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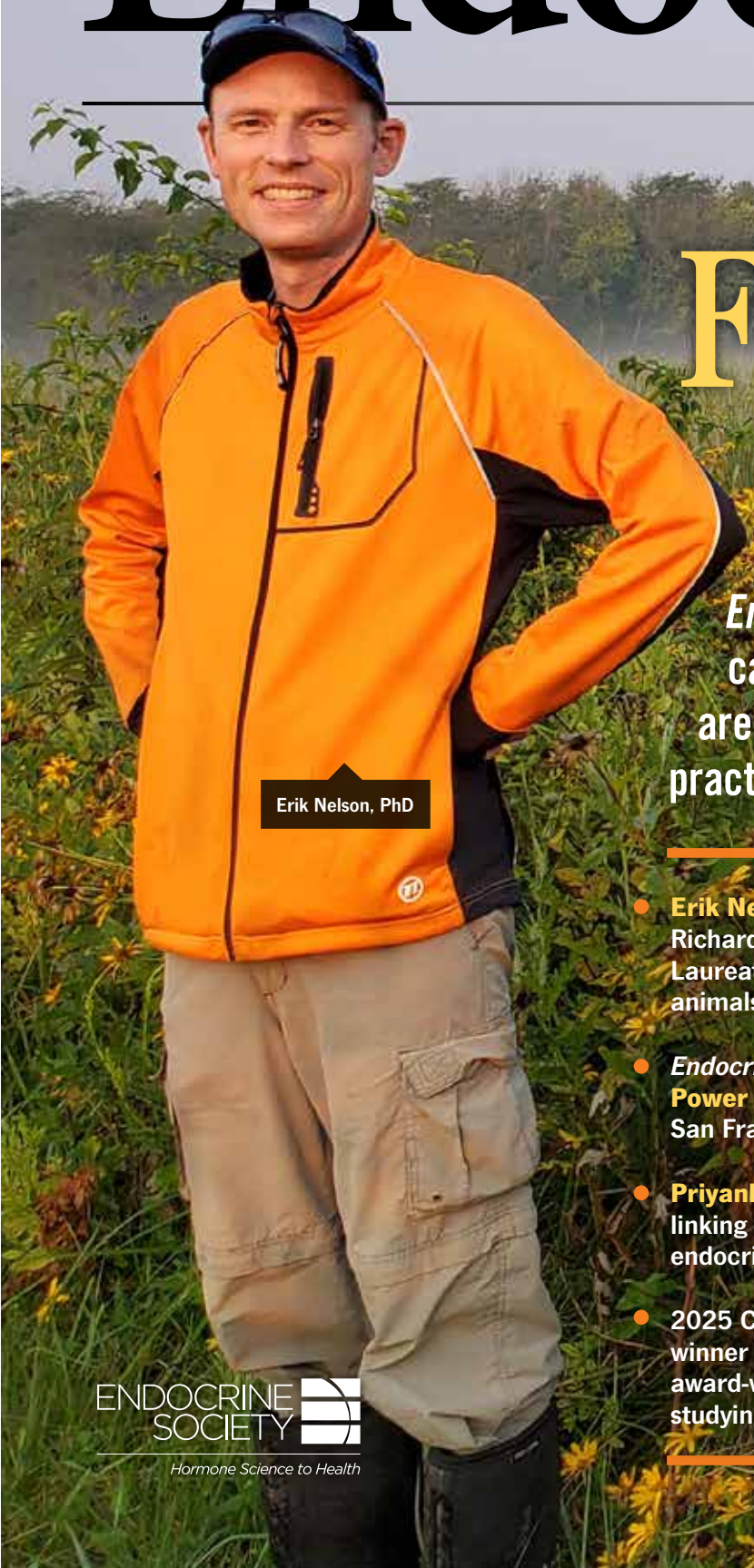
AUGUST 2025

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

Endocrine news



Field of DREAMS

Endocrine News **looks at how early-career Endocrine Society members are actively shaping the future of the practice and science of endocrinology.**

- **Erik Nelson, PhD**, the Endocrine Society's 2025 Richard E. Weitzman Outstanding Early Investigator Laureate Award recipient, shares how an early love of animals led to an endocrine research career.
- ***Endocrine News*** catches up with the **2025 Rising Star Power Talks** winners during **ENDO 2025** in San Francisco to learn more about their research.
- **Priyanka Majety, MD**, discusses her research linking type 2 diabetes and liver disease, and how endocrinologists can take the lead in treatment.
- 2025 C. Wayne Bardin International Travel Award winner **Yoshitomo Hoshino, MD, PhD**, details his award-winning **ENDO 2025** abstract and tells us why studying bone disease is his life's work.

ENDOCRINE SOCIETY
Hormone Science to Health

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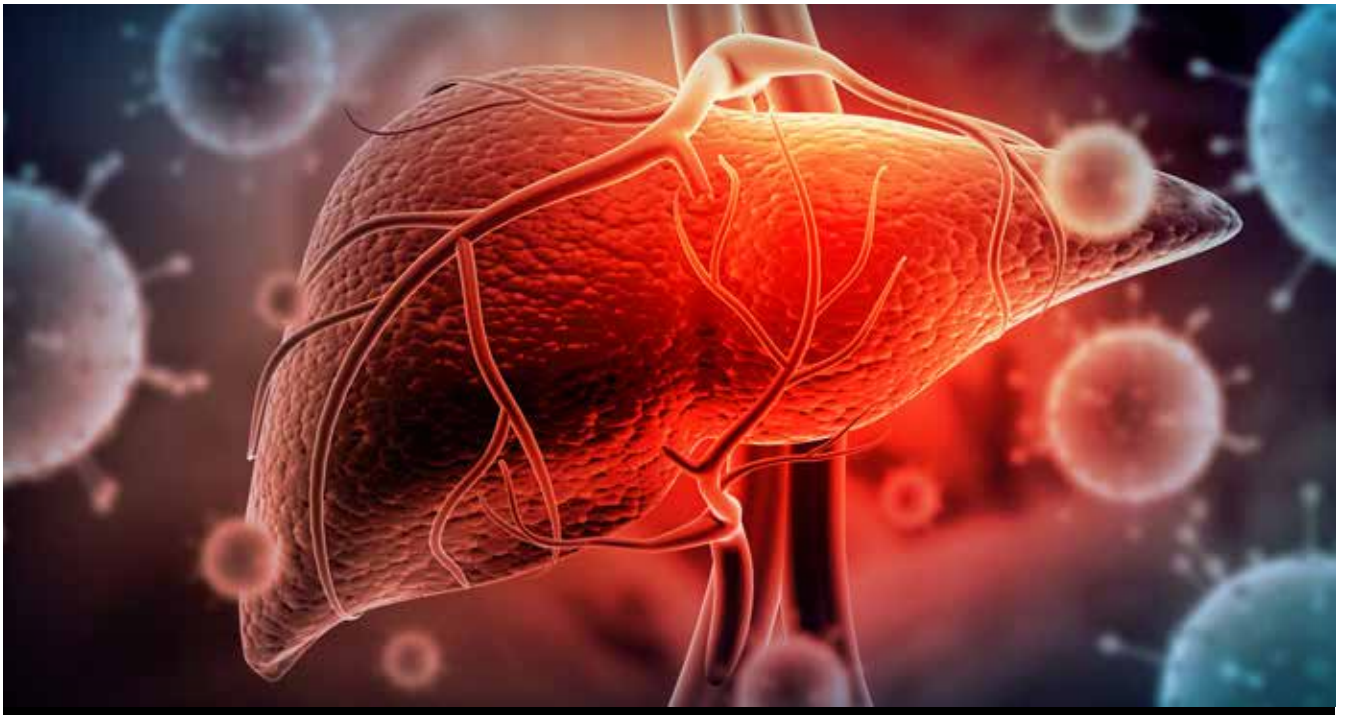

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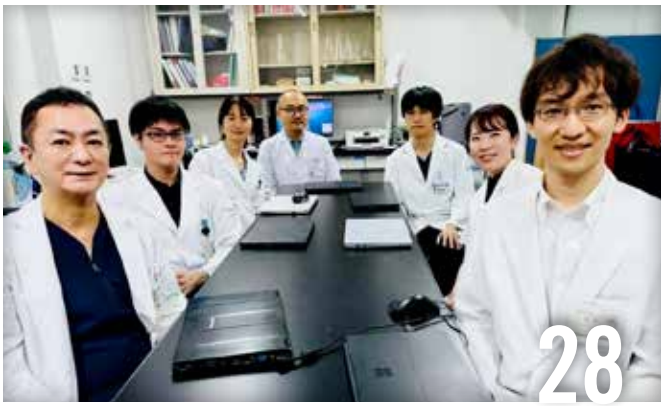

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ENDOCRINE SOCIETY
Hormone Science to Health

Society Offers CEU and EBR for Clinicians this Fall, While Planning Meetings for Researchers in Coming Year

ENDO 2025 in San Francisco, Calif., is one for the history books! Now it's time to look ahead to the Society's other marquee meetings: Clinical Endocrinology Update (CEU) 2025 and Endocrine Board Review (EBR) 2025 and, both taking place online this fall.

Member volunteers and staff have been hard at work preparing these meetings designed primarily for our clinician members. At the same time, the Society is developing a set of exciting meetings for our research members in the coming year.

As any long-time member knows, the Society takes seriously its commitment to creating top-notch meetings.

CEU and EBR offer many of the same great benefits as our annual meeting, with unparalleled learning opportunities led by some of the brightest minds in our field. For a growing number of our clinician members, CEU and EBR have become must-attend events.

CEU Provides Knowledge on Latest Advancements in Care

The larger of the two fall meetings is CEU 2025, held October 23 – 25. This meeting offers sessions on the latest advancements in hormone care across nine topical tracks. Attendees can participate in sessions of their choice and chat with speakers in real time. If you miss a session, you can catch up by viewing one of the recordings. The program includes:

- **October 23 — Day One:** Focus on diabetes management, pituitary, adrenal disorders, as well as diabetes technology, insulin therapy, and complex case management of pituitary diseases.
- **October 24 — Day Two:** Covers adrenal, thyroid, and reproductive care, featuring sessions on adrenal incidentalomas, hypogonadism, hormone therapy, and thyroid guidelines.
- **October 25 — Day Three:** Highlights obesity, lipid management, and thyroid disorders, including GLP-1 receptor agonists, type 2 diabetes in youth, NASH treatment, and thyroid hormone use.

Because it's virtual, attendees can participate from anywhere in the world. No other meeting that I'm aware of can compare in terms of content and convenience. But don't take my word for it. Our member volunteers who have designed CEU 2025 have the best take on the program.

What makes CEU especially exciting is the opportunity to learn directly from the leading experts and gain insight into the latest advancements in the diagnosis and management of endocrine disorders, notes Leonor Corsino, MD, MHS.

"In today's fast-paced clinical environment, many endocrinologists find it difficult to stay current with the rapidly evolving body of research and emerging clinical guidelines," she says. "CEU serves as a critical bridge between scientific advancement and day-to-day clinical practice."

The meeting achieves this, she adds, by offering targeted sessions on high-impact topics, such as the latest in diabetes technology, individualized treatment approaches, and patient-centered care.

"Importantly, it offers a structured and efficient way for busy healthcare professionals to access up-to-date information,

ensuring that their clinical decisions remain aligned with the latest standards and ultimately enhancing patient outcomes," Corsino says.

CEU 2025 offers up to 27 AMA PRA Category 1 Credits™. Eligible physicians may also claim up to 9 ABIM MOC points.

EBR Offers Proven System for Success

Preceding CEU in September is EBR 2025, our annual preparation program for people taking the American Board of Internal Medicine (ABIM) board certification in endocrinology, diabetes, and metabolism.

EBR is a comprehensive training program that includes a hard-bound book, online practice exams, and live Q&A sessions with subject-matter experts, on September 5 – 7. The program is considered the gold standard in preparing for the ABIM. We're so confident in the program that the Society even guarantees success or attendees will receive free registration for EBR 2026.

This program serves as a vital tool in the Society's efforts to boost the pipeline of new endocrinologists, giving early-career clinicians the confidence and knowledge they need to gain their board certification.

Again, our member volunteers who have designed the program have seen its success firsthand.

EBR offers many excellent benefits to first-time exam takers, says Sangeeta Kashyap, MD.

"Although there are many review courses, this is a vital part of board preparation," she says, noting it is "convenient and fairly short" compared with other courses.

Kaniksha Desai, MD, ECNU, adds that EBR "translates complex endocrine concepts into clear, memorable takeaways for test day."

EBR also highlights new advances in endocrinology, including this year's focus on thyroid care, which is now board relevant. Topics that will be addressed include molecular diagnostics, dynamic surveillance strategies, and new procedures such as radiofrequency ablation.

"EBR provides a structured roadmap that takes the guesswork out of studying," Desai says. "It helps build test confidence by teaching not only what to know, but how to think through tricky board scenarios."

EBR 2025 provides up to 64 AMA PRA Category 1 Credits and 64 ABIM MOC points.

Research Meetings Are Under Development

While these meetings are set for the fall, the Society also is busy developing new meetings of interest to our basic science research members that are rapidly gaining momentum.

One of particular interest to me is the **International Conference on Steroid Hormones and Receptors** (SHR). Along with Eric Prossnitz (University of New Mexico), I was honored to co-chair the inaugural 2024 meeting under the Society's auspices that was held in Albuquerque, N.M., at the University of New Mexico Comprehensive Cancer Center. SHR 2024 focused on the role of steroid hormone receptors (SRs) in health and disease and featured sessions covering a broad range of SR actions in animal and human physiology, including neurobiology, cardiology, immunology, reproduction, and cancer.

The next SHR will take place in 2026, and the Society will announce details at a forthcoming date.

I'm already excited about this event, as SHR brings together world-class scientists, researchers, physicians, post-doctoral trainees, and students working in various disciplines of steroid hormone and receptor actions in biology and medicine from all over the world.

