

AUGUST 2022

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

Endocrine news

Endocrine Science:

THE NEXT GENERATION

“Collaboration is key for moving forward in endocrine research. Through the exposure generated by this award, I hope to get in touch with fellow gestational endocrinology enthusiasts to explore learning opportunities.”

Tim Korevaar, MD, PhD,
Erasmus University Medical
Center, Rotterdam, Netherlands



“I hope that winning the Early Investigator Award from the Endocrine Society will increase my lab's research visibility, broaden our scientific connections, and help attract trainees.”

Lawrence Kazak, PhD,
McGill University,
Quebec, Canada



**The Endocrine
Society's 2022
Early Investigator
Award Winners
Look to the
Future**

“I hope this award will bring visibility to my research and interests so that I am better able to connect with other like-minded scientists. I believe the biggest research innovations come from research collaborations.”

Estelle Everett, MD, MHS,
Geffen School of Medicine
at UCLA, Los Angeles,
California



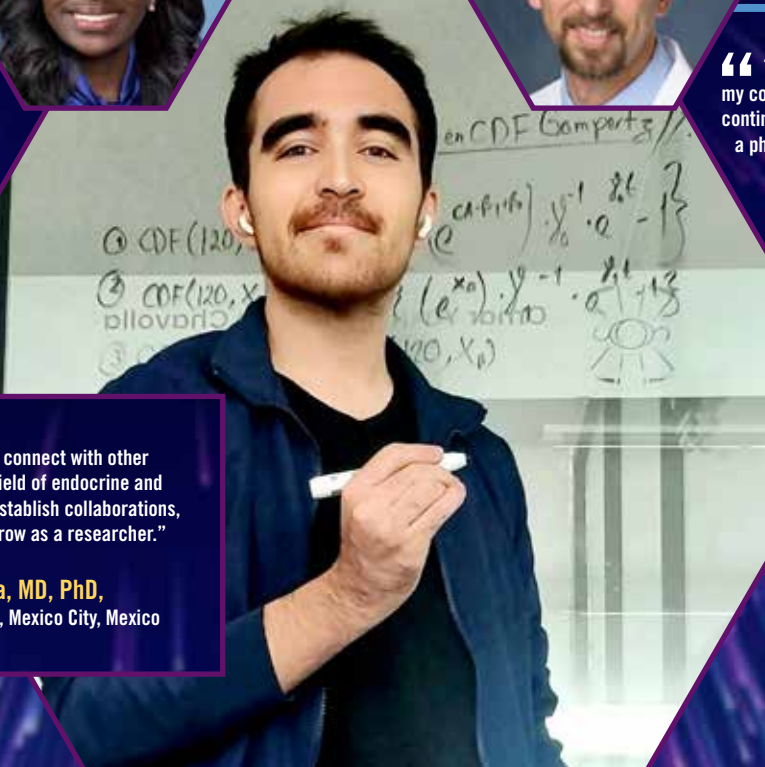
“This recognition renewed my confidence and energy to continue my research career as a physician-scientist.”

Fernando Bril, MD,
University of Alabama
at Birmingham,
Birmingham, Alabama



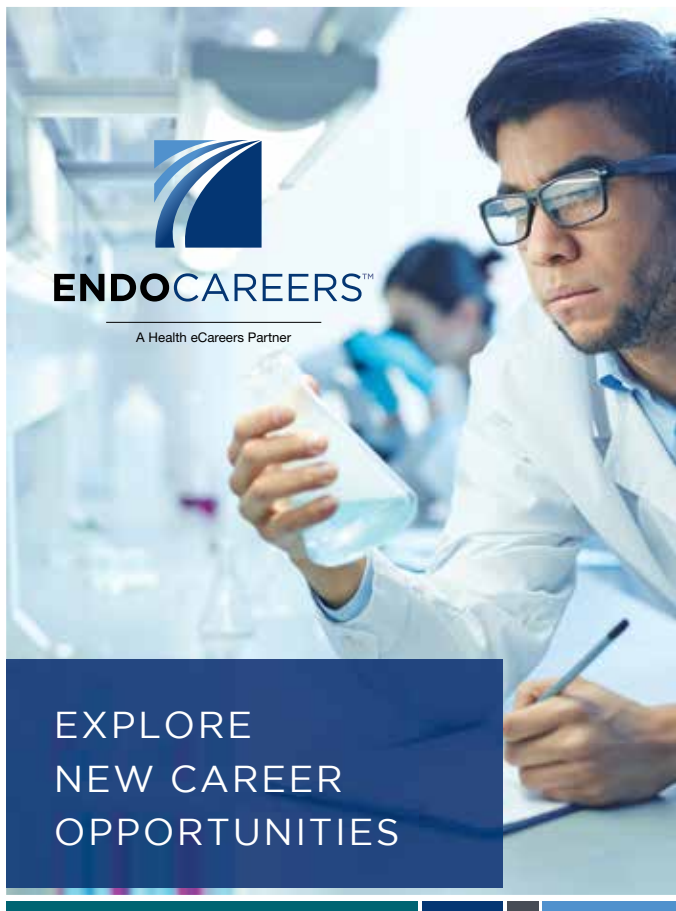
“I hope this award allows me to connect with other researchers and experts in the field of endocrine and metabolic research to be able to establish collaborations, which will also help me further grow as a researcher.”


Omar Bello-Chavolla, MD, PhD,
National Institute for Geriatrics, Mexico City, Mexico



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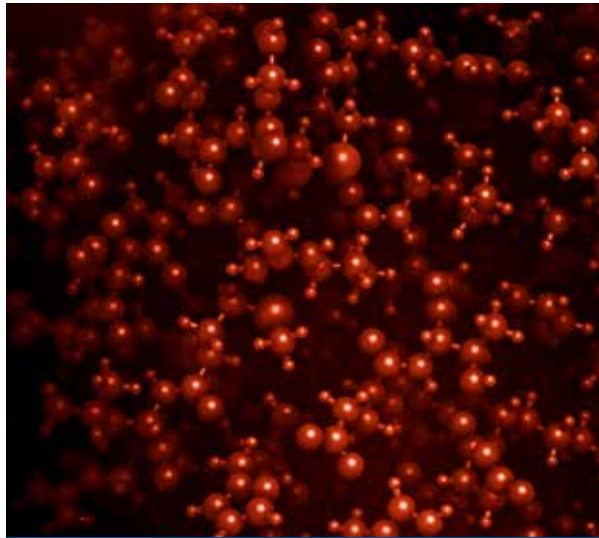
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Growth hormone clearly plays a key role in development during youth, but research in adults implicates it as an agent in cellular aging processes. Shlomo Melmed, MD, ChB, the first recipient of the Transatlantic Alliance Award, co-sponsored by the Endocrine Society and the European Society of Endocrinology, discusses the misconceptions of administering growth hormone in adults.

BY ERIC SEABORG

CEU2022
CLINICAL ENDOCRINOLOGY UPDATE

24 | Both Ends of the Spectrum Diagnosing, Examining, and Treating Hypoparathyroidism and Hyperparathyroidism Patients

Next month's Endocrine Society Clinical Endocrinology Update 2022 will be a hybrid event for the first time, but it will still offer attendees a variety of courses on the latest diagnosis and treatment recommendations for several endocrine conditions. Aliya Khan, MD, FRCP, FACP, talks to *Endocrine News* about her session, “Diagnosis and Management of Hyperparathyroidism & Hypoparathyroidism,” recent breakthroughs, what attendees can expect, and the “good news” she'll be sharing.

BY DEREK BAGLEY

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The Challenges of Diagnosing and Managing Pituitary Tumors

In two sessions focusing on pituitary tumors at next month's CEU 2022, neurosurgeon Gabriel Zada, MD, MS, FAANS, FACS, will discuss advances in new surgical techniques, inpatient and long-term management, and an in-depth overview of managing patients with pituitary adenomas. In addition, he will elucidate how health disparities can often have an even more devastating impact on those patients in underserved populations.

BY DEREK BAGLEY

34 | Researchers Roundtable: Talking to the 2022 Early Investigators Award Winners

Every year the Endocrine Society recognizes endocrinologists who are in the early stages of their research careers with the Early Investigator Awards. *Endocrine News* spoke to the five researchers from around the world to find out more about their award-winning research, the award's potential impact, as well as the biggest challenges facing them today.

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At only six years old, the death of a family friend from cancer so impacted Karel Pacak, MD, PhD, DSc, the Endocrine Society's

2022 Outstanding Clinical Investigator Laureate Award, that he decided to help “those who suffer the most — cancer patients.” *Endocrine News* talks to Pacak about his research, the renowned pheochromocytoma symposium he launched, as well as the next generation of physician-scientists.

BY GLENDA FAUNTLEROY SHAW

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Society endorses insulin affordability legislation and works with Diabetes Caucus to find votes for Senate passage while NIH funding remains in limbo; Society advocates for research funding increase; FDA reevaluates safety of BPA; and Endocrine Society responds to U.S. Supreme Court ruling overturning *Roe v. Wade*.

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For 15 years, SelectScience, an independent online resource for scientists, has been conducting its own popularity contest of the year's most lauded laboratory products. *Endocrine News* looks at some of the top contenders chosen by researchers like you from around the world.

BY COURTNEY CARSON

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Fall Meeting Lineup Delivers Networking and Education Opportunities for Researchers and Clinicians

Following on the heels of our joyous in-person reunion with many friends and colleagues at **ENDO 2022** in Atlanta, Ga., we are looking forward to many more exciting opportunities to learn and network this fall.

For our basic researchers, we are proud to bring you an intimate conference experience focused on the way stress hormones operate at the molecular and cellular level to alter physiologic function. The Mechanisms of Allostasis Conference: Stressed or Stressed Out will take place with scientific content each day from September 18 to 21 in New Orleans, La. Organized by Tracy Bale, PhD; Marc Tetel, PhD; and Kellie Church, PhD, we are co-hosting this important program on stress biology and neuroendocrinology with the Federation of American Societies for Experimental Biology (FASEB).

The Mechanisms of Allostasis Conference will feature presentations from 30 expert researchers sharing the latest science on stress and reproduction, and the effect of stress on the HPA axis, metabolism, and the gut microbiome. I am particularly pleased Liisa Galea, PhD, professor and distinguished university scholar at the University of British Columbia, will deliver the keynote lecture. Another session in honor of Robert J. Handa, PhD, will highlight the work of early-career researchers.

The meeting agenda seamlessly weaves together education and networking opportunities, a format many basic researchers prefer. Organized lunches will offer chances for attendees and speakers to discuss key scientific topics. These structured discussions will help researchers find new collaborators and mentors who share similar research interests.

For those focused on clinical care or research, we will be holding our first-ever hybrid Clinical Endocrinology Update (CEU) event in Miami, Fla., as well as the virtual Endocrine Board Review (EBR) in September. These are terrific opportunities to stay abreast of the latest advances in clinical practice and hear directly from the foremost experts in our field.

We look forward to offering clinicians opportunities to network and exchange ideas at our hybrid event, CEU 2022, on September 8 – 10. **ENDO 2022** showed us the value of meeting face to face, and we look forward to seeing those of you who are able to travel.

Whether you travel to Miami or participate online, you will be able to interact directly with esteemed faculty from across the globe in a small meeting environment. For those of you who join us virtually, we will livestream some sessions twice so you can select the time that best suits your schedule.

Our comprehensive CEU 2022 agenda is organized around nine core topics: adrenal, calcium and bone, diabetes, female reproduction, lipid and obesity, male reproduction, pituitary, thyroid, and transgender care. With three programs happening concurrently, you can pick the session that interests you most to watch live. Recordings of all the sessions will be available within 72 hours for virtual attendees.


EBR 2022 will be exclusively online for the convenience of those preparing for certification, recertification, or an intense knowledge assessment in endocrinology. Attendees will be able to prepare for the board examination with our

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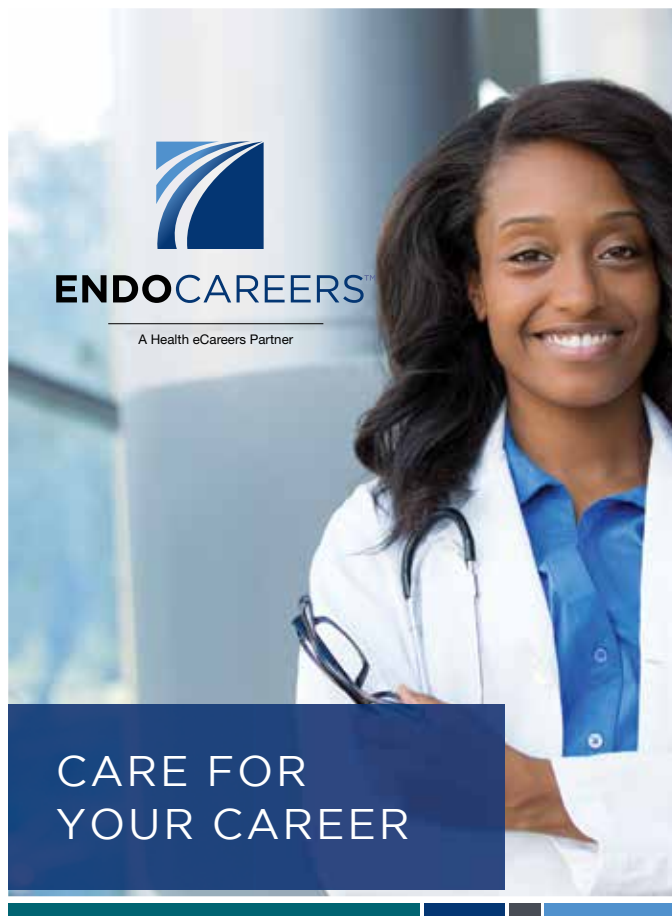
While the convenience of virtual interactions help bridge distance between members of our global community, the past two years have taught us that nothing can completely replace the importance of discussing the latest scientific and clinical advances face to face.

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Endocrine Board Review 14th Edition and on-demand, interactive mock exam. During our Topical Live Q&A Sessions on September 16 – 18, participants can maximize engagement with our esteemed faculty. The virtual sessions will offer the opportunity to interact with our presenters, ask them questions, and benefit from their expertise during these segments.

While the convenience of virtual interactions help bridge distance between members of our global community, the past two years have taught us that nothing can completely replace the importance of discussing the latest scientific and clinical advances face to face. Whether you can join us online or in-person, I hope to connect with you at one of our upcoming meetings. 

– Ursula B. Kaiser, MD
President, Endocrine Society



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FROM THE **EDITOR**

The Scientists Behind the Science

One of my favorite aspects of being the editor of *Endocrine News*, is that each month I am able to glean new insights from reading about the people who make up the Endocrine Society's membership. It's so heartening to read the stories of endocrinologists, especially the tales of their early lives or when the discussion turns to what brought them into this multifaceted and intriguing field.

