEEP CHOLESTEROL LOW

Lipids are cholesterol and other fats in the blood and tissues. Lipids are important, but if levels are too high, it can increase your risk for heart disease. High cholesterol levels cause fat deposits (plaque) to build up in the heart arteries causing arteries to narrow and harden. Fortunately, you can treat high cholesterol on your own! Doctors recommend regular exercise, eating a balanced diet, weight loss, and eliminating smoking. In some cases, doctors will recommend drugs in addition to lifestyle changes.



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EMPLOYER: University of Alabama Health Services Foundation, PC

TITLE: Clinical Assistant Professor

DUTIES: Provide patient care relating to evaluation and diagnosis of patients with endocrinology, diabetes, and metabolism disorders. Develop a plan of care, follow up as needed, and refer to other specialties as needed in an outpatient clinic and on-call service center. Participate in divisional meetings/lectures teaching medical students and fellows.

REQUIREMENTS: M.D. plus completion of three-year residency and two-year fellowship in endocrinology. Must be BC/BE in endocrinology.

SALARY: \$97,253/year

**LOCATION OF
EMPLOYMENT:** Montgomery, AL

CONTACT: Julia Embry, Manager, HR
University of Alabama Health Services Foundation, PC
John N Whitaker Building
500 22nd Street South, Suite 502
Birmingham, AL 35233

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