Whether for clinicians or researchers, I look forward to all our Society meetings. EN

Carol A. Lange, PhD
President, Endocrine Society

Post-ENDO 2025 Afterglow: Saluting Early-Career Members!

I'll admit it: After **ENDO** each year I get into what I call the "post-**ENDO** funk" because, well, I enjoyed **ENDO** so much. It's kind of like the post-holiday lows many people feel after Thanksgiving, Christmas, and New Year's, but more **ENDO** focused! And **ENDO 2025** in San Francisco last month was certainly no exception. And, as it turns out, I spent a fair amount of time at early-career–related events in anticipation of this issue that highlights and lauds our early-career Endocrine Society members!

Who better to feature on this month's cover than the Endocrine Society's 2025 Richard E. Weitzman Outstanding Early Investigator Laureate Award recipient, Erik Nelson, PhD? In **"Animal Magnetism"** on page 22, Nelson talks to writer Glenda Fauntleroy Shaw about how his interest in animals and animal biology eventually led to a desire to see how chemistry and molecules work in animals, which in turn inspired him to a career in endocrinology and endocrine science. Now, Nelson and his lab are pursuing studies that focus on how cholesterol homeostasis can impact the immune system, specifically within tumors. From his research, one thing that kept popping up was cholesterol. "It turns out that if you have elevated cholesterol levels, then you are more likely to develop metastatic recurrence sooner than if you had lower cholesterol," Nelson says. "And I think even more strikingly, survivors who are taking statins or cholesterol-lowering medication tend to have a better prognosis."

One of the most well attended events at **ENDO** each year is the Rising Star Power Talks where endocrine scientists from around the world present their research in a fast-paced "lightning round" that is rated by a panel of judges as well as the attendees in the room. This year's event was no exception, and I grabbed the winners before they scattered throughout the Moscone Center on Sunday July 13 after their presentations to find out more about their winning science, their future research goals, and even the impact the Endocrine Society has had on their careers in **"Star Power 2025"** on page 32. Translational Science winner Rossella Cannarella, MD, PhD, from the University of Catania, in Catania, Italy, says that the Society has played a pivotal role in shaping both her academic and research careers. "Its conferences, publications, and professional network have provided both inspiration and critical feedback that have helped me refine my research questions and methodologies," she says. "Being part of a global

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community committed to advancing endocrine science is deeply motivating. The Society's support for early-career researchers and its emphasis on translational research have been especially valuable."

On page 42, Senior Editor Derek Bagley speaks with Priyanka Majety, MD, about her recent research that details the relationship between type 2 diabetes and liver disease, both of which continue to markedly increase, in **"Vicious Cycle."** She says that endocrinologists are uniquely positioned to address this crisis since insulin resistance is a central issue because it promotes fat accumulation, oxidative stress, and inflammation, which worsen insulin resistance, thus creating a "vicious cycle," adding that "[Metabolic Dysfunction-associated Steatotic Liver Disease] (MASLD) worsens glycemic control by contributing to systemic insulin resistance and altering glucose metabolism. This interplay not only accelerates liver disease progression but also increases the risk of cardiovascular and kidney complications."

In **"Pacific Overtures"** on page 28, Glenda conducts a Q&A with the Endocrine Society's 2025 C. Wayne Bardin International Travel Award Winner Yoshitomo Hoshino, MD, PhD. A physician-scientist and an in-training Endocrine Society member from Tokyo, Japan, Hoshino was grateful for the opportunity to present his research at **ENDO 2025** last month. He tells us more about his award-winning abstract, how studying bone disease became his life's work, and his future research goals. Glenda's work is also featured on page 46 in this month's Laboratory Notes column that details **"Putting Your Research Paper in the Spotlight,"** an important achievement for scientists and researchers at all stages of their careers, but especially vital for endocrinologists still at the dawn of their lifetime of achievements. In other words, getting your paper in a prestigious peer-reviewed journal is just the first step in presenting your work to a broader audience.

Enjoy this look at the Endocrine Society's early-career members and their accomplishments. I have no doubt we'll see much more of them in future issues of *Endocrine News*!

As usual, if you have any comments or suggestions, feel free to reach out to me at: **mnewman@endocrine.org**.

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

Clarification

Due to a production error, the names of the studies featured in the June issue's **Trends & Insights** column were not included.

They are:

- Body Mass Index Triples Overweight Prevalence in 7,600 Children Compared with Waist-to-Height Ratio: the ALSPAC Study. ***Obesity and Endocrinology***, 2025, 1, wjaf002. https://doi.org/10.1093/obendo/wjaf002
- Impact of Surreptitious Glucocorticoids in Over-the-Counter Arthritis Supplements. ***Journal of the Endocrine Society***, 2025, 9, bvae227. https://doi.org/10.1210/jendso/bvae227
- Utility of Salivary Cortisol and Cortisone in the Diagnostics of Adrenal Insufficiency. ***The Journal of Clinical Endocrinology & Metabolism***, 2025, 110, 1218–1223. https://doi.org/10.1210/clinem/dgae486

Thank you to Sanjay B. Dixit, MD, for pointing out this oversight.

Endocrine Society Members Discuss Obesity and Heart Health on Capitol Hill

On July 24, the Endocrine Society hosted an educational briefing for congressional staff entitled "Beyond the Scale: How GLP-1 Medications are Redefining Obesity and Heart Health," which turned out to be a big success.

The briefing was attended by congressional staff from both sides of the aisle to hear Endocrine Society members Joshua Joseph, MD, MPH, associate professor of internal medicine and endowed professor for research in the Department of Internal Medicine at The Ohio State University College of Medicine in Columbus, Ohio, and Jonathan Q. Purnell, MD, professor at Oregon Health and Science University in Portland, explain how GLP-1s work and the connection between obesity and heart disease.

The Endocrine Society delivered scientific information that will help congressional offices prioritize obesity policy and influence their positions. Because the Society is considered a credible and trustworthy source, congressional staff were eager to learn more about anti-obesity medications and how obesity affects other chronic diseases. In fact, the staffers found the session so engaging that they stayed 40 minutes after the end of the allotted time to ask more questions.

"The most important element of today was really engaging with members of Congress around the importance of obesity prevention and obesity management," Joseph says. "We talked a lot about how obesity is really at the forefront of many of the chronic conditions that we see, it being a chronic condition itself. But the links with obesity and heart disease and how those links occur through hypertension, diabetes, chronic kidney disease, liver disease, and the ultimate one, inflammation."

Pictured at the Endocrine Society's session on obesity and heart health on Capitol Hill on July 24 are (left to right) Rob Goldsmith, director of advocacy, Endocrine Society; Joshua Joseph, MD, MPH; Mila Becker, chief advocacy officer, Endocrine Society; Mya Walters, manager, health policy and advocacy, Endocrine Society; and Jonathan Q. Purnell, MD.

Following the briefing, Joseph, Purnell, and Society staff paid visits to their congressional delegations to spend more time talking about obesity policies and funding for the National Institutes of Health.

Purnell says that he and Joseph were emphasizing that when it comes to dealing with weight, there's a biology underpinning patients' expression of unwanted weight gain, "and that with this understanding of the biology we can still emphasize the chronic disease management paradigm of the important role of lifestyle." He adds that often lifestyle changes are not sufficient for most patients who want to lose weight so having even more "tools in our toolbox like access to obesity medicines, including the GLP-1s, is vital to our giving optimal care to improve health for our patients."

New Endocrine Society Guideline Calls for Screening of Common High Blood Pressure Culprit

Endocrine Society experts encouraged more widespread screening for a common hormonal cause of high blood pressure known as primary aldosteronism in a new Clinical Practice Guideline released during **ENDO 2025** in San Francisco, Calif..

"Primary Aldosteronism: An Endocrine Society Clinical Practice Guideline" was published online and was presented at **ENDO 2025** in San Francisco last month.

A significant minority of people who are diagnosed with hypertension, or high blood pressure, actually have undiagnosed primary aldosteronism. An estimated 5% to 14% of people with high blood pressure seen in primary care and up to 30% seen in referral centers have primary aldosteronism.

Many individuals with hypertension never receive a blood test for primary aldosteronism. When the condition is not diagnosed and treated, it raises the risk of cardiovascular complications, including stroke, coronary artery disease, atrial fibrillation, heart failure, and renal disease.

"People with primary aldosteronism face a higher risk of cardiovascular disease than those with primary hypertension," says the guideline's writing group chair, Gail K. Adler, MD, PhD, of Brigham and Women's Hospital and Harvard Medical School in Boston, Mass. "With a low-cost blood test, we could identify more people who have primary aldosteronism and ensure they receive the proper treatment for the condition."

Primary aldosteronism occurs when the adrenal glands — the small glands located on the top of each kidney — produce too much of the hormone aldosterone. This causes aldosterone, which helps balance levels of sodium and potassium, to build up in the body. High blood pressure is typically the only symptom of the condition.

The guideline suggests that everyone who is diagnosed with hypertension have their levels of aldosterone, renin, and potassium checked. The guideline authors opted to suggest universal screening, rather than making a stronger recommendation, because the blood test can return false positives.

The guideline authors suggested patients who are diagnosed with primary aldosteronism should receive treatment specific to the condition. Treatment options include medications and surgery.

Other members of the Endocrine Society writing committee that developed this guideline include: Michael Stowasser of the University of Queensland in Brisbane, Australia; Ricardo R. Correa of the Cleveland Clinic and Lerner College of Medicine in Cleveland, Ohio; Nadia Khan of the University of British Columbia in Vancouver, Canada; Gregory Kline of the University of Calgary in Calgary, Canada; Michael J. McGowan of the Primary Aldosteronism Foundation in Phoenix, Ariz.; Paolo Mulatero of the University of Torino in Torino, Italy; Rhian M. Touyz of McGill University in Montreal, Canada; Anand Vaidya of Brigham and Women's Hospital and Harvard Medical School; Tracy A. Williams of the Ludwig Maximilian University of Munich in Munich, Germany; Jun Yang of the Hudson Institute of Medical Research in Victoria, Australia; Maria-Christina Zennaro of Inserm and the Assistance Publique-Hôpitaux de Paris in Paris, France; and M. Hassan Murad, William F. Young, and Juan P. Brito of the Mayo Clinic in Rochester, Minn.

The guideline will appear in the September 2025 print issue of *The Journal of Clinical Endocrinology & Metabolism* (JCEM), a publication of the Endocrine Society. The guideline updates recommendations from the Society's 2016 guideline on primary aldosteronism.

This Clinical Practice Guideline was co-sponsored by the American Association of Clinical Endocrinologists, the Primary Aldosteronism Foundation, the European Society of Hypertension, the American Heart Association, the European Society of Endocrinology, and the International Society of Hypertension.

More in-depth coverage of this new guideline is scheduled to appear in next month's edition of *Endocrine News*.

New Scientific Statement Proposes Research Efforts to Improve Treatment Options for People with Type 1 Diabetes

Last month, the Endocrine Society released a new Scientific Statement that highlights potential research directions related to the pathogenesis of type 1 diabetes that should help with the development of new and improved treatment options.

Type 1 diabetes requires lifelong insulin administration and may result in complications such as eye, kidney, nerve, and heart disease, and is often thought to be a disease of children and adolescents. However, it is now recognized that type 1 diabetes often has its onset in adults and can occur at any age.

The Endocrine Society develops Scientific Statements to explore the scientific basis of hormone-related conditions and diseases, discuss how this knowledge can be applied in practice, and identify areas that require additional research. Topics are selected on the basis of their emerging scientific impact. Scientific Statements are developed by a task force of experts appointed by the Endocrine Society, with internal review by the relevant Society committees and expert external reviewers prior to a comment period open to all members of the Society.

"The Endocrine Society chose type 1 diabetes for a Scientific Statement because research related to type 1 diabetes is rapidly expanding, and the field is poised for new advances. The hope is that the Scientific Statement will provide scientists, physicians, and funding agencies with a guide for areas of research that seem particularly promising," says Alvin C. Powers, MD, of Vanderbilt University Medical Center in Nashville, Tenn., a member of the writing group.

The causes and factors that lead to type 1 diabetes are unknown. The Scientific Statement summarized research and suggested directions for new research in these areas related to type 1 diabetes: genetics, heterogeneity, pathology of the pancreas, assessment of β cell function and mass, immunologic biomarkers in peripheral blood, changes in the exocrine pancreas, and screening to identify individuals at-risk for type1 diabetes.

"The data highlights the need for population-based screening for type 1 diabetes and more research into the causes of the disease," Powers says. "We hope addressing these research gaps and incorporating more widespread screening efforts will help identify those at risk sooner and improve treatment and long-term health outcomes for people living with type 1 diabetes."

The statement is based on the authors' updated version of the widely cited and often modified Eisenbarth model, which outlines the different stages of progression to type 1 diabetes. The Scientific Statement proposes that Stage 0 be added to this model, which already included Stages 1, 2, and 3, to highlight that there are likely events occurring earlier in the disease that currently are not understood or being studied.

"We hope that research in these areas infused with information from the application of emerging technological and analytical tools will lead to a new understanding of the pathogenesis of type 1 diabetes," Powers concluded.

Other statement authors are Aaron Michels of University of the Colorado School of Medicine in Denver, Colo.; Todd Brusko of the University of Florida in Gainesville, Fla.; Carmella Evans-Molina of Indiana University School of Medicine and the Roudebush VA Medical Center in Indianapolis, Ind.; Dirk Homann of the University of Miami, Miami, Fla.; and Sarah Richardson of the University of Exeter Medical School in Exeter, U.K.

The statement, *"Challenges and Opportunities for Understanding the Pathogenesis of Type 1 Diabetes: An Endocrine Society Scientific Statement,"* was published online in the Society's *Journal of Clinical Endocrinology & Metabolism*. EN

Dual Hormone Therapy Boosts Adult Height in Boys with Unexplained Short Stature

By adolescence, most of our adult height is already achieved — only about 15% – 20% remains to be gained. This means that time is of the essence for those with idiopathic short stature (ISS), or children whose height is significantly below the average for their age and sex but without a readily identifiable medical cause. But time extension is now possible according to the recently published *The Journal of Clinical Endocrinology and Metabolism* article titled, "The combination of aromatase inhibitors and growth hormone treatment for idiopathic short stature in male adolescents."