And who better to tell their stories than those researchers who are still in the early stages of their careers? In **Researchers Roundtable: Talking to the 2022 Early Investigators Award Winners** on page 34, Glenda Fauntleroy Shaw speaks to the five researchers from around the world who are the recipients of the Endocrine Society's 2022 Early Investigator Award who discuss their own award-winning research as well as the award's potential impact on their careers. They also tell us about the biggest challenges facing them and other young researchers right now. According to Estelle Everett, MD, MHS, assistant professor, Geffen School of Medicine at UCLA, Los Angeles, Calif., simply navigating the research world can be especially challenging for physician-scientists who are balancing the numerous responsibilities of teaching, leadership roles, and clinical duties while also trying to develop themselves as researchers. "I found that it is critical to develop a support system of peer and more senior mentorship, from your own institution as well as outside one's institution in order to get the perspectives and guidance needed to be successful," she tells *Endocrine News*, but adds that the Endocrine Society has been tremendously helpful in this regard, "especially through programs like Future Leaders Advancing Research in Endocrinology (FLARE)."

We also get the chance to speak with Shlomo Melmed, MD, ChB, dean, faculty of medicine, Cedars-Sinai, Los Angeles, Calif., and the inaugural recipient of the Transatlantic Alliance Award, a joint award from the Endocrine Society and the European Society of Endocrinology. Melmed talks to Eric Seaborg for **An Adult Endocrine Misnomer? What Is the Role of "Growth Hormone" When You Have Stopped Growing?** on page 18, which is based on his talk he gave at both **ENDO 2022** in Atlanta in June and at the ECE 2022 conference in Milan, Italy, in May. Melmed discusses the misconceptions regarding administering growth

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hormone in adults. “We propose, based upon the body of cellular, animal, and human data that have been generated by other colleagues and ourselves, that blocking growth hormone action may protect from adverse cellular effects of aging,” Melmed tells Seaborg. “We have no evidence that aging could be reversed, but blocking growth hormone signaling could mitigate pro-proliferative cell cycle events and DNA damage associated with aging.”

For this month’s **Laboratory Notes Q&A: A Light in the Darkness** on page 40, Shaw interviewed Karel Pacak, MD, PhD, DSc, the Endocrine Society’s 2022 Outstanding Clinical Investigator Laureate Award recipient about his research, the renowned pheochromocytoma symposium he launched, as well as the next generation of physician-scientists. He also shared with *Endocrine News* an incident from his childhood that inspired him so early on. When he was only six years old, a dear family friend died from cancer and Pacak decided that he would spend his life trying to “help those who suffer the most — patients with cancer.” He then embarked on a lifetime of learning about the ways to better understand and treat cancer, and during college he “learned about biology, biochemistry, and cancer while performing experimental work at a local hospital,” he explains. “I would secretly admire the physician-scientists who made monumental clinical discoveries and paved the way for new therapeutic discoveries in cancer diagnosis and treatment.” Pacak goes on to discuss how the next generation of physician-scientists are the practice’s future and how “one day we will pass the baton to them so they can make even larger discoveries than we have made. It would be most rewarding to see a reflection of my passion to the field coming full circle through the achievements of these promising young scientists and clinicians.”

And with the Endocrine Society’s Clinical Endocrinology Update (CEU) 2022 taking place September 8 – 10 in Miami, Fla., and online, we’ve included a couple of previews to give you a look at what you can expect if you plan on attending. In **Both Ends of the Spectrum: Diagnosing, Examining, and Treating Hypoparathyroidism and Hyperparathyroidism Patients** on page 24, senior editor Derek Bagley speaks with Aliya Khan, MD, FRCP, FACP, about her session, “Diagnosis and Management of Hyperparathyroidism & Hypoparathyroidism.” In **Heads Up: The Challenges of Diagnosing and Managing**

Pituitary Tumors on page 28, neurosurgeon Gabriel Zada, MD, MS, FAANS, FACS, discusses advances in new surgical techniques, inpatient and long-term management, and an in-depth overview of managing patients with pituitary adenomas from his CEU sessions “Challenging Issues in Pituitary Neurosurgery” and “Perioperative Management of Pituitary Tumors.”

As packed as this issue of *Endocrine News* is, don’t miss the September issue, which will be entirely devoted to **ENDO 2022!** This is the first time we’ve devoted an entire issue to the annual conference, but since it was the first time we all got to gather in person (and virtually, too) in more than two years, we felt it was worth it! We think you’ll agree. 

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



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Zerihun Haile-Selassie, CAE, Named New Endocrine Society CFO

The Endocrine Society has hired Zerihun Haile-Selassie, CAE — a distinguished financial executive with more than 17 years of experience — to serve as its chief financial officer.

“I am honored to be joining the Endocrine Society, a nonprofit with a sterling reputation for responsible financial management,” Haile-Selassie says. “I am excited about the Society’s opportunities for continued long-term sustainable growth, diversified revenue, and international market expansion.”

Haile-Selassie is scheduled to start his new role on August 29.

Haile-Selassie most recently served as the chief financial officer of Inteleos, an internationally recognized medical certification organization. He previously was

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Zerihun’s extensive experience strategically positioning nonprofit organizations for long-term growth aligns with the Society’s goals.

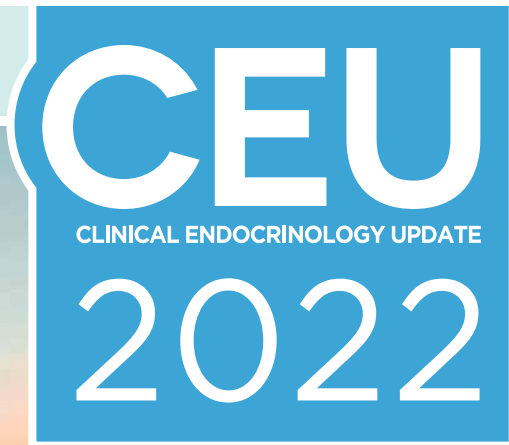
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chief operating officer and chief financial officer at ACTFL, a nonprofit language association. Earlier in his career, he was a member of the finance leadership team at the American Israel Public Affairs Committee (AIPAC).

Haile-Selassie was named a Rising Star at the Nonprofit CFO of the Year Awards in 2018.

“Zerihun’s extensive experience strategically positioning nonprofit organizations for long-term growth aligns with the Society’s goals,” CEO Kate Fryer says. “We are eager to have him join the organization.”

Haile-Selassie earned his master’s degree in accounting and information technology from the University of Maryland Global Campus and earned certification from Santa Clara University-Leavey School of Business’s Black Corporate Board Readiness program.



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Endocrine Society Journals Earn Higher Impact Factors for 2021

The Endocrine Society's journals experienced sizeable Impact Factor gains, led by *Endocrine Reviews*, according to Clarivate's recently released annual Journal Citation Report (JCR) for 2021.

A highly regarded metric used to measure the success of scholarly journals, the 2021 Impact Factor is calculated by tracking how many times articles that a journal published in 2019 and 2020 were cited by authors during 2021. The

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I am thrilled to see our journals' scores continue to climb in this year's Impact Factor report. Our ongoing success reflects the excellence and commitment of our authors, reviewers, and editors.

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number of citations is then divided by the total number of citable articles published in that journal in 2019 and 2020 to arrive at the Impact Factor.

“I am thrilled to see our journals' scores continue to climb in this year's Impact Factor report, says Bruno Ferraz-de-Souza, MD, PhD, chair of the Endocrine Society's Publications Core Committee. “Our ongoing success reflects the excellence and commitment of our authors, reviewers, and editors. In particular, I want to highlight the dedication of our editorial team led by chief publications officer Richard O'Grady, PhD,

and our fantastic past and current editors-in-chief. We are proud to publish the most innovative research in the field.”

The Society ranked fourth by average Impact Factor among 47 publishers in Clarivate's “Endocrinology & Metabolism” scientific category.

Endocrine Reviews led the Society's journals, with its Impact Factor rising to 25.261 from 19.871 in 2020. This year marks the journal's highest Impact Factor since 2001. The journal publishes bimonthly comprehensive, authoritative, and timely review articles balancing both experimental and clinical endocrinology themes.

The Society's flagship basic science journal, *Endocrinology*, increased its Impact Factor from 4.736 to 5.051. *Endocrinology*, which was founded more than 100 years ago, provides insights into the physiological and pathophysiological processes relevant to endocrine systems and endocrine-related diseases at the molecular, cellular, tissue, and organismal level of hormone function.

The Journal of Clinical Endocrinology and Metabolism (JCEM) saw its Impact Factor increase from 5.958 to 6.134. JCEM is the world's leading peer-reviewed journal for endocrine clinical research and clinical practice.

The Society's open access *Journal of the Endocrine Society*, which launched in 2017, is a candidate to receive its first Impact Factor next year.

The Society plans to launch a new open access journal, *JCEM Case Reports*, later this year. Society Past President William F. Young, Jr., MD, will serve a three-year term as the journal's inaugural editor-in-chief.

David M. Harlan, MD, Named Director, JDRF Center of Excellence in New England



Endocrine Society member David M. Harlan, MD, the William and Doris Krupp Professor of Medicine, professor of medicine, and co-director of the Diabetes Center of Excellence, has been named the new director of the JDRF Center of Excellence in New England.

For nearly 40 years, Harlan has been conducting research exploring the pathophysiology underlying diabetes. Harlan also brings years of experience as an endocrinologist with

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Our group is working to genetically modify the beta cells to make them invulnerable to the immune system when infused into a person with type 1 diabetes.

”

expertise in diabetes and metabolism. A renowned basic and clinical investigator, his current research is focused on beta cell biology and the anti-beta cell immune response.

“For decades, clinician scientists like myself have been working to develop methods to safely interfere with the autoimmune response that targets the insulin-producing beta cells in the pancreases of people with type 1 diabetes,” Harlan says. “Our group is working to genetically modify the beta cells to make them invulnerable to the immune system when infused into a person with type 1 diabetes.”

The JDRF Center of Excellence in New England is part of a growing global network of research centers aimed at accelerating science in curing T1D and improving lives. Organized as a cross-institutional collaboration among leading experts from the UMass Chan Diabetes Center of Excellence, Harvard Stem Cell Institute, Joslin Diabetes Center, Dana Farber Cancer Institute, and the Jackson Laboratory, the Center of Excellence in New England focuses on exploring immune responses and applying cell engineering technologies to prevent rejection of highly functional islets by the immune system in the absence of immune suppression.

“We’re testing these human cells in vivo in our unique biological models,” Harlan adds. “The goal is to provide an islet cell replacement therapy that eliminates the need for immunosuppressant drugs with their inherent toxicities.”



BY DEREK BAGLEY
Senior Editor



“

For all of us in endocrinology that treat patients with acromegaly, this is a really exciting option for our patients beyond what we've had in the past. It adds to our armamentarium, it's safe, it has durable effect in our patients to respond, and I think that's a really positive thing.

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TRENDS & INSIGHTS

Positive Clinical Data for Oral Treatment of Acromegaly Presented at ENDO

ENDO 2022 saw the presentation of positive clinical data from the open-label extensions (OLEs) of two of the Phase 3 trials of oral octreotide for patients with acromegaly. Amryt is marketing the drug as Mycapssa.

Data presented in a late-breaking poster presentation of the second year of the OLE of OPTIMAL (NCT03252353), a randomized, double-blind placebo-controlled (DPC) trial, further support the long-term safety and efficacy of Mycapssa in acromegaly patients who were previously biochemically controlled on monthly injectable somatostatin receptor ligands (iSRLs).

Susan L. Samson, MD, PhD, FRCPC, FACE, chair of endocrinology at the Mayo Clinic in Jacksonville, Fla., and lead investigator of the OPTIMAL study, tells *Endocrine News* that this oral formulation has provided another option for patients who already responded to injectable therapies, but as a clinician her focus was on whether her patients would have sustained success on the oral medication. “That’s what was really key about the data presented this year at ENDO 2022 was looking at an open label extension, which wasn’t just a short period of time,” she says. “This was 96 weeks. We had patients exposed to the drug for a median of two years, some patients up to three.”

Data highlights from the late-breaking poster presentation titled, “Second Year Outcomes of the Open-Label Extension of OPTIMAL, a Phase 3 Study of Oral Octreotide Capsules in Acromegaly,” include:

► Maintenance of biochemical response (defined as insulin-like growth factor I

[IGF-I] levels of less than the upper limit of normal [ULN]) to Mycapssa was durable up to 96 weeks. 100% of subjects (n= 17) who were responders at week 48 and 93% of subjects overall (n=29) demonstrated a biochemical response at week 96.

- Median exposure to Mycapssa was 2.1 years, with exposure greater than three years for five patients.
- Mycapssa’s safety profile was consistent with previous studies throughout the OLE; no serious adverse events were reported.

Samson says that next she would like to see how oral octreotide works in combination therapy (one of the arms of the MPOWERED trial is looking at cabergoline with oral octreotide capsules). “Also, I think some of us might like to see not just how the biochemistry is controlled, but what happens with the actual tumor, and we don’t have that data right now,” she says.

For now, Samson says that these findings mean she can be assured that patients who fit the criteria for oral treatment of their acromegaly will maintain control over the disease for the long term. “It was really exciting to see those patients coming into the second year [of the study]. Of those who were responders, 100% maintained their response,” she says. “For all of us in endocrinology that treat patients with acromegaly, this is a really exciting option for our patients beyond what we’ve had in the past. It adds to our armamentarium, it’s safe, it has durable effect in our patients to respond, and I think that’s a really positive thing.”

Adult GHD Increases Medical Costs, Health Risks

Growth hormone deficiency (GHD) among adults is associated with greater medical costs and an increased rate of other health conditions compared with those without GHD, according to industry-sponsored research presented at ENDO 2022 in Atlanta, Ga.

Researchers led by Alden Smith, PharmD, global head of Health Economics and Outcomes Research at Ascendis Pharma in Palo Alto, Calif., point out that treatment of adults with

25,000 patients diagnosed with GHD between January 1, 2008, and December 31, 2017. Those with GHD were directly matched to controls without GHD, based on age, gender, plan type (Medicaid versus commercial health insurance), region, and race.

The researchers found that compared to controls, GHD patients were disproportionately affected by comorbidities, including endocrine conditions, metabolic conditions, hepatic and renal function conditions, and cardiovascular disease, and were disproportionately treated with concomitant medications.

“Mean annual all-cause healthcare costs were 4.6 times greater (\$42,309 versus \$9,146) for Medicaid GHD patients than controls and 4.1 times greater (\$30,111 versus \$7,376) for commercial GHD patients than controls,” the authors write.

“For Medicaid GHD patients, inpatient costs were a primary driver (\$22,385 versus \$3,494 for controls), while outpatient costs made up the largest proportion for commercial

patients (\$13,083 vs. \$4,057 for controls). Few patients were treated with somatropin therapy in both Medicaid (5.8%) and commercial (9.5%) GHD cohorts.”

Based on these findings, the researchers conclude that adult patients with GHD experience a substantial comorbidity and economic burden compared to non-GHD controls. “Adult GHD remains primarily untreated and presents a significant healthcare burden,” the authors write.

GHD is associated with improvement in metabolic impairment and quality of life, but that poor adherence to or lack of treatment with somatropin is associated with reduced or lack of efficacy and increased costs. “This study analyzed healthcare costs and daily somatropin use among adults with GHD who had Medicaid or commercial health insurance in the U.S.,” the authors write.

Smith and colleagues conducted a retrospective analysis of claims data from more than



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Adult GHD remains primarily untreated and presents a significant healthcare burden.