Typically, recombinant human growth hormone (rhGH) is used to delay bone maturity and promote height growth in teens with ISS. Yet, this treatment is expensive and requires painful injections. Research has shown that third-generation aromatase inhibitors (AIs), such as letrozole and anastrozole, combined with rhGH, can inhibit estrogen synthesis, delay the progression of bone age, and increase adult height of children. However, this treatment for pubescent boys remains off-label or not U.S. Food and Drug Administration approved for this purpose, until further efficacy studies, such as this one, are performed.

The study authors collected data over the past seven years from 96 adolescent boys with ISS ≥13 years who received treatment for more than 18 months at Tongji University in China. All patients received rhGH and either letrozole, anastrozole, or a gonadotropin-releasing hormone analogue (GnRHa), another standard treatment for ISS. Researchers followed the patients every three months until adult height, measuring hormone levels, the difference of predicted adult height for each treatment, and height velocity via blood tests and dual x-ray absorptiometry (DXA) every year. Additionally, the researchers reviewed height, body weight, and secondary sex characteristics, such as facial and body hair growth, every six months to one year after treatment.

Compared with the letrozole and GnRHa groups, the anastrozole and rhGH combination group showed the most significant increase in adult height. Absolute adult height achieved averaged 173.2 cm with anastrozole, versus 171.8 cm with letrozole and 170.4 cm with GnRHa. Similarly, the predicted adult height increase was larger with anastrozole (~11.06 cm) versus letrozole (~9.77 cm) and GnRHa (~8.09 cm). Previous clinical trials and meta analyses have shown that AI monotherapy or combinations with GH can lead to 2 – 4 cm gains in predicted or final height compared to controls.

Additionally, the anastrozole and rhGH group had fewer adverse reactions brought on by hyperandrogenism or excess testosterone, such as increased body hair, severe acne, and irritability, than the other two. Most of these adverse reactions were mild or disappeared after stopping the AI or adding the anti-androgen drug spironolactone.

As the field awaits larger, long-term outcome data, this study represents an important step forward in refining hormonal strategies to support growth potential in adolescents with idiopathic short stature.

The study authors note that long-term studies on cardiovascular and reproductive health of ISS patients who use this combination therapy are needed. They also state that use of this therapy should be on a patient-to-patient basis.

"Clinicians should consider the child's individual characteristics and weigh the benefits of various treatments to select the optimal strategy," the authors write. — *Jackie Oberst*

"The study authors note that long-term studies on cardiovascular and reproductive health of ISS patients who use this combination therapy are needed. They also state that use of this therapy should be on a patient-to-patient basis."

> While encouraging, the findings are based on a relatively small number of studies with varied protocols. Long-term outcomes — particularly regarding fertility — remain to be fully evaluated.

Doctors Recreate 'Mini-Puberty' to Aid Testicular Development in Male Infants with Rare Disorder

A recent systematic review published in *The Journal of Clinical Endocrinology & Metabolism* confirms that early hormone therapy can effectively recreate "mini-puberty" in male infants born with congenital hypogonadotropic hypogonadism (CHH) — a rare condition characterized by insufficient hormone production during early infancy.

In healthy boys, a temporary surge of hormones shortly after birth — known as mini-puberty — stimulates genital growth and activates the development of sperm-supporting Sertoli cells through the hypothalamic-pituitary-gonadal (HPG) axis. But in infants with CHH, this crucial phase doesn't occur, leading to conditions like micropenis and undescended testes (cryptorchidism).

CHH is often diagnosed in adolescence when patients present with delayed or absent puberty. At that point, treatment typically includes testosterone therapy and sometimes surgery, but despite this, patients can suffer from psychological distress, reduced bone density, and limited success with fertility treatments due to underdeveloped Sertoli cells.

However, early diagnosis is possible — especially in newborns who show "red flag" signs like micropenis, undescended testes, cleft lip and palate, ear and finger abnormalities, hearing loss, lack of smell, and underdeveloped kidneys. Recent studies suggest that pituitary gonadotropin hormone replacement during infancy can promote both testicular descent and Sertoli cell development, potentially improving long-term reproductive outcomes.

"Mini-puberty offers a small window of opportunity both to diagnose and treat CHH early in childhood," the lead author Sasha Howard from Queen Mary University of London, U.K., and her research team write. "Combined gonadotropin therapy in infancy holds promise for both immediate and long-term improvements in fertility and quality of life."

The review, "Gonadotropin Therapy for Mini-Puberty Induction in Male Infants With Hypogonadotropic Hypogonadism," analyzed data from 11 studies across seven countries, involving 71 male infants with CHH. On average, treatment began at just over four months of age for two- to seven-year duration, with follow-up ranging from three to 10 years. Gonadotropin therapy, administered via injections or infusion pumps, included luteinizing hormone (LH), follicle-stimulating hormone (FSH), and often human chorionic gonadotropin (hCG) to mimic the natural hormonal patterns of mini-puberty.

Results were promising. Post-treatment, penile length nearly doubled and approached typical size. Hormonal markers such as inhibin B and testosterone increased significantly, indicating healthy Sertoli and Leydig cell function. Testicular descent was achieved fully or partially in about 73% of cases, potentially reducing the need for future surgery. The treatments were generally well tolerated, with only mild side effects, such as nausea, initial sleep disturbance, and increased body hair reported, and no serious complications.

While encouraging, the findings are based on a relatively small number of studies with varied protocols. Long-term outcomes — particularly regarding fertility — remain to be fully evaluated. The authors call for larger, standardized trials and international registries to track long-term effects.

These results suggest that mimicking mini-puberty in boys through early hormone therapy could lay the foundation for normal genital development and future fertility. Though more research is needed, this therapeutic window offers a promising pathway for treating a condition that can significantly affect lifelong reproductive health. — *Jackie Oberst*

Phthalates Pose Significant Cardiovascular Disease Risk

A groundbreaking global international analysis published in *eBioMedicine* (via *The Lancet*) has quantified the worldwide cardiovascular toll attributed to di-2-ethylhexyl-phthalate (DEHP) — a common plastic additive used to soften the plastic polyvinyl chloride (PVC), which is found in everyday objects such as vinyl records, pipes, and cosmetics. In 2018 alone, DEHP exposure accounted for an estimated 356,238 deaths among adults ages 55 to 64 years, representing 13.5% of all cardiovascular disease (CVD) deaths in that age group.

Conducted by New York University Grossman School of Medicine researchers, the study — "Phthalate exposure from plastics and cardiovascular disease: global estimates of attributable mortality and years life lost" — leveraged exposure data from prior population surveys and cardiovascular mortality statistics from the Institute for Health Metrics and Evaluation (IHME). The team used established hazard ratios to correlate DEHP blood levels with increased CVD mortality, estimating both death counts and years of life lost (YLL).

The burden is heavily concentrated in regions undergoing rapid plastic production and use. Areas including South Asia, East Asia, the Pacific, and the Middle East together accounted for nearly three-quarters (73%) of the DEHP-linked deaths. The study attributed this elevated risk to fewer manufacturing controls and higher levels of plastic production in these areas.

"The findings underscore the need for urgent global and local regulatory interventions to curb mortality from DEHP exposure," lead author Sara Hyman and her colleagues write.

DEHP and related phthalates have long been suspected to be hormone disruptors and metabolic disruptors. They contribute to oxidative stress, vascular inflammation, atherosclerosis, obesity, and type 2 diabetes — all key drivers of CVD. In February 2022, the United Nations Environment Assembly launched negotiations for a global treaty aimed at ending plastic pollution. However, countries with large petrochemical industries have pushed back against proposals to limit plastic production and use, downplaying concerns by claiming that the chemicals in plastics pose minimal health risks.

By integrating their estimated CVD burden into ongoing negotiations or a binding Global Plastic Treaty, the study authors urge governments to reduce plastic additive exposure and enhance safety standards. Public health measures suggest phasing out DEHP usage in food, packaging, medical, and personal care products, strengthening industrial regulations in high-production regions, and promoting safer alternatives and raising awareness about daily exposures from plastics in food containers, beauty items, medical supplies, and household goods. Other suggested action items are improving labeling requirements and waste management practices.

This analysis reinforces growing evidence that plasticizers are more than environmental contaminants — they pose a serious and direct threat to human health. The authors estimate that exposure to DEHP alone results in the loss of more than 10 million years of life annually, disproportionately affecting vulnerable populations. These findings offer urgent justification for phasing out hazardous plastic chemicals — not only to promote environmental sustainability, but also to prevent hundreds of thousands of premature deaths each year. It stands as a clear warning: Reducing reliance on toxic plastic additives must become a central priority in both public health and environmental policy. — *Jackie Oberst* EN

"This analysis reinforces growing evidence that plasticizers are more than environmental contaminants — they pose a serious and direct threat to human health. The authors estimate that exposure to DEHP alone results in the loss of more than 10 million years of life annually, disproportionately affecting vulnerable populations."

2025 Endocrine Board Review/Clinical Endocrinology Update

EBR 2025

ENDOCRINE BOARD REVIEW

Sept. 5 – 7, 2025/Virtual Only

EBR is an intensive online learning program for fellows, practicing endocrinologists, and other healthcare professionals preparing for the American Board of Internal Medicine's (ABIM's), Endocrinology, Diabetes, and Metabolism Certification Exam.

In use for more than a decade, EBR stands out as a leading program for invaluable insights directly from medical experts involved in developing the exam. These specialists understand the exam's nuances and will share essential strategies for success. EBR features case-based questions aligned with the ABIM blueprint, complemented by highly effective tools to bolster your confidence as you gear up for your board exam.

Join us for an immersive review of endocrinology to advance your knowledge and succeed in your board certification exam!

https://www.endocrine.org/meetings-and-events/ebr-2025/

CEU 2025

CLINICAL ENDOCRINOLOGY UPDATE

Oct. 23 – 25, 2025/Virtual Only

Join endocrinologists and other healthcare professionals for updates on how to treat various endocrine conditions based on the latest expert guidelines in hormone care. With recent breakthroughs in different areas of the ever-evolving field of endocrinology, staying abreast of innovative practices is essential for optimal patient treatment.

CEU 2025 provides a convenient solution for busy professionals by delivering first-rate education they can immediately implement into their practice. For over a decade, our program has been led by renowned endocrinologists, offering a case-based agenda and evidence-based disease management strategies to equip practitioners with the tools they need to address daily clinical challenges.

CEU is virtual, ensuring accessibility through our online platform. Our expert faculty will cover important endocrinology topics, including adrenal, calcium and bone, diabetes, pituitary, obesity and lipids, female reproduction, male reproduction, transgender care, and thyroid.

With Meet the Professor sessions and a symposium filled with expert insights, this program offers a valuable learning experience for endocrinologists worldwide. Do not miss this opportunity to enhance your knowledge and skills in hormone care. Join us online, and stay ahead in the field of endocrinology!

https://www.endocrine.org/meetings-and-events/ceu-2025

WEBINAR

ENDOCRINE SOCIETY

Hormone Science to Health

Endocrine Society Webinars

The Endocrine Society holds webinars throughout the year on many topics, from clinical practice and basic research to career development, advocacy, and more. Check below for information on upcoming webinars and links to previous events. Visit our Center for Learning for a full list of Society educational offerings.

Past webinars have included Using Teriparatide: Combination and Sequential Therapies; Update in Primary Aldosteronism; Diabetes and Physical Activity; Evaluation and Management of Congenital Adrenal Hyperplasia; Endocrinopathies Associated with Checkpoint Inhibitor Immunotherapy; and so much more! Webinars are free for Endocrine Society members.

https://education.endocrine.org

ASBMR 2025 Annual Meeting

Seattle, Washington
September 5 – 8, 2025

The ASBMR Annual Meeting is the world's largest and most diverse meeting in the bone, mineral, and musculoskeletal research field, attracting more than 2,500 attendees from more than 50 countries, including clinicians and researchers, representing all career levels and specializing in a variety of disciplines. The ASBMR Annual Meeting boasts nearly 100 education sessions and 1,000 poster presentations in four information-filled days. Upon returning home from the meeting, attendees will be able to discuss with confidence the most current and significant advances in biomedical and clinical research and develop and apply new and enhanced strategies for treatment and care of patients.
https://www.asbmr.org/annual-meeting

2025 ATA Annual Meeting

Scottsdale, Arizona
September 10 – 14, 2025

The 2025 American Thyroid Association Annual Meeting will be the largest gathering of thyroidologists in the world! With a diverse program planned, attendees can customize their experience by attending sessions that are most important to their professional development. 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.
https://www.thyroid.org/2025-annual-meeting/

Neuroscience 2025

San Diego, California
November 15 – 19, 2025

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-2025/

INTERNATIONAL **ITINERARY**

Adipose Biology Conference

Montreal, Quebec, Canada
August 19 – 20, 2025

The Adipose Biology Conference is a dynamic platform that unites scientists at all career stages, fostering collaboration, knowledge exchange, and mentorship to propel groundbreaking advancements in mechanisms of adipose tissue biology.
https://www.adiposebiology.com/

54th Annual Conference of Endocrine Society of India

Kolkata, West Bengal, India
September 4 – 7, 2025

ESICON 2025 promises to be a confluence of ideas, innovation, and interaction, bringing together leading experts, researchers, and clinicians interested in endocrinology. The recent advances in molecular endocrinology, diabetes care, obesity, bone health, and reproductive endocrinology have redefined our approach to patient care. India, and particularly academic centers across the country, have contributed significantly to global endocrine research — ranging from the epidemiology of metabolic disorders to novel insights into thyroid and adrenal pathophysiology. As we gather in Kolkata, we look forward to fruitful scientific exchanges, forging new collaborations, and exploring the city's timeless charm.
https://esicon2025.com/