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Our results indicate that IL1 β plays an important role in linking up sensory information such as the sight and smell of a meal with subsequent neurally mediated insulin secretion — and in regulating this connection.

”

Mere Sight of a Meal Triggers Inflammatory Response in the Brain



Researchers from the University of Basel and University Hospital Basel have identified how the sensory perception of a meal generated a signal to the pancreas to ramp up insulin production: inflammatory factor interleukin 1 beta (IL1 β), which is also involved in the immune response to pathogens or in tissue damage. The team reported their findings in *Cell Metabolism*.

The researchers, led by Marc Y. Donath, MD, write that they hypothesized that IL-1 β exerts its secretagogue effect on insulin secretion via stimulation of the parasympathetic nervous system. “Using genetic and pharmacological models, we found IL1 β to mediate its stimulatory effect on insulin secretion via central muscarinic signaling,” the authors write. “In order to substantiate the neuronal involvement of IL1 β -mediated insulin release, we studied the cephalic phase insulin response as a prime example of centrally mediated insulin secretion. We identified IL1 β as a crucial mediator of this cephalic phase reflex.”

The researchers found that the smell and sight of a meal stimulate microglia, which secrete IL1 β , which the vagus nerve then relays to the pancreas, a process that is disrupted in mice and humans with obesity. “Our findings attribute a regulatory role to IL1 β in the integration of nutrient-derived sensory information, subsequent neuronally mediated insulin secretion, and the dysregulation of autonomic cephalic phase responses in obesity,” the authors write. “This identifies a neuro-immunologic endocrine circuit in the regulation of insulin secretion.”

“Our results indicate that IL1 β plays an important role in linking up sensory information such as the sight and smell of a meal with subsequent neurally mediated insulin secretion — and in regulating this connection,” Donath says.

New Data Show Strong Performance of Thyroid Cancer Test in Real-World Clinical Practice

New meta-analysis presented at ENDO 2022 provide real-world evidence that a test can accurately rule out thyroid cancer in patients with indeterminate thyroid nodules and that, when the test deems a nodule as suspicious, the patient's risk of malignancy is consistent and higher than that reported in the test's original clinical validation (CV) study.



Veracyte is marketing the test as the Afirma Genomic Sequencing Classifier (GSC).

Veracyte estimates that each year approximately 565,000 people undergo fine-needle aspiration (FNA) biopsy evaluation for potentially cancerous thyroid nodules and that more than 110,000 of these patients receive indeterminate results. Historically, most of these patients were directed to diagnostic surgery, even though 70% to 80% of the time, the nodules proved to be benign. Current American Thyroid Association guidelines include molecular testing as a recommended option to achieve definitive diagnosis for nodules classified as indeterminate following FNA biopsy.

In the new meta-analysis, researchers evaluated 13 independent studies and found that the Afirma GSC's real-world ability to identify benign nodules with high sensitivity and high negative predictive value for thyroid cancer was like the CV study results (97% versus 91% and 99% versus 96%, respectively). Additionally, the meta-analysis data show that the Afirma test's real-world performance surpasses that shown in the CV study when predicting the risk of malignancy in nodules labeled suspicious (65% positive predictive value versus 47%).

"The Afirma GSC's clinical validation study provided high-quality evidence of our test's ability to rule out malignancy in indeterminate thyroid nodules to help these patients avoid unnecessary surgery," says Joshua

Klopper, MD, Veracyte's medical director for endocrinology and an author of the study. "Our new findings show that the real-world experience supports this data, further demonstrating that the likelihood of malignancy in Afirma GSC-suspicious nodules is even greater than what was reported in the validation study." ^{EN}



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Our new findings show that the real-world experience supports this data, further demonstrating that the likelihood of malignancy in Afirma GSC-suspicious nodules is even greater than what was reported in the validation study.

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One of the most significant challenges I encountered early in my career as an independent scientist was how to promote my work and give visibility to the many projects we were engaging in. **I believe this award will allow our work to reach many more scientists and hopefully help inspire other early-career investigators to apply for this award and in-training researchers to continue generating invaluable research independent of the many difficulties we may encounter in our careers.”**

— Omar Bello-Chavolla, MD, PhD, associate professor, National Institute for Geriatrics, Mexico City, Mexico, one of the Endocrine Society's 2022 Early Investigators Award Winners, discussing the award's impact on his career in “Researchers Roundtable: Talking to the 2022 Early Investigators Award Winners,” on page 34.

MEMBER SPOTLIGHT Q&A

Mohammed Al-Sofiani, MD, MSc



Mohammed Al-Sofiani, MD, MSc, is an assistant professor of endocrinology, diabetes, and metabolism at King Saud University (KSU), Riyadh, Saudi Arabia, and is an adjunct assistant professor at Johns Hopkins University in Baltimore, Md. He serves as the vice president of the Saudi Society of Endocrinology and Metabolism and the chief scientific officer (CSO) of the first specialized diabetes ecosystem and

artificial intelligence platform in the Middle East (KARAZ). He is also the director of the Endocrinology, Diabetes, and Metabolism Fellowship Training Program at KSU.

Al-Sofiani's research focuses on the digital transformation of diabetes care in the Middle East to improve the quality, efficiency, and safety of diabetes care and overcome barriers to access to care in various parts of the Middle East. He has authored many scientific papers and book chapters and has given over 200 oral presentations in regional and international conferences and is the recipient of the 2019 Endocrine Society Clinical Fellow Award in Diabetes among several other prestigious awards.

What is your favorite Endocrine Society memory?

Over the years, the ENDO meetings have provided me with the opportunity to network with peers and giants in endocrinology from all over the world; many of whom have since become colleagues, friends, and mentors. My favorite Endocrine Society memory is when our abstract was selected for oral presentation and awarded the Endocrine Society Clinical Fellow Award in Diabetes in 2019.

How has Endocrine Society supported your professional development/career journey?

Through the Endocrine Society, I got the chance to give my first oral presentations at a national/international level. I still remember the day when I gave one of those talks as a resident and was approached shortly after by the program director of one of the prestigious endocrinology fellowship programs in the U.S. who complimented my presentation and was kind enough to offer me an invitation for a fellowship interview should I be interested. The Early Career Forum is another Endocrine Society program that helped me become a better endocrine fellow during my training years and a productive junior faculty later on through boosting my knowledge, skills, confidence, and by expanding my network early on in my development and career journey.

Read more about your fellow Endocrine Society members at: www.endocrine.org/member-spotlight

3 months old

Serum testosterone levels in 3-month-old boys predict their semen quality as young adults, as study reveals serum testosterone in infancy is a predictor of adult total sperm count.

— SOURCE: THE JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM

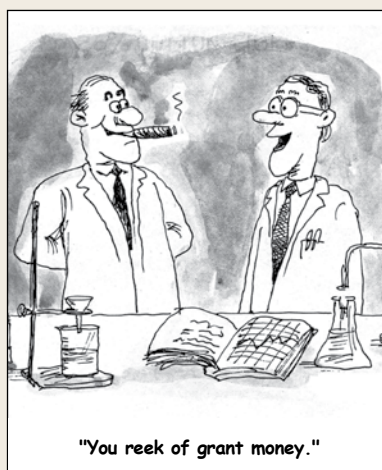


While the overall prevalence of insulin pump use increased from 30.0% in 2001 – 2005 to 58.3% in 2016 – 2019, there was no change in the rates by race, income, and education over time.

Highest use: White, non-Hispanic patients with incomes equal to or greater than **\$75,000**, and those with an education greater than a bachelor's degree.

Lowest use: Black patients, those with incomes less than **\$25,000** and those with a high school degree.

— SOURCE: SEARCH FOR DIABETES IN YOUTH STUDY



"You reek of grant money."



Among patients ages 65 and older, hypothyroidism was linked with an 81% increased risk of being diagnosed with dementia.

— SOURCE: NEUROLOGY



EBR

ENDOCRINE BOARD REVIEW

2022

REGISTRATION IS NOW OPEN!

ENDOCRINE BOARD REVIEW

SEPTEMBER 16–18, 2022

ONLINE EVENT

BEST-IN-CLASS PREPARATION FOR YOUR BOARD EXAM

[ENDOCRINE.ORG/EBR2022](https://endocrine.org/EBR2022)

2022 Clinical Endocrinology Update/Endocrine Board Review

CEU 2022

CLINICAL ENDOCRINOLOGY UPDATE

Sept. 8 – 10, 2022/Miami, Fla. & Virtual

The Endocrine Society's Clinical Endocrinology Update (CEU) provides an annual update on the latest diagnosis and treatment recommendations for various endocrine conditions, delivering educational value for clinicians, and ensuring optimal patient care worldwide.

Our program is the best way to stay updated on the latest developments in patient diagnosis and treatment in endocrinology. Esteemed faculty from across the globe will present a comprehensive, case-based agenda to help you gain knowledge to improve your practice in an intimate atmosphere where you have direct access to experts in hormone health. Sessions are organized around nine core topics, including diabetes and glucose metabolism, obesity, adrenal and cancer, pituitary and thyroid diseases, bone disorders, and transgender care.

Those interested in meeting in person can join us in Miami, Fla. We will also provide the majority of this year's program online via our virtual meeting platform.

<https://ceu2022.endocrine.org/Home>



EBR 2022

ENDOCRINE BOARD REVIEW

Sept. 16 – 18, 2022/Virtual Only

Endocrine Board Review (EBR) is an essential course for endocrinologists preparing to take the boards or practicing physicians seeking an intensive knowledge assessment. The virtual program is designed as a mock exam, with rapid-fire case-based questions emulating the format and subject matter of the ABIM's Endocrinology, Diabetes, and Metabolism Certification Examination. Attendees will have early access to topical on-demand presentations with detailed answer rationale (available in late August).

<https://www.endocrine.org/ebr2022>



The Mechanisms of Allostasis Conference: Stressed or Stressed Out

New Orleans, Louisiana
September 18 – 22, 2022

Jointly hosted by FASEB and the Endocrine Society, this FASEB Science Research Conference will feature presentations from expert researchers sharing the latest results on stress and reproduction; the integration of the hypothalamic–pituitary–adrenal axis with metabolism and the gut microbiome; and how stress hormones work at the molecular and cellular level to alter physiologic function. The conference's target audience includes investigators at various career stages, trainees, and junior scientists who are experts in the fields of stress biology, neuroendocrinology, and related disciplines.

<https://www.faseb.org/meetings-and-events/>

91st Annual Meeting of the American Thyroid Association

Montreal, Quebec, Canada
October 19 – 23, 2022

The ATA Annual Meeting is the world's preeminent event for those interested in thyroid diseases and disorders. Clinicians and researchers from around the world participate in ATA's Annual Meeting. Whether you're an endocrinologist, a surgeon, an advanced practice provider, a fellow in training, or a medical student, the topics covered during the meeting will provide you with in-depth information about thyroid diseases and disorders. With a diverse program planned, attendees can customize their experience by attending sessions that are most important to their professional development.

<https://www.thyroid.org/91st-annual-meeting-ata/>

Neuroscience 2022 – Society for Neuroscience (SfN)

San Diego, California
November 12 – 16, 2022

Neuroscience 2022 will be held in-person in San Diego, Calif., November 12 – 16. Each year, scientists from around the world congregate to discover new ideas, share their research, and experience the best the field has to offer. Attend so you can: present research, network with scientists, attend session and events, and browse the exhibit hall. Join the nearly half a million neuroscientists from around the world who have propelled their careers by presenting an abstract at an SfN annual meeting – the premier global neuroscience event.

<https://www.sfn.org/meetings/neuroscience-2022>

INTERNATIONAL ITINERARY

EASD 58th Annual Meeting

Stockholm, Sweden and Online
September 19 – 23, 2022

The European Association for the Study of Diabetes (EASD) believes a hybrid congress experience ensures that the global diabetes community can benefit from the latest research and innovations in the field of diabetes and offers various options for exchange and interaction, independent of the ongoing uncertainties regarding meeting and travel regulations across the globe. We hope to meet you in person in Stockholm in September 2022, and to those who might not be able to travel, we look forward to welcoming you virtually.

www.easd.org/annual-meeting/easd-2022.html

EndoBridge 2022

Antalya, Turkey
October 20 – 23, 2022

EndoBridge® is a unique initiative with the vision of bridging the world of endocrinology. The annual meeting of EndoBridge is co-hosted by the Endocrine Society and the European Society of Endocrinology in collaboration with the Society of Endocrinology and Metabolism of Turkey. EndoBridge will be held in English with simultaneous translation into Russian, Arabic, and Turkish. Accredited by the European Accreditation Council for Continuing Medical Education (EACCME), this three-day scientific program includes state-of-the-art lectures delivered by world-renowned faculty and interactive sessions covering all aspects of endocrinology. EndoBridge® provides a great opportunity for physicians and scientists from around the world to interact with each other, share their experience and perspectives, and participate in discussions with global leaders of endocrinology.

www.endobridge.org

6th International Symposium on Pheochromocytoma

Prague, Czech Republic
October 19 – 22, 2022

Leading international experts in basic, clinical, and translational pheochromocytoma research will present their latest discoveries, guidelines, clinical trials results, collaborative efforts, and future visions for studying this tumor. Four plenary sessions will focus on the latest discoveries and perspectives in genetics and epigenetics, biochemistry and metabologenomics, therapeutics, and mitochondrial function. The symposium will have several sessions devoted to patient management, including unique case presentations and in-person discussions with expert physicians on their approach to the workup, diagnosis, and treatment of patients with this tumor. All healthcare professionals, scientists, students, patients, and allies are welcome to attend this symposium, which will undoubtedly outline new focuses and avenues for early diagnosis, treatment, and ultimately prevention of pheochromocytoma.