7th International Symposium on Pheochromocytoma

Montreal, Quebec, Canada
September 18 – 20, 2025

Following the previous very successful meetings held around the world, we will again gather internationally prominent clinicians and scientists to pursue cross-continental partnerships. Under the auspices of the Pheochromocytoma and Research and Support Organization (PRESSOR), the International Scientific Committee has gathered worldwide experts and young investigators to present novel discoveries, discuss and explore therapeutic options, novel genetic and metabolomic approaches, diagnostic imaging, translational research efforts, and exchanges with patient groups in order to foster further progress in the fields of pheochromocytomas and paragangliomas.
https://na.eventscloud.com/website/70776/

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2025

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ENDOCRINE SOCIETY

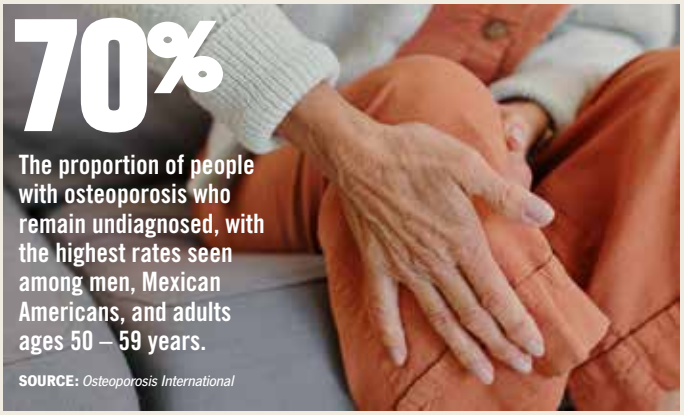
> By encouraging and giving visibility to scientists from all over the world, including those from underrepresented regions such as Brazil and Latin America, the [Endocrine] Society inspires us to remain persistent in our research goals. It creates a truly inclusive scientific environment where early-career professionals feel seen, supported, and motivated. In addition, **the Endocrine Society provides access to high-quality scientific content and continuing education resources in endocrinology, which I regularly engage with and find extremely valuable for my professional development."**

Iza Franklin Machado, MD, Discipline of Endocrinology and Metabolism, Department of Internal Medicine, School of Medicine, University of Sao Paulo, Sao Paulo, Brazil, in **"Star Power 2025"** on page 32, when asked how the Endocrine Society has impacted her career.

36%

The percentage of endocrinologists in active patient care who are 55 or older, placing endocrinology among several specialties expected to see a wave of retirements within the next decade.

SOURCE: *MEDSCAPE ENDOCRINOLOGY PRACTICE ISSUES REPORT 2025*



70%

The proportion of people with osteoporosis who remain undiagnosed, with the highest rates seen among men, Mexican Americans, and adults ages 50 – 59 years.

SOURCE: *Osteoporosis International*

853 million

The projected number of adults living with diabetes by 2050, representing a 46% increase over today's figures.

SOURCE: INTERNATIONAL DIABETES FEDERATION

32.7%

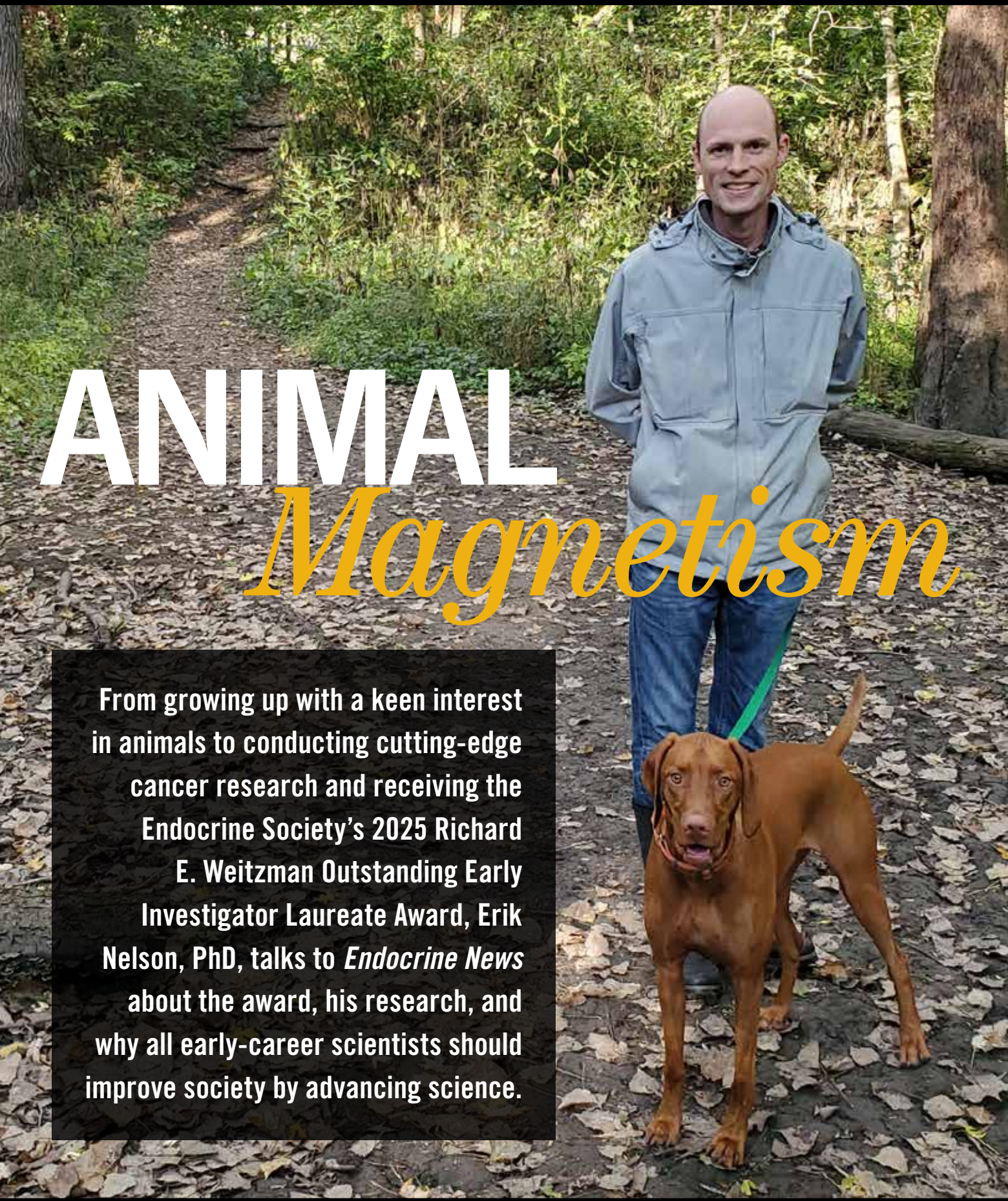
In 2023, an estimated 8.4 million U.S. adolescents ages 12 – 17 years — nearly one in three — were living with prediabetes.

SOURCE: CDC

3.4 million

The number of deaths from diabetes in 2024. This translates to one death every six seconds.

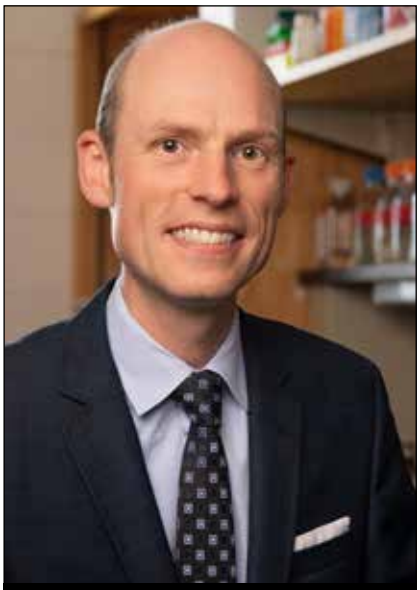
SOURCE: INTERNATIONAL DIABETES FEDERATION



ANIMAL *Magnetism*

From growing up with a keen interest in animals to conducting cutting-edge cancer research and receiving the Endocrine Society's 2025 Richard E. Weitzman Outstanding Early Investigator Laureate Award, Erik Nelson, PhD, talks to *Endocrine News* about the award, his research, and why all early-career scientists should improve society by advancing science.

BY GLENDA FAUNTLEROY SHAW



Erik Nelson, PhD

Growing up surrounded by the Rocky Mountains gave a young Erik Nelson an up-close view of nature and the wonder of animals. It also sparked a curiosity about how chemicals work in animals that has lasted a lifetime and recently help earn him the recognition of the Endocrine Society's 2025 Richard E. Weitzman Outstanding Early Investigator.

Nelson is an associate professor of molecular and integrative physiology at the University of Illinois at Urbana-Champaign. He earned both his Bachelor of Science degree and PhD in comparative endocrinology from the University of Calgary, Canada, followed by six years as a postdoctoral associate at Duke University School of Medicine. He joined the University of Illinois in 2014. Nelson's significant research contributions include defining the biochemical links between dyslipidemia/hypercholesterolemia and the pathobiology of osteoporosis and breast cancer. His goal is to use his findings to develop novel therapeutics for the treatment of cancer.

We spoke with Nelson to learn more about his chosen path in research and his words of wisdom for future early investigators.

Endocrine News: What does receiving the Outstanding Early Investigator Award mean to you?

Erik Nelson: It's truly an honor to be recognized by your peer scientists in such a way. It's really gratifying to know that your peers value what you've been doing, and your contributions to science through the years. In addition, to being reinspired by my own scientific goals, the exposure I will receive from this award will no doubt lead to new collaborations, and ultimately, better outcomes for patients.

At the President's Reception during **ENDO 2023** in Chicago, Ill., Erik Nelson, PhD (second from left) chats with (l to r) Matthew Sikora, PhD; Zeynep Madak Erdogan, PhD; and Rebecca Riggins, PhD.

EN: What inspired you to pursue your current area of research?

Nelson: I decided to get into endocrinology because I've always had an interest in animals and animal biology, and that was inspired by both my parents and where I grew up. I grew up close to the Rocky Mountains, and our family had a strong interest in nature and animals. So, I always knew I wanted to pursue that. I've also always been interested in chemistry and how molecules work. Endocrinology merges these two fields; it's how chemicals work in animals to signal and change animal responses and maintain what we call homeostasis. So, that's what really inspired me to pursue a career in endocrinology.

My more recent studies focus on how cholesterol homeostasis can impact and influence the immune system, especially how it can change the immune system within tumors. This was inspired from my work as a postdoctoral associate [at Duke] in the lab of Donald McDonnell, where we recognized that we needed better therapies for the treatment of breast cancer, and so we took a systematic approach to review previous literature and look for retrospective analysis, or epidemiological evidence, for things that were associated with survival from breast cancer, but also, potentially, druggable.

The one thing that came up over and over was cholesterol. It turns out that if you have elevated cholesterol levels, then you are more likely to develop metastatic recurrence sooner than if you had lower cholesterol. And I think even more strikingly, survivors who are taking statins or cholesterol-lowering medication tend to have a better prognosis.

So that's how we started, from this clinical observation, and for the last 10 to 15 years, we've been investigating how cholesterol contributes to cancer pathophysiology. We have noticed that both cholesterol and how we regulate cholesterol robustly impact how immune cells function, and how they respond in a tumor microenvironment.

EN: How do you hope this award might influence your future work or opportunities?

Nelson: I think it's a strong validation of what we've been doing, and the importance of what we've been doing is being recognized by the preeminent society in endocrinology. So, I think that is inspiring in and of itself and helps motivate me to keep doing what we're doing.

And also, the exposure that the award brings through the Endocrine Society membership and news articles like this. It's already led to new connections and new collaborations across the Society, as well as new directions for our research, which is to explore fundamental biology that is, eventually, translated into clinical care.

EN: Who are your collaborators in your research?

Nelson: I have an immediate team of people who work in my lab, and they're all fantastic. The size changes a little bit depending on the year, but we always have a number of PhD graduate students, postdoctoral associates, research technicians, and undergraduate research assistants.

That's my immediate team. They take care of the day-to-day, real work, if you will. And then, you can't complete big tasks in isolation, so we collaborate extensively throughout our own University of Illinois and throughout the U.S. and the world. Those collaborations really help facilitate our science, so that no one group has to reinvent the wheel. We make use of each other's expertise, so that we can really synergize, and move the next set of discoveries forward.

***EN:* What advice do you offer to young scientists who are at the beginning of their research careers?**

Nelson: I will give you the answer in three parts. First, when I was wrapping up my PhD studies at the University of Calgary in 2008, just as the housing crisis and the 2008 recession was starting, a member of my PhD thesis, Bill Cole, gave me really good advice that I continue to hold near and dear to this day, "Science, and a career in science, is going to be hard, but if you believe in your ideas, keep pursuing them, take the feedback you get from your peers, and help that shape those ideas, eventually, you'll start convincing others that your ideas are important, too." It's really a message of perseverance.

> "Historically, the biggest changes and revolutions, or improvements in our human lives and society have usually been sparked by some sort of scientific advancement. **So, we need to continue investing in science for the betterment of society."**
>
> — ERIK NELSON, PHD, ASSOCIATE PROFESSOR OF MOLECULAR AND INTEGRATIVE PHYSIOLOGY, UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN, CHAMPAIGN, ILL.

(top left) Nelson (in apron) is manning the grill for a Nelson Laboratory Party in May 2025. From left to right: Nelson, Claire Schane, Uddhav Joglekar, Shruti Bendre, Anasuya Das Gupta, Hannah Kim, Gabriella [child], Natalia Krawczynska, Yifan Fei, Desirée Rodríguez, Lara Kockaya, Dhanya Pradeep, and Evan Hebner.

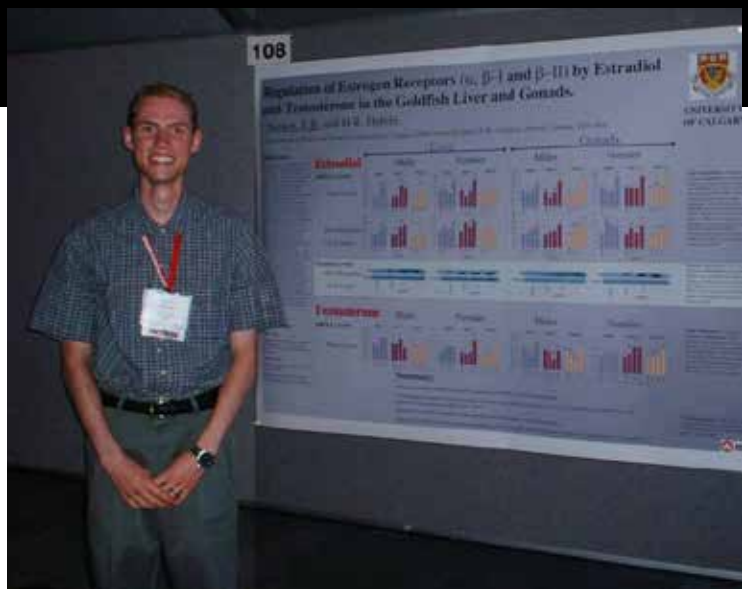
(bottom left) Nelson celebrates with colleagues at the President's Reception at ENDO 2025 in San Francisco last month. Pictured (l to r) are: Daniel Frigo, PhD; Inga Harbuz-Miller, PhD; Matthew Sikora, PhD; Nelson; Kaitlin Basham, PhD; and Katja Kiseljak-Vassiliades, DO.

The second piece of advice is that as a scientific community, we really must learn how to communicate our work to the general public. We publish in scientific journals, but we also need to learn how to communicate better with the public and our government officials as to the importance of what we do, how what we do fits into a longer-term puzzle, and how science improves the world.

And the third part of that is related and that's if you look historically, the biggest changes and revolutions, or improvements in our human lives and society have usually been sparked by some sort of scientific advancement. So, we need to continue investing in science for the betterment of society.

EN: What's your favorite way to pass the time when you leave the lab?

Nelson: Well, this links into how I got into this area of research in the first place. I continue to love nature and the outdoors, so you will often find me hiking or camping and enjoying everything the prairies around the University of Illinois have to offer. EN



(top right) Nelson presenting some of his PhD research at the 2004 Society of Reproduction conference in Vancouver, Canada.

(above) The Nelson Laboratory at the Cancer Survivor Summit, hosted by the Cancer Research Advocacy Group and the Cancer Center at Illinois. (Nelson co-founded and co-leads the Cancer Research Advocacy Group). From left to right: Yu Wang, Lara Kockaya, Claire Schane, Shruti Bendre, Nelson, Natalia Krawczynska, and Erin Weisser.

(bottom left) Left: Nelson receives his 2025 Richard E. Weitzman Outstanding Early Investigator Laureate Award trophy from Inez Rogatsky, PhD, chair of the Endocrine Society's Laureate Awards Committee, during the Excellence in Endocrinology dinner at ENDO 2025.

– SHAW IS A FREELANCE WRITER BASED IN CARMEL, IND. SHE IS A REGULAR CONTRIBUTOR TO *ENDOCRINE NEWS* AND WRITES THE MONTHLY LABORATORY NOTES COLUMN.

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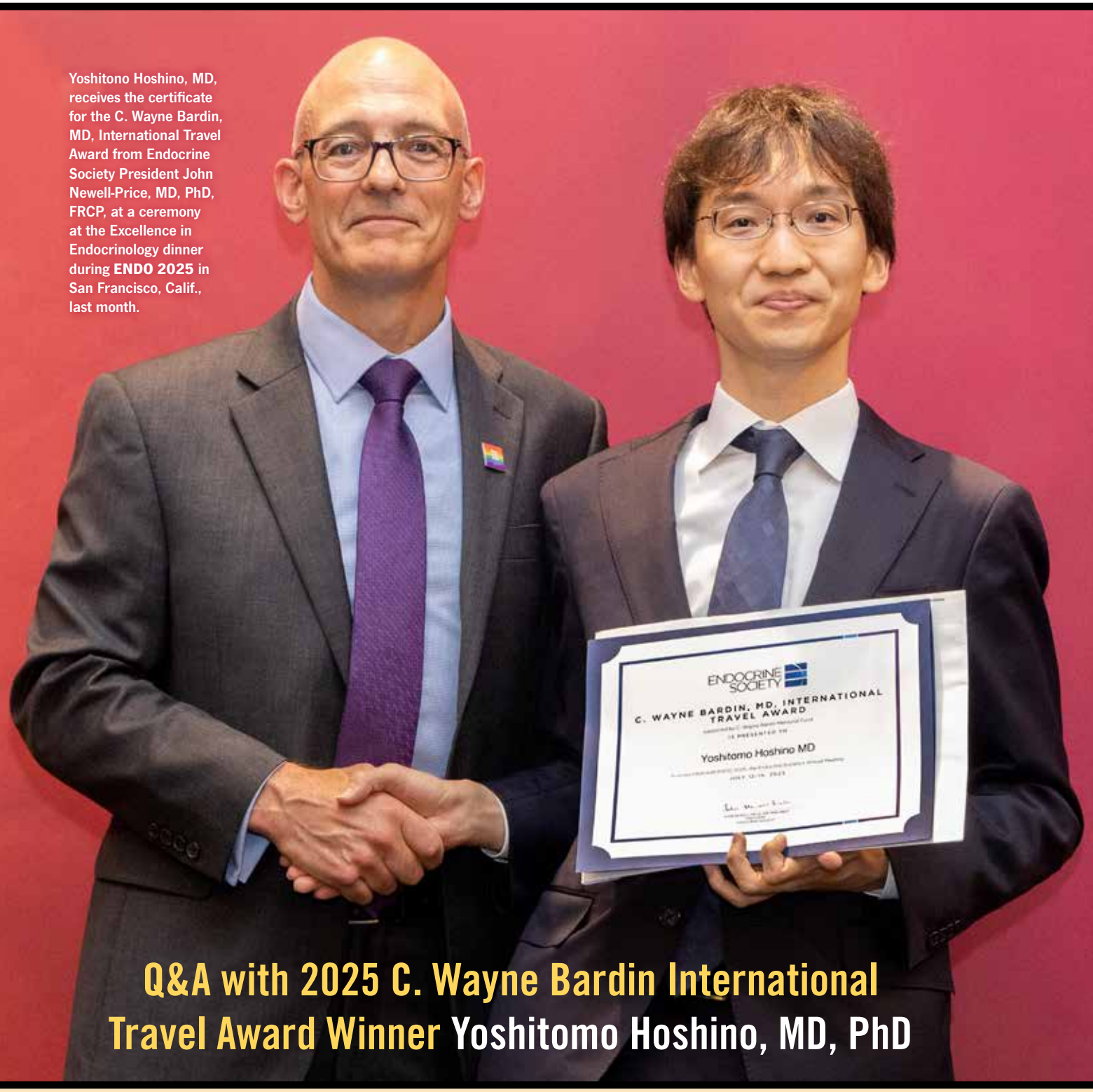
ENDOCRINE SOCIETY

Pacific OVERTURES

BY GLENDA FAUNTLEROY SHAW



Yoshitono Hoshino, MD, receives the certificate for the C. Wayne Bardin, MD, International Travel Award from Endocrine Society President John Newell-Price, MD, PhD, FRCP, at a ceremony at the Excellence in Endocrinology dinner during **ENDO 2025** in San Francisco, Calif., last month.

Q&A with 2025 C. Wayne Bardin International Travel Award Winner Yoshitomo Hoshino, MD, PhD

ENDO 2025 brought endocrinologists from around the world together for sessions and socializing.

When physician-scientist Yoshitomo Hoshino, MD, PhD, heard the news of receiving this year's Bardin Award, he was grateful for the opportunity to present his research at ENDO 2025, the world's most prestigious endocrinology conference. He tells *Endocrine News* more about his award-winning abstract, how studying bone disease became his life's work, and his future research goals.

In 2019, Yoshitomo Hoshino, MD, PhD, attended his first **ENDO** conference in New Orleans and vividly remembers being impressed by its scale and energy, and recalls the "great opportunity to see researchers and clinicians from around the world come together to share their latest work in endocrinology."

As the winner of the 2025 C. Wayne Bardin International Travel Award, Hoshino has been granted funding to once again attend **ENDO** from his home in Tokyo — this time for **ENDO 2025** in San Francisco, Calif.

Hoshino is a physician-scientist in the Department of Nephrology and Endocrinology at the University of Tokyo Hospital. He earned his medical degree from the University of Tokyo Faculty of Medicine in 2015, and after completing his initial clinical training and specializing in endocrinology at various institutions, joined the Department of Nephrology and Endocrinology in 2021. Hoshino just completed his PhD program in March and is continuing his work as a postdoctoral researcher in the laboratory of Nobuaki Ito, PhD.

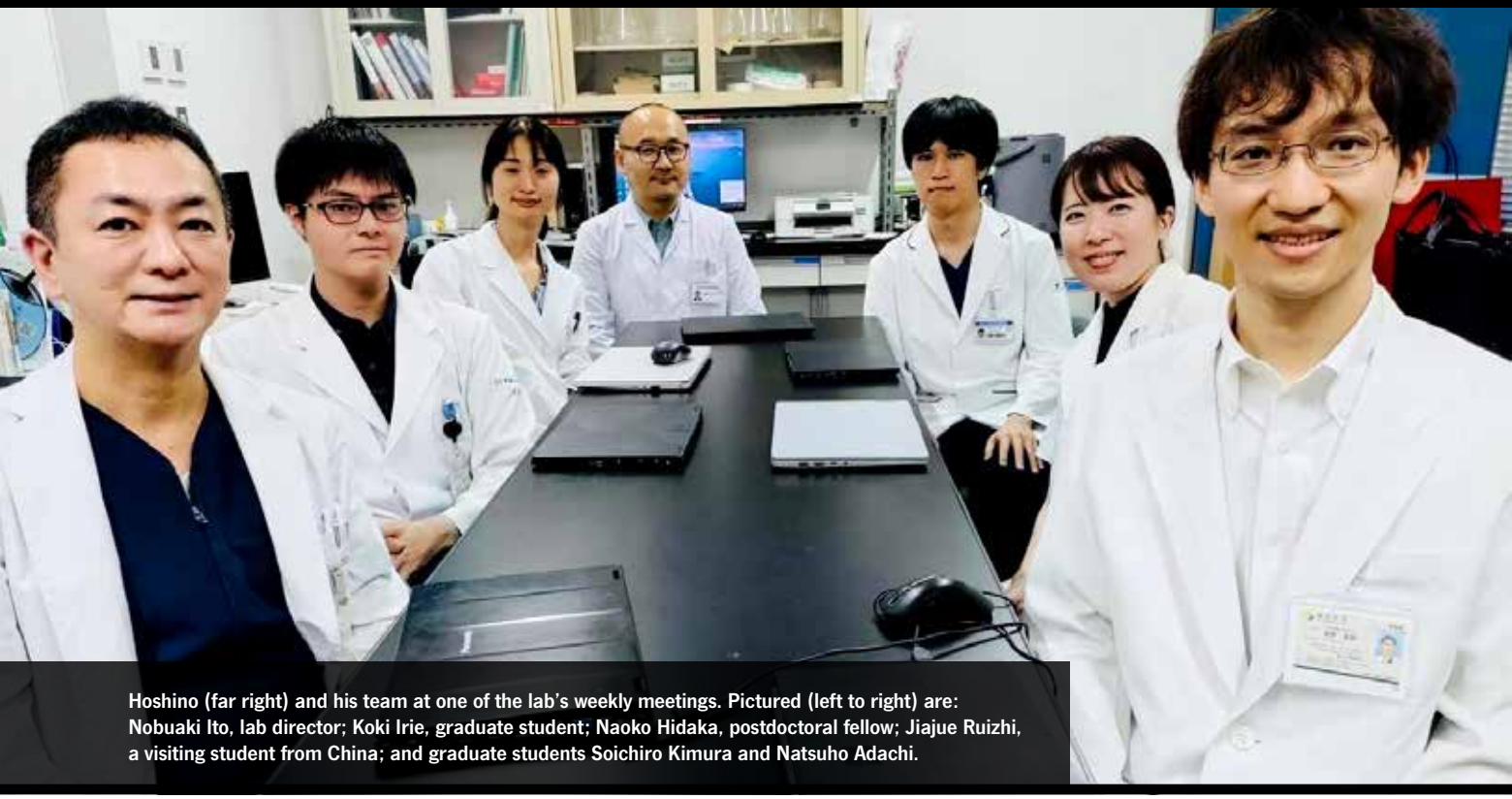
Endocrine News caught up with Hoshino to learn more details about his winning abstract and what he most is looking forward to at **ENDO 2025**.

Endocrine News: **You won the award based on your outstanding abstract. Can you give us a brief summary?**

Yoshitomo Hoshino: My abstract presents the discovery of a potential new disease entity: autoimmune osteomalacia caused by autoantibodies against PHEX. While tumor-induced osteomalacia (TIO) is typically caused by phosphaturic mesenchymal tumors, such tumors cannot be identified in a substantial proportion of patients. In this study, we found that some of these patients had autoantibodies targeting PHEX, the protein product of the PHEX gene, loss-of-function mutations of which are known to cause X-linked hypophosphatemic rickets (XLH). These findings suggest that the autoantibodies may inhibit PHEX function and lead to FGF23-related hypophosphatemia through a mechanism similar to that of genetic disorders, offering new insights into the pathogenesis of acquired osteomalacia.