<http://www.isp2022prague.com/>

BY ERIC SEABORG

an ADULT endocrine MISNOMER

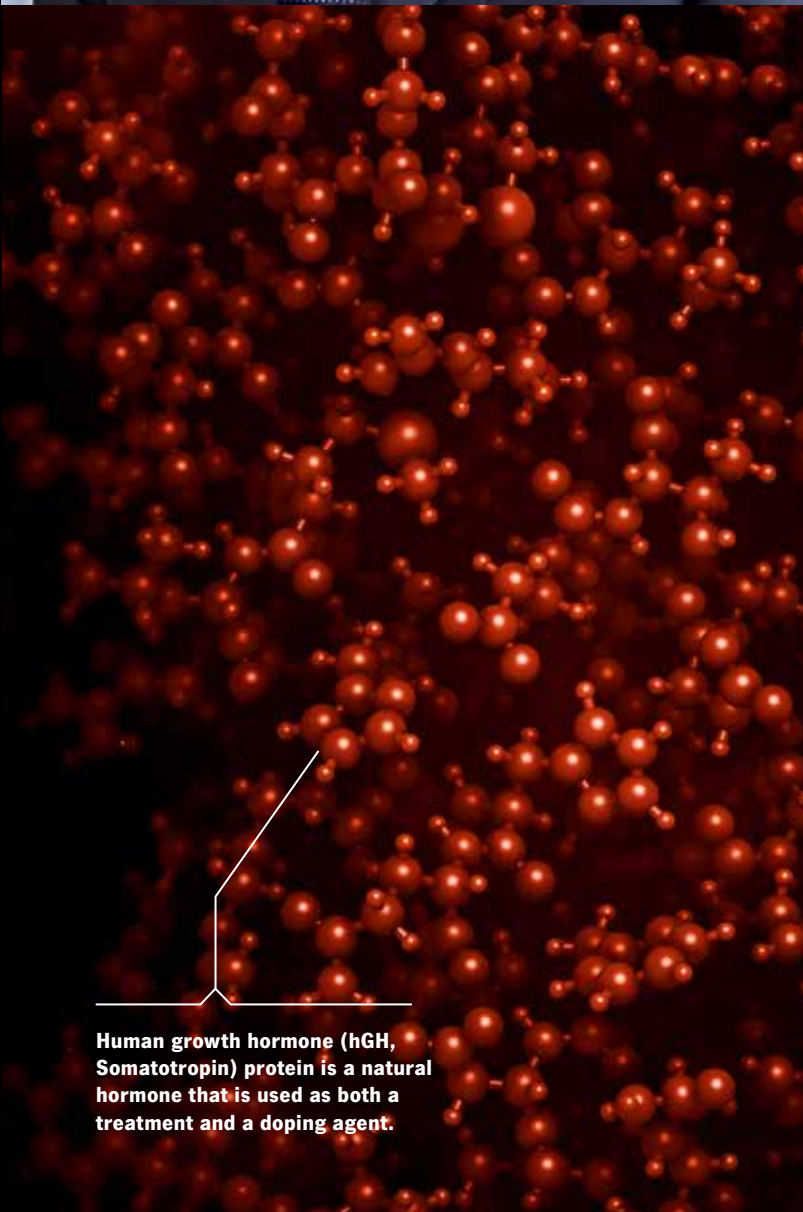
What Is the Role of
“Growth Hormone”
When You Have
Stopped Growing?





Shlomo Melmed, MD ChB, is dean of the faculty of medicine at Cedars-Sinai in Los Angeles, Calif.

Growth hormone clearly plays a key role in development during youth, but research in adults implicates it as an agent in cellular aging processes. Shlomo Melmed, MD, ChB, the first recipient of the Transatlantic Alliance Award, co-sponsored by the Endocrine Society and the European Society of Endocrinology, discusses the misconceptions of administering growth hormone in adults.



Human growth hormone (hGH, Somatotropin) protein is a natural hormone that is used as both a treatment and a doping agent.



Melmed and his colleagues as they listen to and consider oral presentations for the annual Cedars-Sinai Rubenstein Award for Excellence in Resident Research in 2019.

Children need growth hormone to grow into their adult height, but the hormone's function among adults is unclear. The pituitary secretes less growth hormone as a person ages, but new research is elucidating a potentially important role for nonpituitary growth hormone generated in the periphery in regulating cellular proliferation associated with aging.

Unraveling the effects of this mysterious hormone has been a focus of the work of Shlomo Melmed, MD, ChB, dean of the faculty of medicine at Cedars-Sinai in Los Angeles. Melmed is the inaugural winner of the Transatlantic Alliance Award, an honor co-sponsored by the Endocrine Society and the European Society of Endocrinology to recognize an international leader who has made significant advancements in endocrine research on both sides of the Atlantic.

As part of the award, Melmed gave a presentation at both **ENDO 2022** in Atlanta, Ga., in June, and at the European Congress of Endocrinology 2022 in Milan, Italy, in May entitled, "Growth Hormone: An Adult Endocrine Misnomer?"



Dangers of Too Little or Too Much

The growth hormone level declines dramatically with age such that it is barely detectable in the circulation by age 80, but even at low levels it is clearly playing an important role. "Adults deficient in pituitary growth hormone have a unique phenotype," Melmed says. "They develop central obesity and may have high blood pressure and lethargy. Growth hormone in adulthood is needed to maintain body homeostasis, i.e., the appropriate ratio between lean body mass and fat mass. When these GH-deficient adults [receive] very low doses of growth hormone, body changes are recalibrated and homeostatic changes that occur with hormone deficiency may be reversed."

On the other hand, the deleterious effects of too much growth hormone from an over-secreting pituitary adenoma are well-known. "Patients with acromegaly have phenotypic features often associated with aging," Melmed says. "They have heart disease, diabetes, hypertension, and osteoporosis, and may develop tumors. Many afflictions of aging are present, and the linkage of too much growth hormone with adverse effects on the aging process is clinically intuitive."

“Adults deficient in pituitary growth hormone have a unique phenotype. They develop central obesity and may have high blood pressure and lethargy. **Growth hormone in adulthood is needed to maintain body homeostasis, i.e., the appropriate ratio between lean body mass and fat mass.** When these GH-deficient adults [receive] very low doses of growth hormone, body changes are recalibrated and homeostatic changes that occur with hormone deficiency may be reversed.”

— SHLOMO MELMED, MD, CHB, DEAN, FACULTY OF MEDICINE, CEDARS-SINAI, LOS ANGELES, CALIF.

Pituitary growth hormone production

ANTERIOR LOBE

POSTERIOR LOBE

HORMONES

HORMONES

PITUITARY GLAND

Gene p53 bound to DNA

Nonpituitary Growth Hormone

However, evidence is mounting that growth hormone that originates not from the pituitary but in the periphery could have significant effects. Melmed and others have been conducting cellular, animal, and human studies on the effects of autocrine and paracrine growth hormone.

For example, the hormone appears to be produced by the epithelial cells of the colon and neighboring cells, where it acts locally to activate the growth hormone receptor, to engender cell cycle changes and DNA damage, and to promote pro-proliferative changes, Melmed says. One of its most important actions may be to inhibit the tumor suppressor gene p53, which is a powerful constraint on cell proliferation and tumor formation. “We found that growth hormone locally suppresses p53, thereby unleashing the cell to become more pro-proliferative,” Melmed says.

“We performed a series of cellular and animal experiments to show that the molecular profile of aging may be accelerated by increasing growth hormone signaling, and if you block growth hormone action you may suppress deleterious aging effects on the cell cycle, including attenuation of DNA repair,” Melmed says.

For example, their experiments showed that the drug pegvisomant, a growth

AT A GLANCE

- ▶ Growth hormone levels decline with age — which may be a protective mechanism in slowing some of the effects of aging.
- ▶ Nonpituitary growth hormone in the colon epithelium has been shown to inhibit the tumor suppressor gene p53, resulting in pro-proliferative effects.
- ▶ Low levels of growth hormone in adulthood appear to be associated with greater longevity, whereas higher levels are associated with the adverse effects of aging.



Increased levels of growth hormone used as a performance-enhancing drug may in fact be harmful.

“ We found that growth hormone locally suppresses p53, thereby unleashing the cell to become more pro-proliferative. We performed a series of cellular and animal experiments to show that the molecular profile of aging may be accelerated by increasing growth hormone signaling, and if you block growth hormone action you may suppress deleterious aging effects on the cell cycle, including attenuation of DNA repair.”

— SHLOMO MELMED, MD, CHB, DEAN, FACULTY OF MEDICINE, CEDARS-SINAI, LOS ANGELES, CALIF.

hormone receptor inhibitor used to treat patients with acromegaly, can elevate p53 levels and enable a protective environment in the colon epithelium. “The role of growth hormone in regulating proliferation of colon cells could explain why patients with acromegaly have an abundance of colon polyps,” he tells *Endocrine News*.

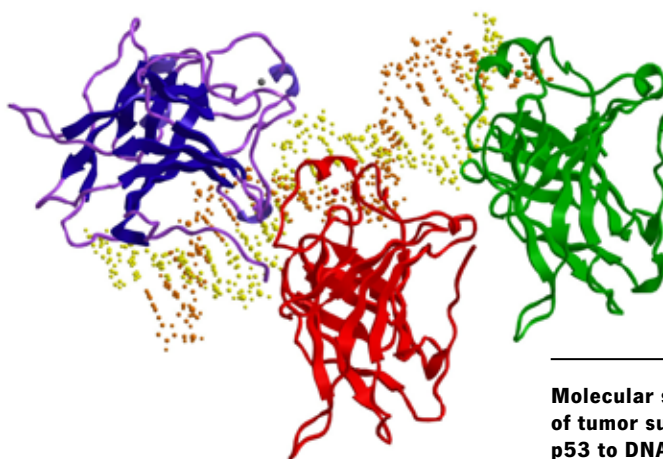
Evidence from Families

Melmed says that other tantalizing clues implicating growth hormone in aging include the pioneering work of Endocrine Society Koch Awardee Anderzj Bartke, who showed that GH-deficient mice live longer. Furthermore, a Netherlands study of the relatives of centenarians found that these long-lived individuals and their family members have very low growth hormone levels.

There have also been studies of several families around the world who have inactivating growth hormone receptor mutations with short stature and an extremely low incidence of cancer. “We re-introduced a normal growth hormone receptor into the mutated fibroblasts, and down-regulated their high p53 expression, another proof of principle in humans that local growth hormone may enable a pro-proliferative micro-environment,” Melmed says.

“We propose, based upon the body of cellular, animal, and human data that have been generated by other colleagues and ourselves, that blocking growth hormone action may protect from adverse cellular effects of aging. We have no evidence that aging could be reversed, but blocking growth hormone signaling could mitigate pro-proliferative cell cycle events and DNA damage associated with aging,” Melmed says.

He notes that these findings have an immediate practical application as a counter to the large illicit market in which people, especially athletes, are taking growth hormone as a performance-enhancing drug “in an attempt to enhance athletic performance or to improve their longevity” when the evidence indicates that “the opposite is true, and growth hormone may in fact be harmful.” **EN**



Molecular structure-interaction of tumor suppressor protein p53 to DNA

— SEABORG IS A FREELANCE WRITER BASED IN CHARLOTTESVILLE, VA. HE WROTE ABOUT THE ENDOCRINE SOCIETY'S LATEST CLINICAL PRACTICE GUIDELINE, “MANAGEMENT OF HYPERGLYCEMIA IN HOSPITALIZED ADULT PATIENTS IN NON-CRITICAL CARE SETTINGS: AN ENDOCRINE SOCIETY GUIDELINE,” IN THE JULY ISSUE.



Melmed with 2021 – 2022 Endocrine Society President Carol H. Wysham, MD, at **ENDO 2022** in Atlanta, Ga., in June. Upon being awarded the inaugural Transatlantic Alliance Award co-sponsored by the Endocrine Society and the European Society of Endocrinology, Melmed gave a talk entitled “Growth Hormone: An Adult Endocrine Misnomer?”

A Career of Contributions

“Dr. Melmed’s distinguished career has set a high bar for endocrine researchers on both sides of the Atlantic.”

— CAROL WYSHAM, MD, THE ENDOCRINE SOCIETY’S IMMEDIATE PAST-PRESIDENT

Melmed’s groundbreaking work on growth hormone is one more contribution in a professional life devoted to pituitary medicine that the Endocrine Society and European Society of Endocrinology recognized with the Transatlantic Alliance Award.

“Dr. Melmed’s distinguished career has set a high bar for endocrine researchers on both sides of the Atlantic,” says the Endocrine Society’s immediate past-president Carol Wysham, MD, clinical professor of medicine at the University of Washington. “We and our partners at ESE are proud to be recognizing a worldwide leader who is advancing our field.”

Among his many contributions to the profession of endocrinology, he has served as a member of the Endocrine Society council, as president of the International Society of Endocrinology, and as president and founding member of the Pituitary Society. “Melmed

exemplifies transatlantic endocrine leadership, as evidenced by his high-quality transnational educational initiatives and professional society leadership,” according to the statement announcing the award. “Coupled with his exemplary scholarly contributions in the highest-quality basic and clinical journals, Melmed’s achievements reflect a dual combination of outstanding basic and clinical creativity underscoring his standing as an international research and clinical leader of pituitary medicine. He has made an outstanding and ongoing contribution to the endocrine community’s fundamental and clinical understanding of pituitary tumor biology as it is applied to the advancement of transatlantic endocrinology.”

Aside from receiving the first Transatlantic Alliance Award, Melmed has been honored twice by the Endocrine Society with Laureate Awards for Outstanding Clinical Investigator in 2004 and the Outstanding Scholarly Physician Award in 2018.

— Eric Seaborg

**both
ends
of the
spectrum**



**Diagnosing, Examining,
and Treating
Hypoparathyroidism and
Hyperparathyroidism Patients**

BY DEREK BAGLEY



Aliya Khan, MD, FRCP, FACP

Next month's Endocrine Society Clinical Endocrinology Update 2022 will be a hybrid event for the first time, but it will still offer attendees a variety of courses on the latest diagnosis and treatment recommendations for several endocrine conditions. Aliya Khan, MD, FRCP, FACP, talks to *Endocrine News* about her session, "Diagnosis and Management of Hyperparathyroidism & Hypoparathyroidism," recent breakthroughs, what attendees can expect, and the "good news" she'll be sharing.

During the course of a Phase 3 trial investigating a potential drug to treat adults with hypoparathyroidism, Aliya Khan, MD, FRCP, FACP, professor of clinical medicine at McMaster University in Ontario, Canada, had a patient who was an operating room nurse who had a total thyroidectomy and developed hypoparathyroidism. The patient couldn't think clearly — thoughts so muddled, in fact, that she had to quit her job and go on disability. "And then after we started on this study," Khan says, "she was actually able to go back to work. She came in crying and said, 'Dr. Khan, you gave me my life back!'"

Data from this trial — looking at the efficacy and safety of an investigational prodrug of parathyroid hormone (PTH) in development as a once-daily hormone replacement therapy — were presented at ENDO 2022 in Atlanta, Ga., in June. (Ascendis funded the trial and is marketing the drug as TransCon PTH.)

Next month, at Clinical Endocrinology Update (CEU) in Miami, Fla., Khan will speak about this drug and other new molecules in development for the treatment of hypoparathyroidism. Her talk, titled "Diagnosis and Management of Hyperparathyroidism & Hypoparathyroidism," as its name suggests, will look at complications of the parathyroid glands from both ends of the calcium spectrum — how to evaluate and prevent the short-term and long-term complications of hypoparathyroidism, and how and when to use PTH replacement therapy.

Khan will also go over how to diagnose hyperparathyroidism and give an overview of its complications, as well as suggest when to operate and when to use medical management. "I will also be presenting on the diagnosis and management of parathyroid disease in pregnancy," she says. "In addition, I will provide an overview of the new global guidelines on both hypoparathyroidism as well as primary hyperparathyroidism."

Detailed Assessment

One of the learning objectives for this CEU presentation is to identify updated approaches to patients with normocalcemic hyperparathyroidism. Khan explains that in these patients, it is critical to exclude a physiologic rise in PTH, which can occur in the presence of a normal serum calcium. This is often due to a number of conditions: vitamin D insufficiency or inadequate calcium intake or absorption; chronic kidney disease; or other drugs that can elevate serum PTH without elevating



“We want to improve patients’ well-being from day to day, and we can normalize calcium with calcium and active vitamin D, but we’re not helping the long-term complications with conventional therapy. **And if we’re making that likelihood of chronic kidney disease earlier and more severe, then we’re not really helping our patients.”**

— ALIYA KHAN, MD, FRCP, FACP, FACE, PROFESSOR, CLINICAL MEDICINE, MCMASTER UNIVERSITY, ONTARIO, CANADA

serum calcium, such as antiresorptive therapy (denosumab or bisphosphonates), hydrochlorothiazide, or lithium.

“Even other diseases such as Paget’s disease or hypercalciuria can result in a physiologic rise in PTH, and these conditions need to be excluded before a diagnosis of normocalcemic hyperparathyroidism can be confirmed,” Khan says. “A detailed assessment will be very helpful in evaluating the underlying condition and making the correct diagnosis.”

Misreading Symptoms

Indeed, both diseases can be debilitating and cause a wide variety of symptoms that can diminish a patient’s quality of life. And they can go overlooked by providers who chalk the initial symptoms up to anxiety and stress. Khan tells *Endocrine News* that in hypoparathyroidism, while about 75% of cases are in patients who are postsurgical (such as the O.R. nurse above), the rest are due to autoimmune diseases or genetic causes, and a primary care physician might not check those patients’ serum calcium levels. “So, if [the patients] are confused or they’re having anxiety or numbness or tingling, and if it’s a young woman, [the physicians] will say, ‘Oh, you’re just anxious. There’s nothing,’” she says.

Khan goes on to say that patients who have non-surgical hypoparathyroidism will often present with something catastrophic, such as a seizure, because their calcium keeps dropping but a diagnosis is never made because those levels weren’t checked. “We really want to emphasize: Check calcium, correct for an albumin, check PTH. And if both of them are

low, or the PTH is inappropriately in the normal range, then look for hypoparathyroidism, confirm the diagnosis,” she says. “And if it’s not postsurgical, then we gave a very nice strategy in the guidelines that we presented as to how to find what the underlying causes for the hypoparathyroidism.”

Changing Patients’ Lives

And once that diagnosis of hypoparathyroidism is finally made, for now, these patients are treated with active vitamin D and calcium, but that treatment can increase the risk of long-term complications because it can further elevate phosphate, which can cause calcium and phosphate to deposit in the brain, behind the eyes, and in the kidneys, which can cause nephrocalcinosis, with the whole renal parenchymal calcifying.

Khan says that during her CEU talk, she will provide an update on all the new advances in drug therapy for hypoparathyroidism. She points to the aforementioned study of the PTH prodrug, as the investigators were able to show a consistent decline in urine calcium, as well as reductions in phosphate. “[The study] also showed significant improvements in quality of life while maintaining a normal calcium and stopping calcium and active vitamin D,” she says. “We want to improve patients’ well-being from day to day, and we can normalize calcium with calcium and active vitamin D, but we’re not helping the long-term complications with conventional therapy. And if we’re making that likelihood of chronic kidney disease earlier and more severe, then we’re not really helping our patients.”

And it wasn’t just the patient who was returned to work as a nurse in the operating room who benefitted from these new treatments for hypoparathyroidism. Other patients got raises at their jobs or were able to go back to school to finish their degrees. “It’s changing people’s lives,” Khan says. “One guy always wanted to do construction, but that requires a lot of calcium because it’s heavy, physical duty, and he was on disability sitting at home. Now he’s building houses. He comes in sweating, he’s really into it. And we say, ‘What are you doing?’ He says, ‘Oh, I’m building my fifth house.’”

“It’s really nice to be able to have such a big impact because there’re not that many areas in medicine where we can make a huge change in quality of life and turn people’s life around,” she continues, “but in hypoparathyroidism we’ve been able to demonstrate that and it’s really a very rewarding study to be a part of.”

— BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. HE WROTE ABOUT THE OSTEOPOROSIS RISK FACTORS IN MEN WITH HIGHER BMIS IN THE JUNE ISSUE.

CEU2022

CLINICAL ENDOCRINOLOGY UPDATE

Diagnosis and Management of Hyperparathyroidism & Hypoparathyroidism

Thursday, September 8, 8:55 a.m. – 9:40 a.m.
Grand Ballroom – Versailles Intercontinental Hotel

This session will review the 2022 updated international evidence-based recommendations and guidelines for the evaluation and management of patients with primary hyperparathyroidism or hypoparathyroidism. Emphasis will be placed on the new insights and updates related to the diagnosis, evaluation, and management of each condition.


Learning Objectives:

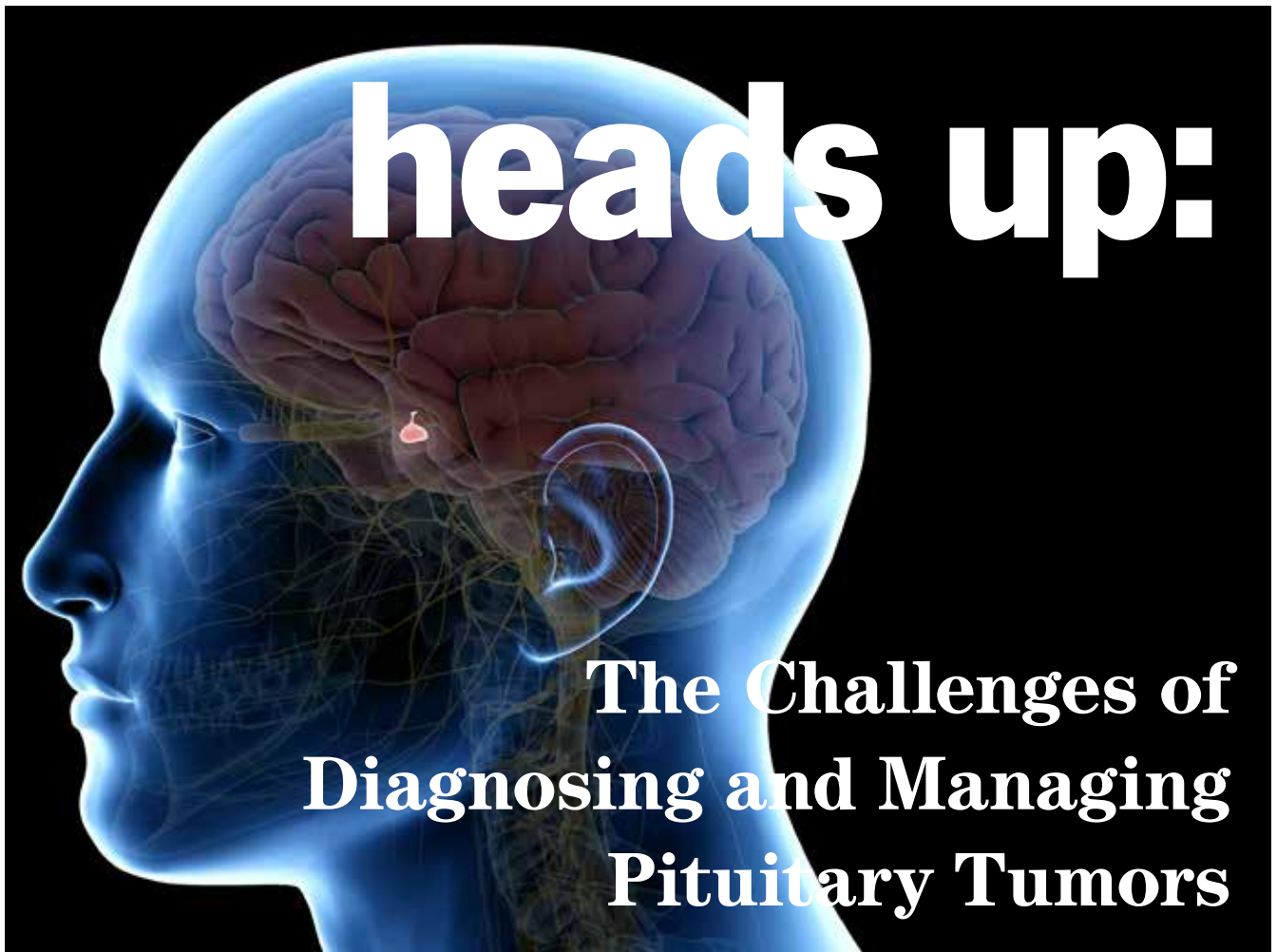
- ▶ Identify updated approaches to patients with normocalcemic hyperparathyroidism.
- ▶ Recognize optimal monitoring strategies for patient important outcomes in hypoparathyroidism.
- ▶ Discuss the utility of PTH and calcium measurements following total thyroidectomy in predicting chronic hypoparathyroidism.

For more information: <https://ceu2022.endocrine.org/Home>

Bearing Good News

Khan says she’s excited about these new molecules for the treatment of hypoparathyroidism that are in development. She says that they include different formulations of PTH that have a longer half-life than teriparatide (which is only one hour). “rhPTH 1-84 has a three-hour half-life and TransCon PTH has a 60-hour half-life and provides stability in serum calcium in addition to lowering serum phosphate, and urine calcium and improving quality of life,” she says.

And she says she’s eager to bring the good news to CEU next month. “[Attendees] will be treated to a state-of-the-art lecture providing an overview of both primary hyperparathyroidism as well as hypoparathyroidism, summarizing advances in knowledge on how to diagnose and treat these conditions,” Khan says. “Key recommendations from the upcoming global guidelines will also be presented.” 



In two sessions focusing on pituitary tumors at next month's CEU 2022, neurosurgeon Gabriel Zada, MD, MS, FAANS, FACS, will discuss advances in new surgical techniques, inpatient and long-term management, and an in-depth overview of managing patients with pituitary adenomas. In addition, he will elucidate how health disparities can often have an even more devastating impact on those patients in underserved populations.

BY DEREK BAGLEY



Gabriel Zada, MD, MS, FAANS, FACS

Gabriel Zada, a neurosurgeon and an internationally recognized expert in brain, skull base, and pituitary tumor surgery, knows all too well the importance of working closely with an endocrinologist when it comes to getting optimal outcomes for patients with pituitary tumors.

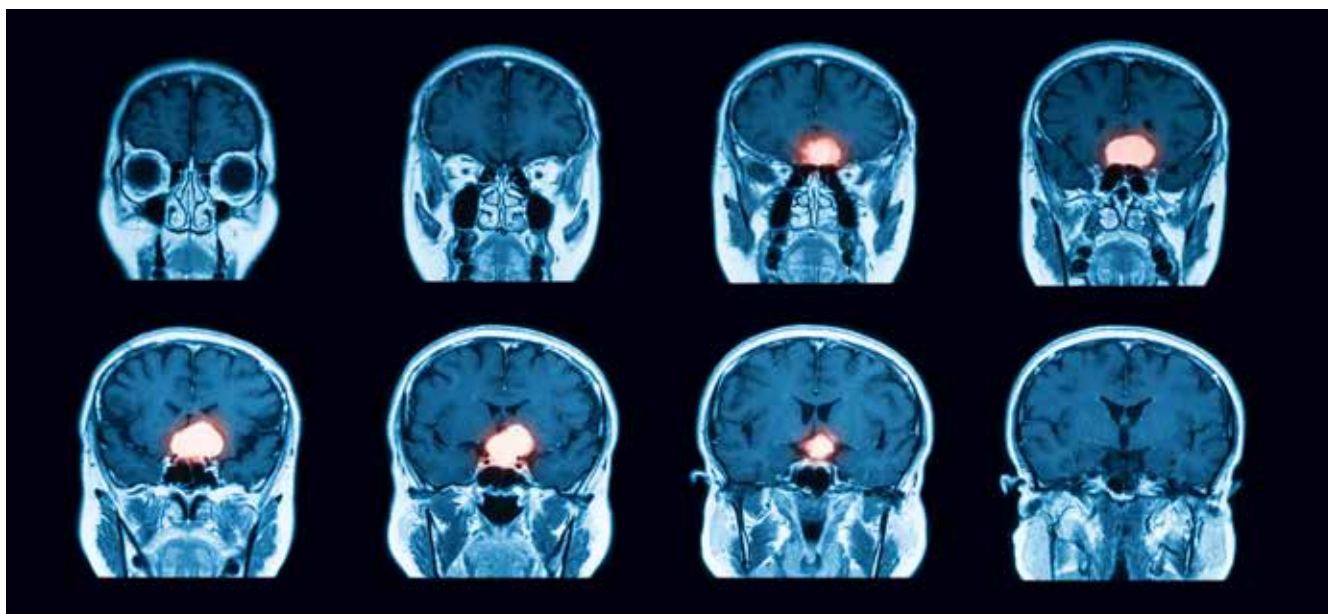
A patient once presented to his team with a challenging prolactinoma who was being treated with cabergoline, but her tumor wasn't shrinking, so Zada thought surgery might be her next best bet. But Zada says after discussion with his colleague at USC Keck School of Medicine, John David Carmichael, MD, an endocrinologist who specializes in neuroendocrinology, they reviewed the case, and Carmichael suggested trying the patient on a higher dose of medication before recommending an operation.

"And lo and behold, her tumor shrunk down, and she avoided surgery," Zada says. "This was several years ago, and not that I didn't know it, but it really highlighted the importance of working with an endocrinologist to optimize everything and even avoiding surgery sometimes, can be done."

Carmichael concurs regarding the necessity of a collaborative approach when treating patients with pituitary tumors. "The very nature of the medical issues inherent to pituitary disease makes an interdisciplinary approach toward diagnosis and ongoing management a necessity," he says. "Working closely with Dr. Zada has been a huge part of our success as a center, as we have developed a clinic that capitalizes on the strength of a team approach."

According to Carmichael, by making concurrent appointments between neurosurgery and endocrinology on the same day and at the same time makes communication much clearer among clinicians, treatment teams, as well as the patient and family members. "Plus, it makes the process fun for us!" he adds. "We really enjoy working together, and that makes for an enjoyable experience for the patients and the rest of our team."

Next month at the Endocrine Society's Clinical Endocrinology Update 2022 in Miami, Fla., (and online), attendees will have the chance to sit in on two sessions that take a closer look at operating on the pituitary gland, "Challenging Issues in Pituitary Neurosurgery" and "Perioperative Management of Pituitary Tumors," both presented by Zada, MD, MS, FAANS, FACS, professor of neurological surgery, otolaryngology, and internal medicine, and director of the USC Brain Tumor Center at the University of Southern California in Los Angeles. (Adriana Ioachimescu, MD, PhD, professor



MRI scan of the brain, coronal view, case of pituitary mass

“That’s why I love the pituitary so much, because so many things cross paths there, including your visual system and your endocrine system and even the hypothalamus is there. **It’s so cool and it’s all in this little area.**”

— GABRIEL ZADA, MD, MS, FAANS, FACS, PROFESSOR OF NEUROLOGICAL SURGERY, OTOLARYNGOLOGY, AND INTERNAL MEDICINE; DIRECTOR, USC BRAIN TUMOR CENTER; VISITING ASSOCIATE, CALTECH; USC KECK SCHOOL OF MEDICINE, UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES, CALIF.

of endocrinology and neurosurgery at Emory University in Atlanta will join Zada for the latter session.)

Endocrine News caught up with Zada to take a look at both sessions, the challenges that surround pituitary neurosurgery — including health disparities — and how best to care for patients with pituitary tumors, from the time they agree to surgery until the time they are discharged and beyond.