EN: **Your research has led to a better understanding of bone health disorders. How did this become your life's work?**

Hoshino: After completing my initial clinical training, I worked as a clinician and treated patients with a wide range of endocrine disorders at several institutions. Among the cases I encountered, there were patients with unexplained endocrine diseases,



Hoshino (far right) and his team at one of the lab's weekly meetings. Pictured (left to right) are: Nobuaki Ito, lab director; Koki Irie, graduate student; Naoko Hidaka, postdoctoral fellow; Jiajue Ruizhi, a visiting student from China; and graduate students Soichiro Kimura and Natsuho Adachi.

> "I plan to expand our research interest to other acquired diseases of unknown etiology and try to detect currently unidentified disease-causing autoantibodies in these patients with the techniques I used to detect anti-PHEX autoantibodies. **Many such conditions remain poorly understood, and I believe that applying autoantibody screening methods may help uncover novel autoimmune mechanisms."**
>
> — YOSHITOMO HOSHINO, MD, PHD, PHYSICIAN-SCIENTIST, DEPARTMENT OF NEPHROLOGY AND ENDOCRINOLOGY, UNIVERSITY OF TOKYO HOSPITAL, TOKYO, JAPAN

particularly those involving bone and mineral metabolism. One such case was a patient suspected of having TIO, but no causative tumor could be identified despite thorough evaluation. These clinical experiences left a lasting impression on me and ultimately motivated me to pursue research aiming at uncovering the underlying mechanisms of such poorly understood diseases.

When I entered the PhD program at the University of Tokyo, I was fortunate to join the laboratory of Nobuaki Ito, PhD. I was deeply inspired by his passion and dedication to bone research. Under his guidance, I began studying autoimmune mechanisms in cases of acquired FGF23-related osteomalacia without detectable tumors. Dr. Ito provided me with invaluable support in establishing the methods to detect disease-specific autoantibodies.

I would also like to express my sincere gratitude to Dr. Kazuo Okamoto, a co-author on our study, who gave me meticulous instruction on the laboratory techniques and supported my progress as a researcher. I truly believe that I would not have been able to achieve the current publication in the *New England Journal of Medicine* without the generous mentorship and encouragement of both Drs. Ito and Okamoto.

***EN:* What are your research goals for the next couple of years?**

Hoshino: Looking ahead, I have two main research goals. First, I aim to investigate the pathogenic role of anti-PHEX autoantibodies in autoimmune osteomalacia. Specifically, I hope to establish whether these autoantibodies can directly cause osteomalacia by conducting functional studies, including in vivo experiments using animal models. Clarifying this would provide direct evidence for the causative role of the autoantibodies in disease development.

Second, I plan to expand our research interest to other acquired diseases of unknown etiology and try to detect currently unidentified disease-causing autoantibodies in these patients with the techniques I used to detect anti-PHEX autoantibodies. Many such conditions remain poorly understood, and I believe that applying autoantibody screening methods may help uncover novel autoimmune mechanisms.

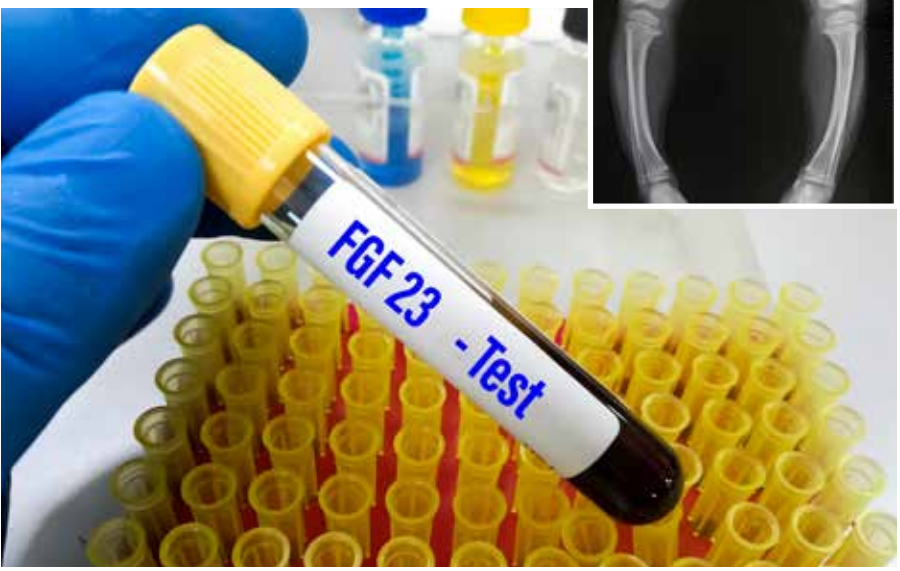
***EN:* What are you most looking forward to when you attend ENDO 2025 in San Francisco?**

Hoshino: I'm especially looking forward to the Excellence in Endocrinology Dinner, for which I've kindly been invited. I also look forward to experiencing the unique atmosphere of an international conference and gaining perspectives that are different from those typically encountered at meetings held in Japan. I'm confident it will be a valuable and enriching experience for my professional development as both a researcher and a clinician.

***EN:* When you're not at work, what is your favorite way to pass the time?**

Hoshino: Outside of work, I really enjoy spending time with my 1-year-old son. On my days off, taking him to the park is one of my favorite ways to relax. I also enjoy playing the piano, watching Japanese professional baseball, and trying delicious food. EN

The findings of Yoshitomo Hoshino's abstract suggest that autoantibodies may inhibit PHEX function and lead to FGF23-related hypophosphatemia through a mechanism similar to that of genetic disorders, offering new insights into the pathogenesis of acquired osteomalacia.



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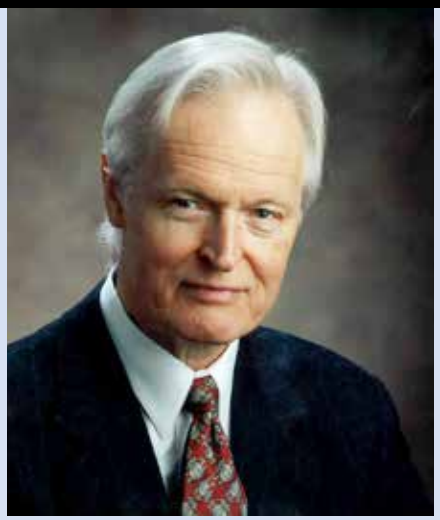


Honoring a Remarkable Legacy

First established in 2020, the **C. Wayne Bardin, MD, International Travel Award** was created in honor of Endocrine Society past-president Wayne Bardin, who made remarkable research contributions to both reproductive physiology and contraception throughout his long career.

During his scientific career, Bardin contributed enormously to women's reproductive health by developing novel and effective contraceptive methods particularly applicable for use in underdeveloped countries. His key attributes included a passion to help provide reproductive services and training in countries with emerging economies as well as mentoring numerous trainees.

Bardin was also strongly committed to serving the Endocrine Society, and for many years contributed his efforts with a high level of enthusiasm. Aside from serving as the Society's president from 1993 to 1994, Bardin was also director of the Clinical Endocrinology Update Course for many years and served on the Endocrine Society Council.

Winners receive a $3,000 travel grant for **ENDO** and complimentary meeting registration. For more information on the award, go to: **https://www.endocrine.org/awards/c-wayne-bardin-md-international-travel-award.**

Star Power 2025

BY MARK A. NEWMAN

CHATTING WITH THE WINNERS OF THIS YEAR'S RISING STAR POWER TALKS

Each year at **ENDO**, early-career and in-training members get their chances to shine bright at the Rising Star Power Talks. *Endocrine News* caught up with this year's winners during **ENDO 2025** in San Francisco last month to learn about their research, future plans, and more.

During last month's **ENDO 2025** in San Francisco, Room 2 at the Moscone Center was buzzing as it was packed with endocrine scientists and researchers from around the world who were all there to check out the 2025 Rising Stars Power Talks.

To say that this event is fast paced would be an understatement; each of the 15 participants had only three minutes to present their research, accompanied by a projected slide that changed and adjusted as they progress through their research findings. After each presentation, there are only two minutes for questions from the audience of observers, judges, mentors, and fellow participants.

Once known as the Knockout Rounds, the Rising Stars Power Talks is hosted by the Endocrine Society's Trainee and Career Development Core Committee (TCDCC) and is always an intense and informative event as early-career and in-training Endocrine Society members get the chance to communicate their groundbreaking research with an audience of their peers.

"One of the core goals of our training and career development programming is to integrate budding early-career endocrinologists into the broader field and the Society," says Matthew Sikora, PhD, associate professor, University of Colorado, Anschutz Medical Campus, Aurora, Colo., and TCDCC co-chair. "Perhaps a favorite approach for us is to showcase the remarkable work these

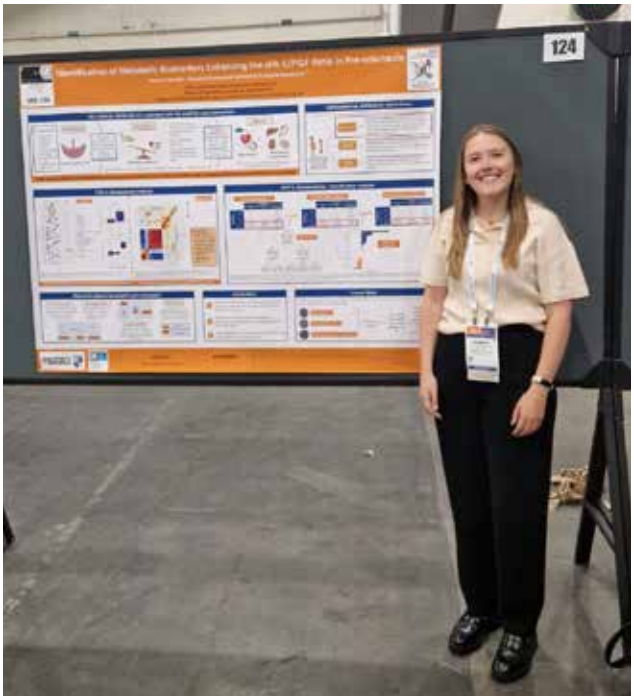
trainees and fellows undertake in their labs and clinics. The Rising Star Power Talks help us demonstrate the breadth of research that the next generation addresses, while highlighting their expertise and unique contributions to endocrinology."

The judges and audience decided the winners of this blitz style research communication competition, and this year's winners were Basic Science: **Emily Hilz, PhD,** University of Texas at Austin, Austin, Texas; Translational Science: **Rossella Cannarella, MD, PhD,** Department of Clinical and Experimental Medicine, University of Catania, Catania, Italy; Clinical: **Iza Franklin Machado, MD,** Discipline of Endocrinology and Metabolism, Department of Internal Medicine, School of Medicine, University of Sao Paulo, Sao Paulo, Brazil; and two People's Choice winners this year: **Hannah M. Hooker, MSc,** Warwick Medical School, University of Warwick, Coventry, United Kingdom; and **Mohammed Safar, PharmB, MSc, PhD,** Imperial College London, London, United Kingdom. However, the research in the abstract Machado presented was led by her colleague, Flavia Tinano. Unfortunately, Tinano was unable to attend **ENDO**, so Machado stepped in to present as the study's co-author. Therefore, Machado is responding regarding the presentation itself, and Tinano is responding to questions specific to the research.

Endocrine News was actually in the "room where it happened" and caught up with this year's winners to find out more about their award-winning research, their future research goals, how it felt to present in a room of their peers, and more.

Endocrine News: Tell us a little bit about the research that you presented at the session.

Rossella Cannarella: I presented our recent work titled "Beyond DNA: Impact of sperm IGF2 mRNA on early embryo development and fertility." This study builds on earlier pilot findings suggesting that sperm carry more than just genetic material — they also carry RNA transcripts, such as IGF2 mRNA, which appear to play a role in early embryogenesis. We conducted a prospective study over three years, analyzing sperm samples from infertile men undergoing ART and comparing them to fertile controls. We found that IGF2 mRNA levels were significantly lower in the sperm of infertile patients compared to fertile controls. Moreover, lower IGF2 mRNA levels in sperm are significantly associated with delayed embryo development milestones. Importantly, these effects were independent of traditional sperm parameters and persisted even after adjusting for female factors. This research suggests that sperm RNA



Top: Hannah Hooker at her poster presentation during **ENDO 2025**.

Bottom: Iza Machado, Larissa Gomes, and Flávia Tinano during a workday at the Endocrinology Department of the Hospital das Clínicas, University of São Paulo.

content — specifically IGF2 mRNA — may serve as a novel biomarker for fertility and embryo viability.

Emily Hilz: My presentation focused on how exposure to endocrine-disrupting chemicals (EDCs) early in life can affect food choices and the brain. In the study, my research group exposed pregnant rats to a low-dose mixture of EDCs that reflect real-world exposures. When the offspring of these animals grew up, we measured how much they consumed sugary and fatty foods. Interestingly, we found that early-life EDC exposure increased later consumption of sugar and fat in a sex-specific manner — males drank more sugary solution, and females ate more fatty food.

I then examined how EDC exposure affected brain regions involved in reward and eating behavior. Using RNA sequencing, I found that EDCs caused broad changes in gene expression in male brains and more targeted changes in females. One region of the brain really stood out: the nucleus accumbens, which is an important region of the brain for processing reward and driving motivation. Changes to functional gene sets in this region predicted the animals' altered eating behavior, suggesting that early-life EDC exposure may increase the desire for highly palatable foods through disruptions to the brain reward system.

Hannah Hooker: My research focuses on improving the prediction of pre-eclampsia, one of the most common and potentially serious conditions in pregnancy. Specifically, I'm looking at how we can enhance the performance of the currently used sFlt-1/PlGF ratio — a blood test used in those with suspected pre-eclampsia — by identifying additional serum biomarkers. At **ENDO 2025**, I presented findings from a metabolomics study showing that adding certain metabolites to the sFlt-1/PlGF ratio can help detect cases that are currently being missed, potentially leading to earlier intervention and better outcomes.

Mohammed Safar: I presented my researched titled "Unravelling the Regulation of the Kisspeptin Receptor (kiss1r) Through Its Interaction With G Protein-Coupled Estrogen Receptor (gper)," which covered the investigation into the molecular interplay between two crucial receptors in reproductive health: the Kisspeptin receptor (Kiss1R) and the G protein-coupled estrogen receptor (GPER). My research sought to understand if and how these receptors interact, specifically focusing on how GPER influences Kiss1R's primary functions; its downstream signaling, its rate of internalization, and its recruitment of beta-arrestin. To build a complete picture, we conducted a detailed pharmacological comparison of the receptor's response to its native ligands versus two novel synthetic ligands, which provided key insights into the mechanics of this interaction.

From left to right: People's Choice winner, Mohammed Safar, PharmB, MSc, PhD, Imperial College London, London, U.K.; Basic Science winner, Emily Hilz, PhD, University of Texas at Austin, Austin, Texas; Translational Science winner, Rossella Cannarella, MD, PhD, Department of Clinical and Experimental Medicine, University of Catania, Catania, Italy; Clinical Science winner, Iza Franklin Machado, MD, Discipline of Endocrinology and Metabolism, Department of Internal Medicine, School of Medicine, University of Sao Paulo, Sao Paulo, Brazil. Not pictured is other People's Choice winner Hannah M. Hooker, MSc, Warwick Medical School, University of Warwick, Coventry, U.K.

Rossella Cannarella, MD, PhD
University of Catania, Catania, Italy

> The idea that the spermatozoon might carry not just DNA but a kind of molecular spark — a signal capable of igniting the complex process of embryogenesis — was truly fascinating to me. It reframes the role of the male gamete, suggesting it could actively influence early developmental dynamics in ways we are only beginning to uncover.

Emily Hilz, PhD
University of Texas at Austin, Austin, Texas

> I'm preparing to transition into a junior faculty position and start my own research lab. I'm excited to build a multi-disciplinary program that explores how EDCs shape behavior and brain function, and to ultimately start looking toward mitigation. There are a lot of avenues to explore and so much more we need to understand in order to effectively inform public health policy and personal interventions. I have a deep passion for this research field; it combines cutting-edge science with advocacy in a very fulfilling way.

Flavia Tinano: Our research focused on how the timing of a woman's first period, known as age at menarche, can predict her long-term health. Using data from over 7,600 Brazilian women aged 35 to 74 years, we found that both very early and very late menarche are linked to distinct health risks later in life. Early menarche (before age 10) was associated with higher chances of obesity, diabetes, high blood pressure, and pregnancy-related complications like pre-eclampsia. In contrast, women with late menarche (after age 15) were less likely to be obese but had more menstrual irregularities and a higher risk of certain cardiovascular problems. This research helps us better understand how early-life events can shape a woman's health decades later, especially in underrepresented populations like those in Latin America.

EN: What inspired you to undertake this specific research?

Cannarella: What motivated me was a growing curiosity about the non-genetic contributions of sperm to embryonic development. Despite advances in reproductive medicine, many cases of male infertility remain idiopathic, and conventional semen analysis doesn't always explain poor embryo development or implantation failure. When the pilot study (PMID: 39312692) hinted at a possible role for IGF2 mRNA in embryo kinetics, I saw a promising avenue to explore. I wanted to understand whether sperm RNAs, particularly IGF2, could serve as functional markers or even therapeutic targets in the ART setting.

During **ENDO 2025**, Cannarella, who is the chair of the Endocrine Society's EDC Special Interest Group, took part in a presentation on the **ENDOExpo** floor.

Safar (far right) is pictured with several of his colleagues from Imperial College London during the opening reception at ENDO 2025.

In addition, the idea that the spermatozoon might carry not just DNA but a kind of molecular *spark* — a signal capable of igniting the complex process of embryogenesis — was truly fascinating to me. It reframes the role of the male gamete, suggesting it could actively influence early developmental dynamics in ways we are only beginning to uncover.

Hilz: My background is in behavioral neuroscience; specifically, how female hormones contribute to basic cognitive processes like attention and motivation. When I joined Dr. Andrea Gore's lab in 2021 as a postdoctoral fellow, I was introduced to the fascinating (and equally troubling) world of EDCs. With support from the National Institutes of Environmental Health Sciences (NIEHS), I began to study the cognitive impacts of early-life EDC exposure, and over the course of that research, I noticed that EDC-exposed animals consume sweets preferentially and have disruptions in the brain reward system. I was already familiar with "obesogens" (i.e., EDCs that promote obesity and disrupt metabolism), but most of the research in that area focuses on changes in fat storage and metabolic signaling. Since many of the brain systems that support cognition also help regulate appetite, food preferences, and motivation, I began to wonder if EDC exposure could predispose animals to obesity through food choice and reward motivation. That idea shaped the direction of this project. While others have studied EDCs and eating behavior, my focus on food choices and their ultimate connection to cognition is a new and understudied angle that could help us identify new targets for intervention.

Hooker: I was drawn to this project because of its potential to address a real clinical challenge — while the sFlt-1/PlGF ratio has been a major step forward in predicting pre-eclampsia, some patients still receive normal results and go on to develop the condition. I was also excited by the opportunity to apply some of the latest advances in multi-omic technologies and data science. Given that pre-eclampsia is such a complex, multi-system condition, this approach felt like a promising way to better understand the underlying biology and ultimately make a real difference for patients.

Safar: The inspiration for this project stemmed directly from a puzzling and significant clinical observation from our group at Imperial College London. In a previous study, Dr. Abbara noted that women pre-treated with both MVT-602/TAK448, a Kiss1R agonist, and estradiol, which activates GPER, showed a synergistically elevated level of Luteinizing Hormone (LH) compared to those treated with the Kiss1R agonist alone. This suggested a previously uncharacterized possible functional "crosstalk" between the two receptors. I was driven to take this research to the next level by performing a mechanistic deep dive to understand the molecular basis for this synergy. Uncovering why this happens is the first step toward potentially harnessing this interaction for improved therapeutic strategies in reproductive medicine.

Tinano: I've always been passionate about women's health, especially reproductive health, which is often overlooked or underfunded, particularly in developing countries. In many

Hannah M. Hooker, MSc
Warwick Medical School,
University of Warwick,
Coventry, United Kingdom

Receiving a travel grant made it possible for me to attend the Early-Career Forum at **ENDO 2025**, which was a real highlight. It gave me the opportunity to connect with other early-career scientists from around the world, receive valuable feedback on my work, and explore different career paths within endocrinology. The career development workshops were especially useful, and I continue to benefit from the Society's broader resources and supportive network.

Melissa G. Lechner, MD, PhD,
Discipline of Endocrinology and Metabolism, Department of Internal Medicine, School of Medicine, University of Sao Paulo, Sao Paulo, Brazil

By encouraging and giving visibility to scientists from all over the world, including those from underrepresented regions such as Brazil and Latin America, the Society inspires us to remain persistent in our research goals. It creates a truly inclusive scientific environment where early-career professionals feel seen, supported, and motivated.

parts of the world, including Latin America, there's still a lack of large-scale studies that focus specifically on women and how early-life events, like age at menarche, can impact long-term health. Most of the existing research in this field has been conducted in high-income countries, so we saw a real need to generate data that reflects the reality of women in Brazil. By studying these patterns in a large and diverse Latin American cohort, we hope to bring more attention to women's health and help tailor prevention strategies that are more inclusive and regionally relevant.

EN: How did it feel to present your work in such a lively environment among your peers and mentors?

Cannarella: It was an incredibly rewarding experience. Presenting at **ENDO 2025** was both humbling and invigorating — it offered a unique platform to engage with international experts in endocrinology and reproductive medicine. The feedback and discussion generated by the session were inspiring and reinforced the value of this line of research. There's a real sense of community and shared purpose at **ENDO**, and I was honored to contribute to that dialogue.

Hilz: I am always a little nervous prior to a research presentation, but once I got up there everything fell into place, and it felt more like a conversation than a presentation. The best part was the discussion that came afterwards — I met a lot of great people, got some interesting feedback, and even found myself talking about future collaborations. That's basically everything you could want from a talk!

Hooker: It was a huge privilege to share my work at **ENDO 2025**, even if it was a bit nerve-wracking to present in front of some of the leading researchers in the field! The experience was both exciting and rewarding, and I really appreciated the thoughtful questions and engagement from the audience. It was a fantastic opportunity to hear about and contribute, even in a small way, to the incredible work being done by the global research community.

Machado: It was an incredible experience to present our work at **ENDO 2025** in San Francisco. Sharing our research with colleagues from around the world and receiving their feedback and questions was both rewarding and inspiring. It was also a great opportunity to connect with experts in the field and to see how our work fits into the global efforts to improve women's health.

Safar: It was an incredible experience. As my first time attending **ENDO**, I'll admit I was quite nervous presenting to such a distinguished audience. However, that feeling quickly faded because of the remarkably welcoming and supportive atmosphere. The engagement from my colleagues was fantastic. The absolute highlight, which made me feel truly embraced by this community, was winning the public vote for the Rising Star award. It was a humbling and profoundly motivating moment. This entire experience has solidified my commitment to being an active member of the Endocrine Society for years to come, it certainly won't be my last **ENDO**.

EN: Can you explain what sort of impact the Endocrine Society has had on your research career?

Cannarella: The Endocrine Society has played a pivotal role in shaping my academic and research trajectory. Its conferences, publications, and professional network have provided both inspiration and critical feedback that have helped me refine my research questions and methodologies. Being part of a global community committed to advancing endocrine science is deeply motivating. The Society's support for early-career researchers and its emphasis on translational research have been especially valuable.

Equally important has been the Society's inclusive and empowering environment, which has enabled me to take on leadership roles, develop coordination and strategic skills, and engage meaningfully with esteemed colleagues who are internationally recognized in the field. Serving as chair of the Special Interest Group on Endocrine-Disrupting Chemicals and being appointed to the Special Program Committee have both been defining opportunities, contributing significantly to my professional development and sense of belonging within this vibrant scientific community.

Hilz: The Endocrine Society has been a huge supporter of my research, career development, and advocacy efforts from the start. I have had the distinct honor of presenting oral abstract sessions at **ENDO** for the past three years, so in a way I feel each year I am coming back to tell the next chapter of the story and watching the endocrine community's interest in EDCs grow along with me. My first year at **ENDO** I received an Outstanding Oral Abstract Award and participated in a news panel on EDCs. My second year I received a Young Investigator Award from Women in Endocrinology and subsequently got involved in WE leadership, and this year of course I joined the Rising Stars Rapid Fire presentation competition — which was a fun challenge that really motivated me to improve my research communication skills. Each year I meet leaders in the field and across disciplines and talk to practitioners interested in the clinical implications of EDCs. These conversations motivate me to keep expanding my research and addressing questions directly relevant to human health.

I'd be remiss if I didn't also mention that *Endocrine News* published a feature piece on my EDC scanner app (**Endoscreen.org**) back in December 2023. That put me in contact with a lot of stakeholders in the field of women's and environmental health and afforded me many opportunities to spread awareness about EDCs across a broad range of audiences. I've been quietly working on the app with support from the HHS EDC Innovator Award all this time (I won the second phase of that award in October 2024) and will be releasing an app-store version later this year that has some exciting new features. It's exciting to see how much EDC awareness has grown even in the relatively short time that I've been in the field, and the Endocrine Society has had a huge role in that by highlighting research and advocacy efforts like this.

Hooker: The Endocrine Society has had a meaningful impact on my development as an early-career researcher. Receiving a travel grant made it possible for me to attend the Early-Career Forum at **ENDO 2025**, which was a real highlight. It gave me the opportunity to connect with other early-career scientists from around the world, receive valuable feedback on my work, and explore different career paths within endocrinology. The career development workshops were especially useful, and I continue to benefit from the Society's broader resources and supportive network.

Machado: The Endocrine Society has played a meaningful role in my research career. By encouraging and giving visibility to scientists from all over the world, including those from underrepresented regions such as Brazil and Latin America, the Society inspires us to remain persistent in our research goals. It creates a truly inclusive scientific environment where early-career professionals feel seen, supported, and motivated. In addition, the Endocrine Society provides access to high-quality scientific content and continuing education resources in endocrinology, which I regularly engage with and find extremely valuable for my professional development.

Mohammed Adnan Safar, PharmB, MSc, PhD
Imperial College London, London, United Kingdom

The opportunity to network and discuss my work with leading scientists and peers was invaluable. These conversations have already prompted me to consider my research from new angles and have opened up exciting possibilities for future collaborations. The Endocrine Society acts as a powerful catalyst; it brings the right people from all over the world together, fosters a genuine spirit of scientific exchange, and creates a platform where a single conversation can spark the next phase of your research.

Flavia Tinano
Discipline of Endocrinology and Metabolism, Department of Internal Medicine, School of Medicine, University of Sao Paulo, Sao Paulo, Brazil

In many parts of the world, including Latin America, there's still a lack of large-scale studies that focus specifically on women and how early-life events, like age at menarche, can impact long-term health. Most of the existing research in this field has been conducted in high-income countries, so we saw a real need to generate data that reflects the reality of women in Brazil.

Safar: Although this was my first direct engagement with the Society at its annual meeting, the impact has already been significant. The opportunity to network and discuss my work with leading scientists and peers was invaluable. These conversations have already prompted me to consider my research from new angles and have opened up exciting possibilities for future collaborations. The Endocrine Society acts as a powerful catalyst; it brings the right people from all over the world together, fosters a genuine spirit of scientific exchange, and creates a platform where a single conversation can spark the next phase of your research.

EN: What's next for you and your research? Where do you go from here?

Cannarella: Our next steps involve expanding this research into functional studies. We aim to understand the exact mechanisms by which sperm IGF2 mRNA influences embryo development. Additionally, we're exploring whether modulating IGF2 mRNA levels in sperm can enhance ART outcomes. Another important direction is to evaluate IGF2 mRNA levels in larger and more diverse patient populations, including those undergoing different ART protocols. Ultimately, we hope to integrate sperm RNA profiling into clinical practice as a diagnostic or prognostic tool for male fertility.