Improving Techniques

Zada says that one of the ongoing issues neurosurgeons and endocrinologists face is just like the scenario he described above — making the best decision about when to operate. He points to patients with Rathke Cleft cysts, whether they should be operated on and how. Patients with prolactinomas are usually managed with medications, and Zada says that’s how it should be. “But we do get various scenarios that come up and as a surgeon, we have to work very closely with endocrinologists, which we do all the time, especially in tertiary care centers to make these decisions,” he says.

There are patients with Cushing’s disease and negative MRIs, and in those cases, Zada says he will talk about how to interpret data from various sources, including inferior petrosal sinus sampling, and he will go on to discuss how to better define the role of radiosurgery for Cushing’s. And in patients with Cushing’s and those with acromegaly, recurrent and invasive tumors continue to pose a challenge for surgeons.

But techniques have improved and risen to meet those challenges. Zada says he'll talk about the role of endoscopy in pituitary surgery, and when to use more aggressive or extended approaches, when those are appropriate for various tumors, including pituitary tumors and craniopharyngiomas. He'll also present on how to preserve the normal pituitary gland, what some strategies are, and any new technology that dovetails with those items. "An example is fluorescent tumor markers is something that's on the horizon for brain and pituitary tumors that make the tumor glow, but not normal tissue, for instance, or maybe making the normal pituitary gland glow so we can preserve it. Various optical, fluorescent strategies, that's a big one," Zada says.

Health Disparities Up Front

And then there's the systemic problem that seems to have its tentacles in everything: health disparities. Zada practices at a university and institution that has a private and a public hospital — same doctors and surgeons, but different patient populations. "We see the disparities right up front," he says. "They exist; they're real."

Zada tells *Endocrine News* that those disparities revealed the more disadvantaged patients with pituitary tumors are usually diagnosed with more advanced tumors from the outset — larger, more invasive tumors, a more pronounced hormonal hypersecretion and acromegaly and Cushing's disease, more invasive tumors, more pituitary apoplexy, which translates into hypopituitary and visual loss. "We find that that patient population presents in a completely different manner with more advanced disease," he says. "And so that's a mainstay. Then with all that, you can still provide fairly similar care for those patients if it's the same physician team. But those disparities definitely exist."

To best face these challenges, Zada says that pituitary surgery should be safe, especially at tertiary centers with high volume. A multimodal care team is often required for patients with more advanced pituitary tumors or functional pituitary tumors, Cushing's disease, acromegaly, and prolactinomas. "It really requires a team approach with an endocrinologist,

CEU2022

CLINICAL ENDOCRINOLOGY UPDATE

Challenging Issues in Pituitary Neurosurgery

Saturday, September 10, 7:55 a.m. – 8:25 a.m.
Grand Ballroom – Versailles Intercontinental Hotel

This session will discuss new updates in surgical management of pituitary tumors including surgical techniques, as well as discuss health disparities in the neurosurgical care of intracranial and pituitary tumors.

Learning Objectives:

- ▶ Review any new updates in the surgical management of pituitary tumors;
- ▶ Discuss recent advances in surgical techniques, including different surgical approaches (microscopic versus endoscopic), new neuro-navigation options; and
- ▶ Review health disparities in neurosurgical care of intracranial/pituitary tumors.

Perioperative Management of Pituitary Tumors

Saturday, September 10, 9:55 a.m. – 10:40 a.m.
Escorial/Alhambra Intercontinental Hotel

This session will give an overview of perioperative (pre-, per-, and postoperative) management of patients with pituitary adenomas.

Learning Objectives:

- ▶ Describe preoperative evaluation and surgical planning for patients preparing to undergo pituitary adenoma resection;
- ▶ Discuss inpatient management of pituitary patients; and
- ▶ Review long-term management and monitoring of patients with pituitary disease.

For more information: <https://ceu2022.endocrine.org/Home>

a neurosurgeon, a talented radiation oncologist, a neuropathologist who has good experience with these and can follow the WHO (World Health Organization) guidelines. An ophthalmologist,” he says. “Those are all really important pieces of a pituitary center to optimize care.”

The Endocrinologist's Crucial Role

And once the providers and the patient decide that surgery is indeed the best course of action, Zada will discuss how to care for that patient at every step: Preoperative lab tests carefully reviewed, thyroid and cortisol levels studied to make sure the patient doesn't need replacement before anesthesia. For patients with Cushing's or acromegaly, make sure their diabetes and blood pressure are well controlled.

Then, after surgery, Zada says that the next step depends on what type of tumor the patient has. He says he and his team check for diabetes insipidus in the first few days following the operation. “We do an AM cortisol level check in patients with no preoperative adrenal insufficiency, and we look for any evidence of new hypocortisolemia,” he says. “So that's a really important thing in terms of perioperative management.”

Zada goes on to say that as patients transition to the outpatient scenario, they can regress, and about a quarter of patients will have hyponatremia, usually from a syndrome of inappropriate antidiuretic hormone secretion. “And so,” he says, “one of the key pearls for perioperative management after surgery is to usually fluid restrict patients a little bit, and to minimize how much water they drink to avoid the development of symptomatic hyponatremia.”

Post-operation, lab testing gets specific, again depending on the type of tumor. For Cushing's, Zada and his team will follow a cortisol level every six hours until the patient drops into remission. The care team wants to see as low as possible of a cortisol level, usually around one or less. “And then for those patients, if they do bottom out and show a new low cortisol level, we will put them on hydrocortisone at a physiological


“We do get various scenarios that come up and as a surgeon, we have to work very closely with endocrinologists, which we do all the time, especially in tertiary care centers to make these decisions.”

— GABRIEL ZADA, MD, MS, FAANS, FACS, PROFESSOR OF NEUROLOGICAL SURGERY, OTOLARYNGOLOGY, AND INTERNAL MEDICINE; DIRECTOR, USC BRAIN TUMOR CENTER; VISITING ASSOCIATE, CALTECH; USC KECK SCHOOL OF MEDICINE, UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES, CALIF.

dose, and then replace them, and then they'll be able to go home,” Zada says.

“For patients with acromegaly, we get a growth hormone level the day after surgery, and that's a good predictor of remission, but the delayed IGF-1 is really the important lab test to indicate remission,” he continues. “And for prolactinoma patients, which is rare, we will get a postop day one prolactin level to assess that.”

Beyond that, patients with Cushing's are given deep vein thrombosis prophylaxis since they're prone to blood clots. And Zada says he and his team like to ambulate patients every day, keeping them active and literally keeping their heads up after surgery.

And again, Zada recognizes how crucial an endocrinologist's role is in every step of the way. After all, endocrinology is at the crossroads of just about every pathway in the body. “That's why I love the pituitary so much,” he says, “because so many things cross paths there, including your visual system and your endocrine system and even the hypothalamus is there. It's so cool, and it's all in this little area.” 

— BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. IN THE JUNE ISSUE, HE WROTE ABOUT HOW OBESITY IN MEN MAY HAVE A BIGGER IMPACT ON OSTEOPOROSIS THAN PREVIOUSLY THOUGHT.

COMPREHENSIVE CARE FOR PERSONS WITH DIABETES: A CERTIFICATE PROGRAM



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Every year the Endocrine Society recognizes endocrinologists who are in the early stages of their research careers with the Early Investigator Awards. *Endocrine News* spoke to the five researchers from around the world to find out more about their award-winning research, the award's potential impact, as well as the biggest challenges facing them today.

BY GLENDA FAUNTLEROY SHAW

Researchers ROUNDTABLE

Talking to the 2022 Early Investigators Award Winners

While their backgrounds and locales may differ broadly, the winners of this year's Endocrine Society Early Investigators Awards have one common thread of making significant contributions to endocrine-related research in the blossoming stages of their careers.

These five young researchers have persevered through the challenges of starting a new laboratory, balancing clinical obligations, and finding mentorships and funding opportunities to be recognized for their accomplishments and honored with an award established to assist in their research goals.

The 2022 winners are: **Fernando Bril, MD**, who is completing his first-year fellowship of endocrinology, diabetes, and metabolism at the University of Alabama at Birmingham; **Estelle Everett, MD, MHS**, an assistant professor at the Geffen School of Medicine at UCLA; **Lawrence Kazak, PhD**, an assistant professor in the Department of Biochemistry at McGill University, Quebec, Canada; **Tim Korevaar, MD, PhD**, in his first year of academic fellowship in endocrinology at Erasmus University Medical Center in the Netherlands; and **Omar Bello-Chavolla, MD, PhD**, is in his second year as an associate professor at the National Institute for Geriatrics in Mexico City, Mexico.

Endocrine News spoke with each of them to learn more about what the award means for their work.

What or who inspired you to apply for the award?

Everett: Since becoming a member of the Endocrine Society, I have found the Society to be very supportive of its early-career members, so I thought it would be a good idea to apply since I am in the early stages of my research career.

Korevaar: The concept of standing on the shoulders of giants inspired me to apply for this award. I am inspired by the previous winners and endocrinology staff at the Erasmus University Medical Center.

Kazak: In academia, there are few objective markers of success. Simply applying for an award is beneficial because it forces you to reflect upon your career progress and research program. It creates the opportunity for receiving feedback from your peers and gives you the chance to determine how you are perceived in your field.

Bello-Chavolla: I have been working on endocrine-related research since 2016 when I started my PhD work and have been aware of this recognition by the Endocrine Society ever



Fernando Bril, MD,
University of Alabama at Birmingham,
Birmingham, Alabama

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As an early-stage physician-scientist, I believe one of the most significant challenges we face is the increasing clinical load and pressure to maximize the number of clinics per week and the number of patients we see per clinic. Increasing clinical workload makes it very difficult to devote time to write and focus on research.

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Estelle Everett, MD, MHS,
Geffen School of Medicine at UCLA,
Los Angeles, California

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I found that it is critical to develop a support system of peer and more senior mentorship, from your own institution as well as outside one's institution in order to get the perspectives and guidance needed to be successful. The Endocrine Society has been tremendously helpful in this regard, especially through programs like Future Leaders Advancing Research in Endocrinology (FLARE).

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Lawrence Kazak, PhD,
McGill University,
Quebec, Canada

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since. I was fortunate to be able to contribute to endocrine and metabolic research in Mexico during that time and saw many very promising scientists recognized for their accomplishments. I got notified of the call for awards earlier this year and decided to give it a try, considering it would be a great step forward for my career.

Can you explain your research in a few sentences?

Bril: As a consequence of the obesity epidemic, nonalcoholic fatty liver disease (NAFLD) has become the most common chronic liver disease worldwide. Endocrinologists and primary care providers managing patients with type 2 diabetes are at center stage, as approximately two-thirds of patients with type 2 diabetes have NAFLD. In addition, patients with type 2 diabetes tend to progress faster to more severe forms of liver disease, such as nonalcoholic steatohepatitis (NASH) and NAFLD-related cirrhosis.

My main research interest has been to understand the metabolic mechanisms that promote the progression of NAFLD in obesity and diabetes, identify markers for early diagnosis, and assess pharmacological approaches that may be able to change the natural history of the disease. Unfortunately, despite its exponential growth in the last few decades, our understanding of NAFLD remains largely incomplete. Using state-of-the-art techniques, such as euglycemic hyperinsulinemic clamps with the use of stable isotopes to measure different metabolic pathways (glucose turnover, de novo lipogenesis, gluconeogenesis, and/or lipolysis rates), liver and cardiac magnetic resonance 1H-spectroscopy and elastography, and targeted/untargeted metabolomics, we have tried to fill some of the current knowledge gaps.

Everett: My research involves exploring and addressing barriers to care in vulnerable populations with type 1 diabetes. I have a particular interest in addressing inequities in access



and use of diabetes technology. I recently received a K23 award from the NIH/NIDDK to evaluate the use of hybrid closed-loop insulin pumps in those with type 1 diabetes and an A1c greater than 9% in both an academic and safety-net setting and evaluate barriers and facilitators of optimal use.

Korevaar: I perform epidemiological studies on the physiology of maternal endocrinology during pregnancy, predominantly thyroid (dys)function during pregnancy and how this affects the risk of adverse pregnancy and child outcomes. I have a special interest in fetal brain development and thyroidal hCG stimulation but am also interested in fertility, endocrine disruption, iodine availability, and levothyroxine (over) treatment. An important research line is our Consortium on Thyroid and Pregnancy, a collaboration of more than 25 prospective gestational thyroid studies in which we meta-analyze individual participant data to investigate risk patterns, high-risk subgroups, and levothyroxine treatment effects.

Kazak: My lab focuses on thermogenic adipocytes as a model system to study how cells use energy. We take an

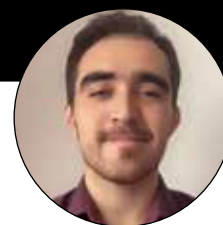


Tim Korevaar, MD, PhD,
Erasmus University Medical
Center, Rotterdam, Netherlands

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Collaboration is key for moving forward in endocrine research. Through the exposure generated by this award I hope to get in touch with fellow gestational endocrinology enthusiasts to explore symbiosis and learning opportunities.

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Omar Bello-Chavolla, MD, PhD,
National Institute for Geriatrics,
Mexico City, Mexico

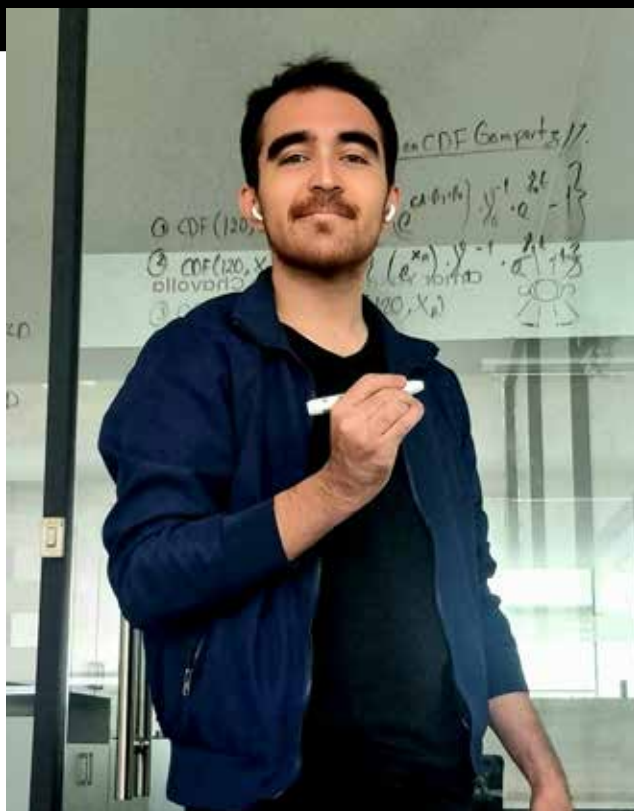
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During the COVID-19 pandemic, our work focused on characterizing the uniquely increased risk for severe COVID-19 attributable to the epidemic of cardio-metabolic diseases in Mexicans and the metabolic adaptations to severe SARS-CoV-2 infections that contribute to increased risk of severe disease and mortality independent of chronological age.

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interdisciplinary approach by using methods in molecular biology, biochemistry, bioenergetics, and mouse physiology. A central objective of my lab is to define the various metabolic pathways that promote energy dissipation in brown adipocytes.

Bello-Chavolla: I focus on statistical modeling and machine learning with epidemiological and clinical data to unravel particularities of metabolic diseases in admixed populations, with a focus on Mexican and Latin American populations. During the COVID-19 pandemic, our work focused on characterizing the uniquely increased risk for severe COVID-19 attributable to the epidemic of cardio-metabolic diseases in Mexicans and the metabolic adaptations to severe SARS-CoV-2 infections that contribute to increased risk of severe disease and mortality independent of chronological age. My more



Omar Bello-Chavolla, MD, PhD, pen in hand, teaching his graduate students the applications of statistical methods to estimate biological aging metrics to evaluate metabolic aging in humans, as part of a weekly lab session at the National Institute for Geriatrics in Mexico City, Mexico.

recent work also has been focusing in developing and applying a framework to systematize data-driven diabetes subtype classification using readily available clinical measurements to characterize diabetes and pre-diabetes heterogeneity in Mexico, the U.S., and Latin American populations.

What's the biggest challenge facing scientists who are in the early stages of their careers today?

Bril: As an early-stage physician-scientist, I believe one of the most significant challenges we face is the increasing clinical load and pressure to maximize the number of clinics per week and the number of patients we see per clinic. Increasing clinical workload makes it very difficult to devote time to write and focus on research.

Everett: Navigating a research world. This can be especially challenging for physician-scientists who are balancing clinical responsibilities, teaching, and leadership roles, as well as trying to develop themselves as a researcher. I found that it is critical to develop a support system of peer and more senior mentorship, from your own institution as well as outside one's institution in order to get the perspectives and guidance needed to be successful. The Endocrine Society has been tremendously helpful in this regard, especially through programs like Future Leaders Advancing Research in Endocrinology (FLARE).

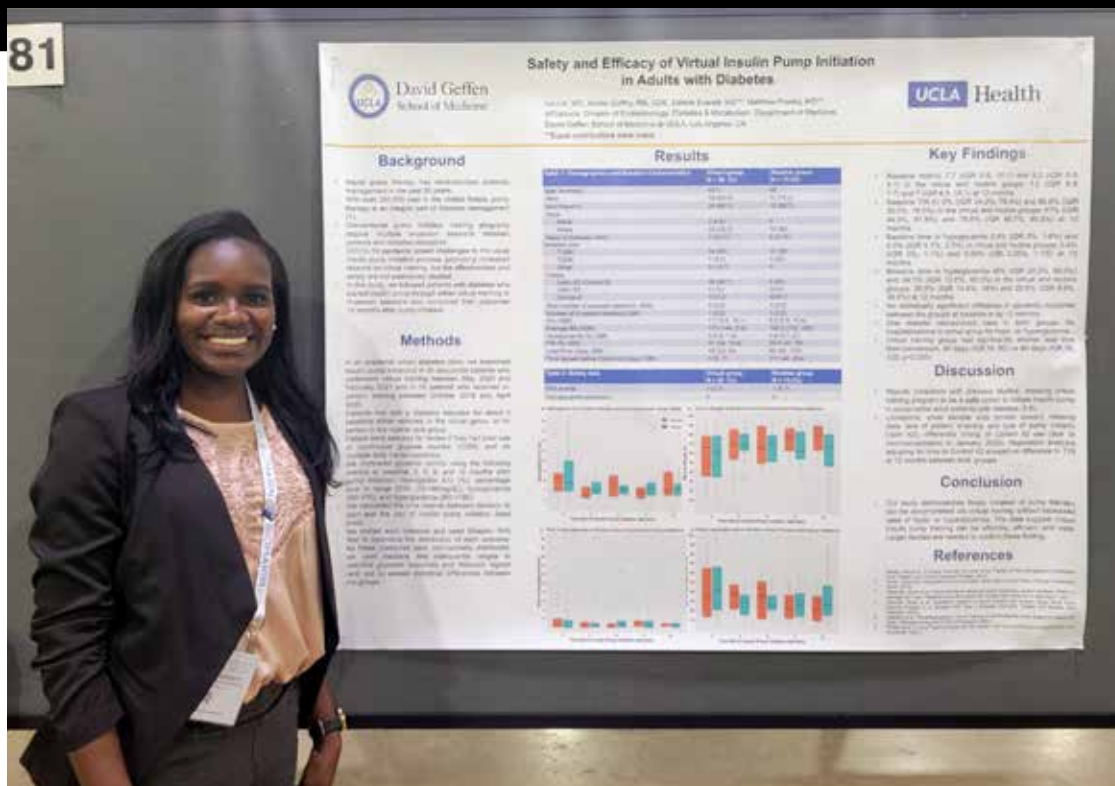
Korevaar: Forming a network of stimulating mentors around you who see you as their peer.

Kazak: Most early-career scientists are challenged by navigating how to hit the ground running with scientific progress. When you open your lab, it is typically empty. You have to think about the equipment you will need, get that equipment into the lab, and learn to use it. At the same time, you need to learn to screen/evaluate trainees. Once the lab is equipped and staffed, you need to train your personnel. You need to learn to be a mentor, which requires drastically different approaches for each lab member. All the while, you need to make the decisions on research directions, stay abreast of the literature, write grants, and go to scientific meetings. Problems at any one of these stages, can severely hamper research progress. With experience, hopefully you can master these different roles.

Bello-Chavolla: A main determinant of this is where in the world you are working as an early-career scientist. In Mexico, as in many parts of the world, we as early-career scientists routinely face age-related discrimination that hinders our eligibility for tenure promotion, grant acquisition, and access to students for mentoring. This puts us in a competitive disadvantage with more experienced researchers, who often get preference for many of these career-furthering opportunities. However, one of the biggest and most urgent problems we face as early-career researchers in Mexico and many developing countries is access to funding to engage in more challenging and complicated research questions, with many of us having to fund our research and publications with our own salaries. I believe the research community in Mexico should consider the vitality of supporting the growth and development of early-career researchers to further their academic and professional developments, as the Endocrine Society promotes with this and other awards.

How do you hope winning the Early Investigator Award will help support your goals as an endocrine scientist?

Bril: One of the most important things that I learned from Dr. Cusi, one of my mentors, is that the key to success in research is resilience (some credit goes to my mom here as



Estelle M. Everett, MD, MHS, at ENDO 2022 in Atlanta, Ga., in June with her poster abstract on the safety and efficacy of virtual insulin pump initiation in adults with diabetes.

well!). Research constitutively involves getting rejections, such as with manuscripts, grants, and proposals. It is very easy to get discouraged, especially at early stages. This award was a strong reinforcement that I must have done, at least some things, right. This recognition renewed my confidence and energy to continue my research career as a physician-scientist.

Everett: I hope this award will bring visibility to my research and interests so that I am better able to connect with other like-minded scientists with similar interests. I believe the biggest research innovations come from research collaborations.

Korevaar: Collaboration is key for moving forward in endocrine research. Through the exposure generated by this award I hope to get in touch with fellow gestational endocrinology enthusiasts to explore symbiosis and learning opportunities.

Kazak: Receiving any award can certainly boost confidence. I hope that winning the Early Investigator Award from the Endocrine Society will increase my lab's research visibility, broaden our scientific connections, and help attract trainees.

Bello-Chavolla: One of the most significant challenges I encountered early in my career as an independent scientist was how to promote my work and give visibility to the many projects we were engaging in. I believe this award will allow our work to reach many more scientists and hopefully help inspire

other early-career investigators to apply for this award and in-training researchers to continue generating invaluable research independent of the many difficulties we may encounter in our careers. Finally, I hope this award allows me to connect with other researchers and experts in the field of endocrine and metabolic research to be able to establish collaborations, which will also help me further grow as a researcher. **EN**

About the Early Investigator Award

The Endocrine Society presents the annual Early Investigator Awards to members who hold an MD, PhD, or MD/PhD and are a third- or fourth-year post-doctoral fellow or a newly appointed faculty.

Recipients receive a monetary award, one-year complimentary membership to the Society, one-year complimentary access to the Society's online journals, and public recognition of research accomplishments in various Society platforms.

Learn more about the application process and when to apply for 2023 at:
endocrine.org/awards/early-investigators-awards

A Light in the Darkness

At only six years old, Karel Pacak, MD, PhD, DSc, decided that he needed to help “those who suffer the most — cancer patients.” Pacak talks about his research, the renowned pheochromocytoma symposium he launched, and his thoughts on the next generation of physician-scientists.

BY GLENDA FAUNTLEROY SHAW



Karel Pacak, MD, PhD, DSc

Q&A with Karel Pacak, MD, PhD, DSc

Fueled at a very young age by the loss of a close family friend to cancer, Karel Pacak, MD, PhD, DSc, made it his life's goal to help patients who suffer most from the disease. As the recipient of the 2022 Outstanding Clinical Investigator Laureate Award, Pacak's work has indeed made a significant contribution to understanding and treating neuroendocrine tumors, especially pheochromocytoma and paraganglioma.

Pacak is chief of the Section on Medical Neuroendocrinology and head of the Developmental Endocrinology, Metabolism, Genetics, and Endocrine Oncology Affinity Group of the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development of the Intramural NIH Research Program in Bethesda, Md. He is also credited with establishing the most internationally recognized meeting in the field of pheochromocytoma research, the International Symposia on Pheochromocytoma.

Pacak was part of the Endocrine Society's 2014 Pheochromocytoma Task Force and currently serves as a member of *The Journal of Clinical Endocrinology & Metabolism's* Editorial Board. *Endocrine News* spoke with him to learn more about how treating cancer became his life's goal.

Endocrine News: What did news of the Laureate recognition mean to you?

Pacak: Being recognized as a Laureate Awardee is a dream come true. This is the highest privilege and honor I have received from my colleagues, and it reflects my lifetime dedication and achievements toward endocrinology, particularly endocrine oncology.

I also realize that this award is not solely my own, rather it is the culmination of sacrifice, hard work, and support from my colleagues, collaborators, clinical staff, mentors as well as my institution, the National Institutes of Health (NIH). It is these hard-working individuals and the NIH who have supported and guided me throughout the years. I am also grateful for my family and parents from whom I learned what it meant to be cared for and what it means to care for others, especially patients.

EN: Your research has shaped how we treat neuroendocrine tumors. Was there a defining moment that sparked the trajectory into this area of research?

Pacak: My trajectory started very early in life, around six years old, following the death of a close family friend. From this point on, I dreamed that one day I would help those who suffer the most — patients with cancer. I continued to dream about the ways to better understand and treat cancer. During college, I learned about biology, biochemistry, and cancer while performing experimental work at a local hospital. I would secretly admire the physician-scientists who made monumental clinical discoveries and paved the way for new therapeutic discoveries in cancer diagnosis and treatment.

During medical school at Charles University in Prague, Czech Republic, I worked alongside a team who focused on breast and colorectal cancer. After finishing medical school, I started at the 3rd Department of Internal Medicine at the First Faculty of Medicine in Prague and specialized in endocrinology. I immediately requested to work as a clinician-scientist and began to focus on endocrine tumors and catecholamines.

“ My dedication to clinical science provided me with a tremendous sense of purpose in my life: **One day, I will help to shine light in moments of darkness and to provide hope in moments of despair.**”

— KAREL PACAK, MD, PHD, DSC, CHIEF, SECTION ON MEDICAL NEUROENDOCRINOLOGY; HEAD, DEVELOPMENTAL ENDOCRINOLOGY, METABOLISM, GENETICS AND ENDOCRINE ONCOLOGY AFFINITY GROUP, *EUNICE KENNEDY SHRIVER* NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT OF THE INTRAMURAL NIH RESEARCH PROGRAM, BETHESDA, MD.

“Becoming a physician-scientist was not an easy task. I was constantly oscillating between the demanding clinical care of patients and laboratory experiments with an ultimate desire to improve the lives of patients.”

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Becoming a physician-scientist was not an easy task. I was constantly oscillating between the demanding clinical care of patients and laboratory experiments with an ultimate desire to improve the lives of patients. While I often found myself to be exhausted and neglectful of other areas of my life, my dedication to clinical science provided me with a tremendous sense of purpose in my life: One day, I will help to shine light in moments of darkness and to provide hope in moments of despair.

As a physician, I approach each patient with the utmost respect and ethics, as I understand it is a privilege to care for patients at one of, if not the most, vulnerable times in their lives. I understand that patients have unique wishes, desires, memories, and hopes. I teach my students that one day, we all will be patients. As children often judge their “value” by the time and quality that their parents spend with them, patients feel the same way when interacting with healthcare professionals.

EN: You established the International Symposium on Pheochromocytoma, and it's being held this October in Prague. How many attendees are you anticipating and what are you most looking forward to?

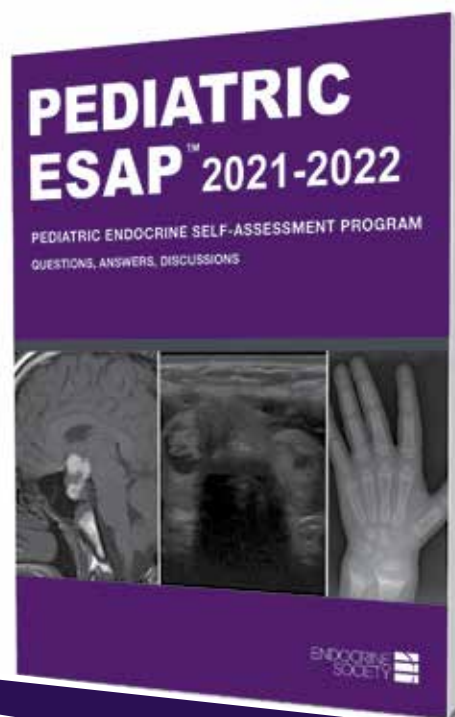
Pacak: In partnership with Graeme Eisenhofer, PhD, we created a new series of international pheochromocytoma conferences: The International Symposium on Pheochromocytoma (ISP), under the NIH for which I served as the first president in 2005. After the inaugural conference, we organized conferences in Paris, Cambridge (UK), Kyoto, and Sydney under the Pheochromocytoma Research and Support Organization (PRESSOR). Although COVID-19 has had many obvious impacts, we are optimistic that about 150 attendees, including certain patients, will participate in the upcoming conference. As outlined in our recent publication in *Nature Reviews Endocrinology*, this ISP initiative will showcase the newest advances in pheochromocytoma and paraganglioma through science, collaboration, and spreading the word.

I am excited to see the new faces of young and promising scientists and clinicians. I am looking forward to learning about how we will study and treat these tumors in the future. Whether through the use of artificial intelligence, novel membrane targets, changes in the tumor microenvironment, intratumoral immunotherapies, metabolomics, new algorithms that aid in clinical prediction, and decision-making applications of sophisticated machine learning and establishing new international clinical trials.

The younger generation is our future, and one day we will pass the baton to them so they can make even larger discoveries than we have made. It would be most rewarding to see a reflection of my passion to the field coming full circle through the achievements of these promising young scientists and clinicians. 

— FAUNTLEROY SHAW IS A FREELANCE WRITER BASED IN CARMEL, IND. SHE IS A REGULAR CONTRIBUTOR TO *ENDOCRINE NEWS*.

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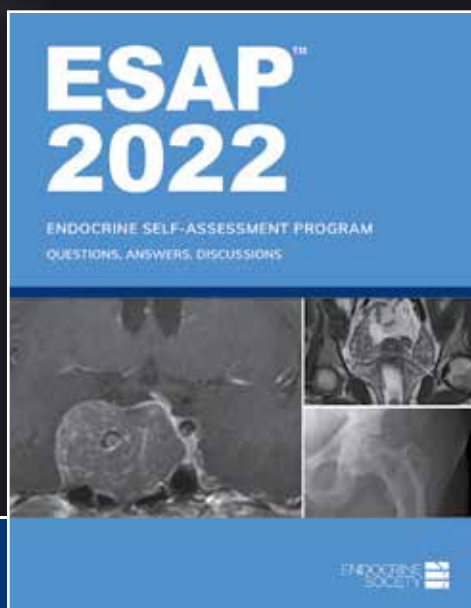


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Society Endorses Insulin Affordability Legislation; Works with Diabetes Caucus to Find Votes for Senate Passage

In June, after much negotiation, Sens. Jeanne Shaheen (D-NH) and Susan Collins (R-ME) introduced bipartisan legislation known as the Improving Needed Safeguards for Users of Lifesaving Insulin Now (INSULIN) Act. The legislation would lower the price of insulin through rebate reform and cap out-of-pocket costs for consumers to \$35 a month, which would be a major victory for patients if signed into law. The legislation would provide immediate relief to millions of people living with diabetes who have struggled to afford insulin by ensuring they pay no more than \$35 a month for this lifesaving drug. The Endocrine Society was pleased to endorse this legislation, which incorporates recommendations in our Insulin Access and Affordability Position Statement.

As this issue of *Endocrine News* went to print, Senate Majority Leader Charles Schumer (D-NY), who supports the legislation, promised to hold a vote on the bill “very soon.” The legislation will need the support of both Democrats and Republicans to get the 60 votes needed to pass in the Senate. The Society worked closely with Sens. Shaheen and Collins, who co-chair the Senate Diabetes Caucus, to secure the necessary votes to pass this legislation. The Society has reached out to specific senators who have not decided if they will vote for this legislation. We have also asked Endocrine Society members who live in states represented by undecided senators to contact them and ask them to support this legislation.

The legislation may be the last time in the next several years that the Congress acts on insulin affordability, so it is crucial that it advance. If it passes the Senate, it will also need to pass the House of Representatives. Last year, the House passed similar legislation but relied on government negotiation to reduce price. It is expected that if this legislation can get past the Senate, it will advance. Please check our advocacy page on the Endocrine Society website at www.endocrine.org/advocacy for the latest information on this issue.

NIH Funding in Limbo; Society Advocates for Research Funding Increase

All federal agencies and programs, including the National Institutes of Health (NIH), are funded through an annual congressional appropriations process. The federal fiscal year runs from October 1 through September 30, so funding bills for each new year must be completed by September 30 or risk one of two outcomes: 1) The federal government shuts

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It is crucial for the future of endocrine research that the NIH continue to receive consistent and predictable increases in funding and our members meet with representatives and senators from key districts and states to communicate how funding from the NIH directly contributes to lifesaving research.

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down until funding legislation can pass; or 2) The Congress passes a temporary funding mechanism known as a Continuing Resolution (CR), which keeps the government running at the current year's funding level.

With Congress on break for its August recess, time is drawing short to pass funding bills before the start of the new fiscal year on October 1. Legislators in both the House and Senate have done work on their respective versions of the bill that funds the NIH and many other public health programs; however, at the time this article was written, there was still no agreement on total funding levels for the government in FY 2023. Consequently, Congress is drafting bills based largely on the current year funding levels with some reference to the president's proposed budget. Absent an overall allocation, the bills give some indication of how



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Congress will prioritize certain programs; however, difficult decisions regarding specific funding amounts remain to be determined, and we expect significant changes in the final bill.

On June 29, the House Appropriations Committee released the bill text and accompanying report for its version of the FY 2023 appropriations bill that includes the NIH. The bill provides a ~\$2.5 billion increase for the NIH to a total of \$47.6 billion, with all institutes and centers (ICs) receiving at least a 3% increase. The Committee bill also included a \$5 million increase for the Office of Research on Women's Health. The accompanying report highlights important priorities that Congress would like to see addressed and includes several sections relevant to our members' interests. For instance, the report text supported research on cell-based therapies for diabetes, on polycystic ovarian syndrome and its comorbidities, and on mechanisms of endometriosis and new treatment methods. The Committee further called for \$2 million to establish a new Research Center on Sexual Orientation and Gender Identity and provides similar funding to contract with the National Academies to conduct a study on gaps in women's health research across the NIH.

While the bill and report should be commended for continuing Congress' longstanding and bipartisan commitment to

biomedical research, we note that the funding level for the NIH falls short of our recommended level of \$50 billion for FY 2023. As this article goes to press, the Senate Appropriations Committee Chair Patrick Leahy (D-VT) announced he planned to post appropriations bills before the Senate left town for August recess, but the Ranking Member Senator Roy Blunt (R-MO) noted that without the allocation, bills would be in limbo until an allocation was agreed to. Advocacy by our members will be critical in the coming weeks if potential increases for the NIH are to become a reality.

To ensure that Congress prioritizes NIH funding, the Endocrine Society will continue its advocacy seeking an increase. We are excited to announce our continued participation in the Rally for Medical Research Hill Day, which will take place in person September 14 on Capitol Hill for the first time in more than two years. Our members will join over 300 organizations in Washington, D.C., to visit members of Congress and advocate for increased funding for biomedical research. It is crucial for the future of endocrine research that the NIH continue to receive consistent and predictable increases in funding and our members meet with representatives and senators from key districts and states to communicate how funding from the NIH directly contributes to lifesaving research.

The more voices that can be heard on this issue, the larger impact we can have. To join your colleagues and make a difference, we have implemented a special online advocacy campaign that you can participate in from wherever you are. Please take one minute of your time to complete the form at www.endocrine.org/advocacy and send an email to your representative and senators. Together, our collective voices will make a strong statement to our legislators about the importance of sustained investment in biomedical research funding and help influence the funding outcome for NIH research.



FDA Reevaluates Safety of BPA, Requests Public Comments

In January, the Endocrine Society in partnership with other environmental and public health groups submitted a petition to the U.S. Food and Drug Administration (FDA) to reevaluate the safety of bisphenol-A (BPA) in light of a draft revised opinion by the European Food Safety Authority (EFSA) concluding that BPA could be harmful at much lower levels than previously assumed. In particular, the Endocrine Society is concerned about the endocrine-disrupting effects of the chemical, which the EFSA concluded may cause harm to reproductive, immune, and other systems at extremely low levels of exposure. In June, the FDA agreed to

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We appreciate the FDA's willingness to reevaluate the safety of BPA given decades of research showing the harmful properties of this chemical on endocrine health.

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accept our petition and is obligated by law to decide on BPA by October 31, 2022. As part of the reevaluation process, the FDA is opening a docket on regulations.gov for public comments about BPA.

We appreciate the FDA's willingness to reevaluate the safety of BPA given decades of research showing the harmful properties of this chemical on endocrine health. We encourage members of the Society who may be interested in filing comments as part of this process to contact Joe Laakso, PhD, director of science policy at jlaakso@endocrine.org. Comments must be submitted by September 9, 2022.



Photo: Tada Images/Shutterstock.com


Protesters are seen outside the U.S. Supreme Court Building on Thursday, June 23, 2022, in Washington, D.C., as the nation awaited the opinion that would overturn *Roe v. Wade*.

Endocrine Society Responds to U.S. Supreme Court Ruling Overturning *Roe v. Wade*

On June 24, the U.S. Supreme Court ruled in *Dobbs v. Jackson Women's Health Organization* to overturn the longstanding precedent of *Roe v. Wade* in protecting an individual's constitutional right to privacy in healthcare, specifically access to abortion.

The Endocrine Society vigorously opposes government interference in medical decisions and policies that restrict access to reproductive healthcare and use of hormonal treatments. We are deeply concerned about the impact of the *Dobbs* decision and subsequent laws on the practice of medicine; the ability of our members to treat their patients who seek hormonal care for endocrine conditions in accordance with the best medical practice; access to healthcare; and on our members' lives.

The Endocrine Society has taken the following steps in response to the *Dobbs* decision:

- ▶ We are monitoring the impact on prescribing certain medications used to treat endocrine disease and are collecting examples from our members of how they and their patients are being impacted by state restrictions.
- ▶ We have joined with other medical and scientific organizations in coalitions to oppose this decision and reaffirm that healthcare decisions should be made by an individual based on medical advice and scientific evidence.
- ▶ We successfully worked with the American College of Obstetrics & Gynecology (ACOG) and other medical societies to pass an emergency resolution at the American Medical Association's House of Delegates focused on protecting the physician patient relationship from government interference.
- ▶ We continue to advocate for access to endocrine care, reproductive care, contraception, women's health research, and education and development of a diverse workforce. 



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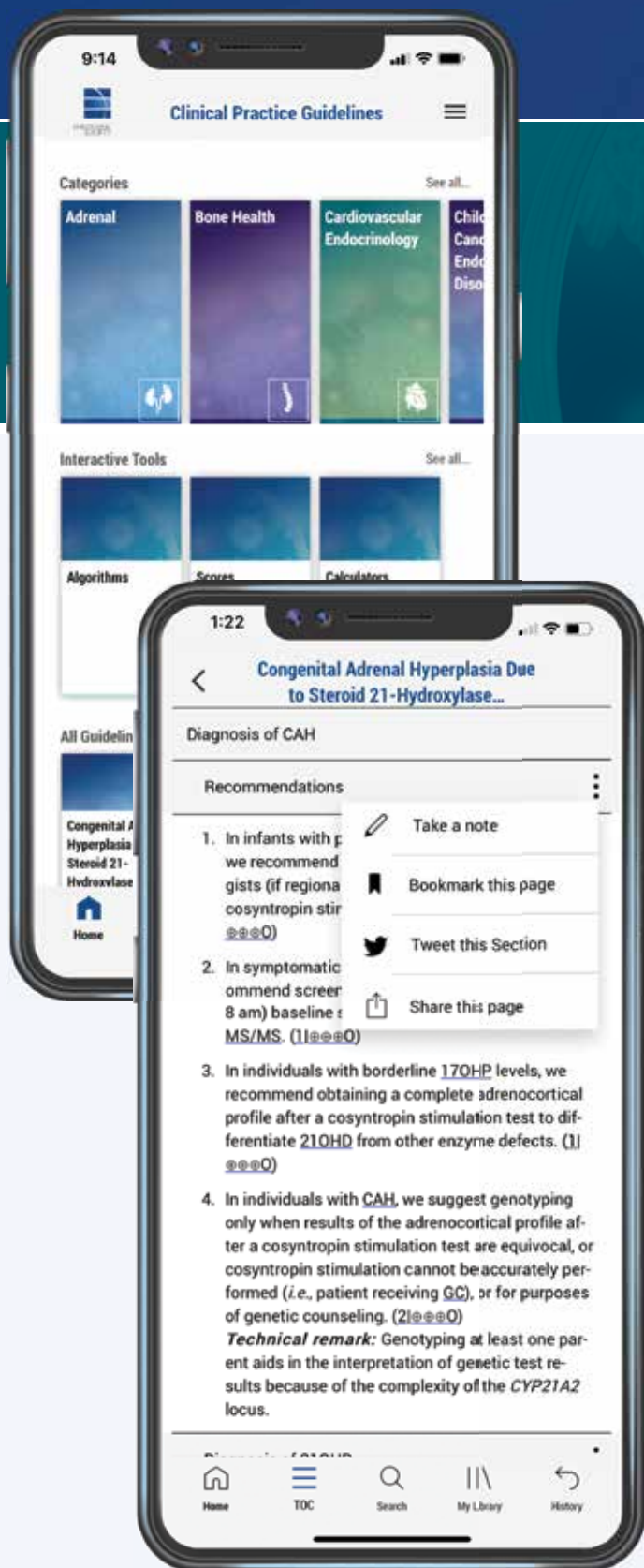


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Laboratory Champions

For 15 years, SelectScience, an independent online resource for scientists, has been conducting its own popularity contest of the year's most lauded laboratory products.

Endocrine News looks at some of the top contenders chosen by researchers like you from around the world.

COMPILED AND WRITTEN BY COURTNEY CARSON

While the ultimate goal of a lab is research, ideally that research focuses on advancements in endocrinology. But as thousands of new and improved lab products are introduced each year, some labs spend more time researching which products are worth the investment when they would prefer to devote that time to scientific research. Thankfully, SelectScience, an independent online resource for scientists, takes an annual vote on the best laboratory products in the world — allowing researchers to get back to the science.

Now in their 15th year, the awards are unique in the industry as they are chosen by scientists.

Each year, scientists around the globe are invited to participate by nominating, reviewing, and voting for the lab products that have had the greatest impact on their work. The scientists' choices for the most innovative and effective laboratory technologies were recently recognized during a special online ceremony.

Read on to reveal their chosen winners.



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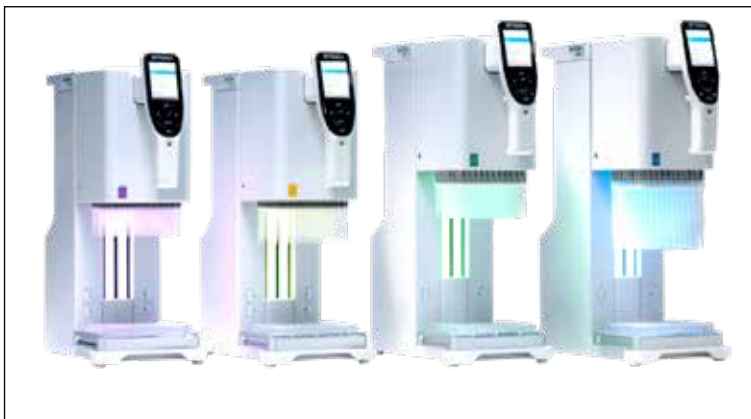
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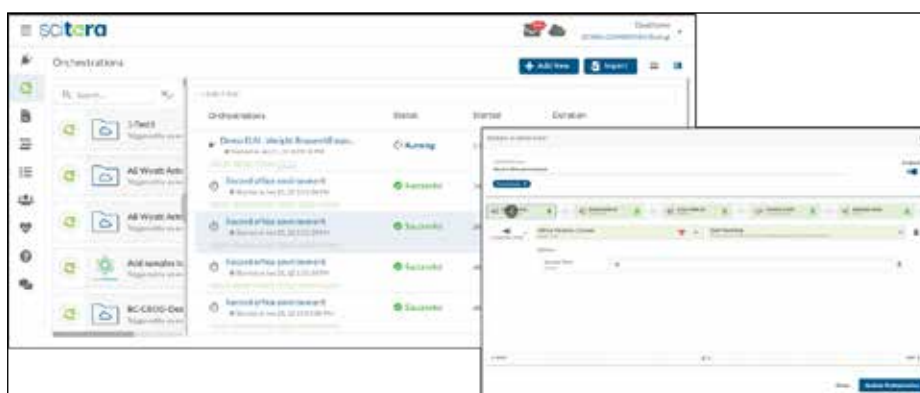




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