Hilz: I plan to continue researching how EDCs influence food choices and obesity risk, with a particular focus on the brain's reward systems. My next steps include teasing apart the behavioral mechanisms driving these effects; specifically, separating the role of reward and motivation from satiety signaling (either or both could influence eating behavior). The gene expression data from my study also suggested that EDCs may cause epigenetic changes, which raises the possibility that these effects could be heritable even in the absence of continued exposure. So, I'm beginning to test whether altered food choices persist across generations and am integrating cognitive-attentional tests to get an idea of potential co-morbidities in the phenotype.

Looking ahead, I'm preparing to transition into a junior faculty position and start my own research lab. I'm excited to build a multi-disciplinary program that explores how EDCs shape behavior and brain function, and to ultimately start looking toward mitigation. There are a lot of avenues to explore and so much more we need to understand in order to effectively inform public health policy and personal interventions. I have

a deep passion for this research field; it combines cutting-edge science with advocacy in a very fulfilling way.

Hooker: I'm heading into the final year of my PhD, where I'll be building on this work by integrating multiple omics layers — metabolomics, proteomics, and clinical data — into a multi-marker predictive model for pre-eclampsia. The goal is then to validate this model in a large, real-world patient cohort to understand its potential for clinical use. Looking beyond the PhD, I hope to continue working in pre-eclampsia research, focusing on improving clinical care and outcomes for pregnant women worldwide.

Safar: The immediate plan is to build on our momentum. I intend to investigate our findings further, specifically by incorporating the excellent feedback and novel ideas I gathered during the discussions at **ENDO 2025**. There are several new experiments we can now design to deepen our understanding in this project. Furthermore, the networking at the **ENDOExpo** was extremely fruitful. I had promising conversations with several technology and pharmaceutical companies about their innovative research tools and the potential for future partnerships. That by itself widened my understanding in the area and expanded my current network.

The next phase of my work will focus on both advancing the fundamental science and exploring these translational opportunities to see how our discoveries can eventually be applied in a clinical context. Finally, I will start the work from today as I can't wait for **ENDO 2026**!

Tinano: Next, we plan to dive deeper into the ELSA-Brazil dataset, including prospective data on mortality, to better understand how early or late menarche might influence long-term health outcomes and even lifespan. We're also committed to sharing these findings not only in high-impact scientific journals but also with the general public — because this knowledge can help women and healthcare providers make more informed decisions about prevention and care. Our goal is to bridge the gap between research and real-life impact, especially for women in underrepresented populations. EN

RISING STARS CLASS OF 2025

Here are all the participants who presented their research at the Rising Stars Power Talks at **ENDO 2025** in San Francisco.

Jeremiah Bello, MD
John H. Stroger Jr. Hospital of Cook County, Chicago, Ill.

Rossella Cannarella, MD, PhD
University of Catania, Catania, Italy

Yang Ching Chen, MD, PhD
Department of Family Medicine, Wan Fang Hospital
Taipei Medical University, Taipei, Taiwan

Lale A. Ertuglu, MD
Vanderbilt University Medical Center, Nashville, Tenn.

Emily Hilz, PhD
University of Texas at Austin, Austin, Texas

Hannah M. Hooker, MSc
Warwick Medical School, University of Warwick,
Coventry, United Kingdom

Hui Wen Lo, MD
City of Hope, Duarte, Calif.

Iza Franklin Roza Machado, MD
Discipline of Endocrinology and Metabolism,
Department of Internal Medicine, School of Medicine,
University of Sao Paulo, Sao Paulo, Brazil

Nelmari Ruiz Otero, PhD
Johns Hopkins University School of Medicine, Baltimore, Md.

Min Jeong Park, clinical fellow
Korea University Guro Hospital, Seoul, Korea

Mohammed Adnan Safar, PharmB, MSc, PhD,
Imperial College London, London, United Kingdom

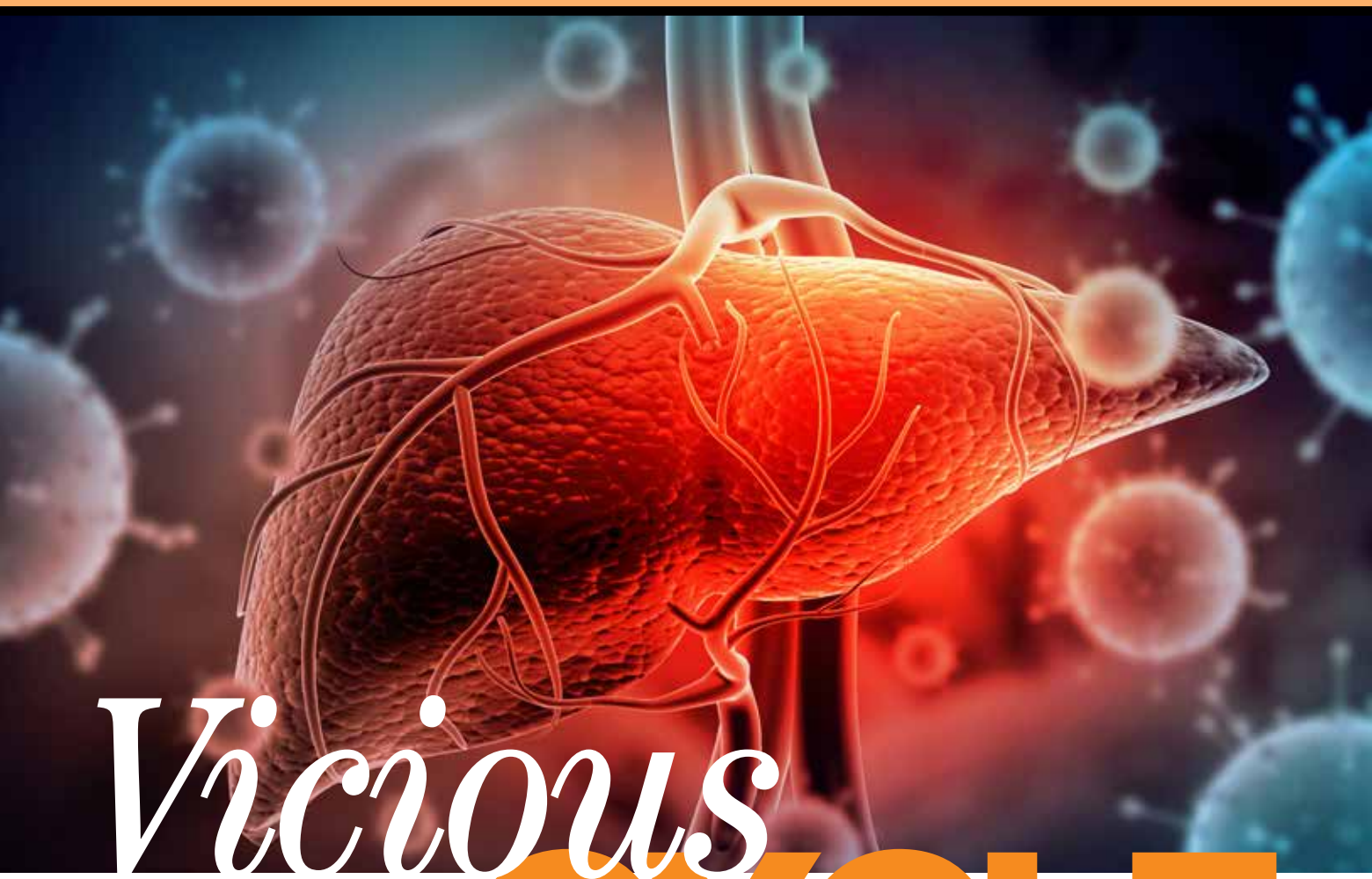
Jaya Srivastava, PhD
National Institutes of Health, Bethesda, Md.

Simón(e) Dow-Kuang Sun, PhD
Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y.

Yuhong Yang
First Affiliated Hospital With Nanjing Medical University,
Nanjing, China

Samuel Thomas Zdon, BS
Harvard Medical School/Brigham and Women's Hospital,
Boston, Mass.

– NEWMAN HAS BEEN THE EDITOR OF *ENDOCRINE NEWS* SINCE 2013.



Vicious CYCLE

The Story of Type 2 Diabetes and Liver Disease

As the prevalence of type 2 diabetes and liver disease continues to increase, so too does the awareness of the bidirectional relationship between these two diseases. *Endocrine News* speaks to Priyanka Majety, MD, about her recent paper detailing this relationship, and how endocrinologists are uniquely positioned to break the cycle.

BY DEREK BAGLEY

In her practice, Priyanka Majety, MD, mostly treats patients with obesity and type 2 diabetes. She's assistant professor of endocrinology, diabetes, and metabolism at Virginia Commonwealth University (VCU) and the adult outpatient diabetes director for the VCU Health System, so her patients are in good hands. But she has noticed a concerning — and growing — trend around the clinic.

"In practice, I increasingly saw patients where type 2 diabetes and fatty liver disease weren't just comorbidities — they were interacting in complex, cyclical ways," she says.

Metabolic Dysfunction-associated Steatotic Liver Disease (MASLD) affects about 30% of the population globally, while type 2 diabetes affects around 70%, with both increasing worldwide. They're both growing in prevalence, and what's worse, both diseases appear to feed off each other.

"Insulin resistance is central: It promotes hepatic fat accumulation, oxidative stress, and inflammation, which in turn worsen insulin resistance, creating a self-perpetuating, or 'vicious' cycle," Majety says. "MASLD worsens glycemic control by contributing to systemic insulin resistance and altering glucose metabolism. This interplay not only accelerates liver disease progression but also increases the risk of cardiovascular and kidney complications."

Recognizing this feedback loop — this mutually destructive relationship — Majety and her co-authors published recently a review in *Endocrines*, titled "Current and Emerging Treatments for Metabolic Associated Steatotic Liver Disease (MASLD) and Diabetes: A Narrative Review."

"This review was born out of both clinical necessity and scientific curiosity," Majety says. "With MASLD now recognized as the most common chronic liver disease worldwide, and type 2 diabetes being one of its strongest risk factors and consequences, I felt we needed a comprehensive synthesis."

"Insulin resistance is central: It promotes hepatic fat accumulation, oxidative stress, and inflammation, which in turn worsen insulin resistance, creating a self-perpetuating, or 'vicious' cycle. MASLD worsens glycemic control by contributing to systemic insulin resistance and altering glucose metabolism. **This interplay not only accelerates liver disease progression but also increases the risk of cardiovascular and kidney complications."**

—PRIYANKA MAJETY, MD, ASSISTANT PROFESSOR, ENDOCRINOLOGY, DIABETES, AND METABOLISM, VIRGINIA COMMONWEALTH UNIVERSITY, RICHMOND, VIRGINIA

The article aims to distill the emerging science and therapeutic strategies that address this intricate relationship — an analysis of recent evidence, especially around GLP-1 receptor agonists (GLP-1Ras), sodium-glucose cotransporter 2 (SGLT2) inhibitors, and dual incretin therapies, and collaboration with co-authors who brought hepatology, cardiology, and metabolic expertise.

"This review comes at a pivotal moment: With the redefinition of MASLD and the emergence of medications that address both hepatic and glycemic endpoints, it's crucial that clinicians stay informed on how best to screen, diagnose, and manage these overlapping conditions," Majety says.

Empowering Patients

Majety says that liver disease is not monolithic, but rather a heterogeneous disease with complex, overlapping pathways. Some patients have predominantly steatosis, while others have progressive fibrosis. And the underlying drivers — insulin resistance, inflammation, oxidative stress, de novo lipogenesis, genetics — can vary.

Majety goes on to say that the future of MASLD therapy lies in precision medicine: using noninvasive biomarkers, genetic risk scores, or metabolic phenotyping to tailor treatments. According to Majety, this precision medicine approach is essential for developing new, more effective treatments and for optimizing outcomes in clinical practice. Understanding which pathways are dominant in a given patient will help us choose between incretins, PPAR agonists, or anti-fibrotic agents.

"Individualized care is central to both diabetes and MASLD management," Majety says. "Some patients may benefit most from weight-centric therapies, others from insulin sensitizers, and still others from lipid-lowering strategies. The article underscores that clinicians should assess disease severity, comorbidities, and patient preferences when choosing therapies. Tailoring treatment plans not only improves outcomes but also empowers patients."

Powerful Adjunct

The first line of treatment in these plans is usually lifestyle change, and for Majety, lifestyle change should remain a cornerstone even if that treatment plan includes pharmacotherapy. But she points

Majety (right) and Nadia Jamil, MD, at the All SIG Reception during ENDO 2022 in Atlanta, Ga.

out that life is complicated and can get in the way sometimes, and sustainability can be challenging, especially in patients with chronic conditions like long-standing insulin resistance, advanced fibrosis, or multiple comorbidities.

"There are socioeconomic, behavioral barriers and underlying genetic/metabolic drivers that limit lifestyle changes alone," Majety says. "Pharmacotherapy provides a powerful adjunct. Agents like GLP-1RAs and pioglitazone can improve insulin sensitivity and hepatic histology, while newer incretin-based therapies offer dual metabolic and hepatic benefits. In patients unable to achieve durable improvements through lifestyle alone, medications offer a bridge and sometimes a breakthrough."

Majety says that GLP-1Ras and the dual GLP1-GIP agonists have been especially transformative. "I've seen patients with obesity, poorly controlled diabetes, and steatosis on imaging show both improved A1C and significant improvement in liver function tests after several months of therapy," she says. "In select patients, pioglitazone has also been helpful."

Breaking the Cycle

As the prevalence of MASLD grows, so too does its toll on people's wallets. The authors point out that the most chronic liver disease in the world costs the U.S. more than $100 billion annually. There is currently only one FDA-approved treatment for it.

But as for this bidirectional relationship between MASLD and type 2 diabetes, endocrinologists are uniquely positioned to interrupt this loop, break this vicious cycle. "We are the key to early identification of these patients with metabolic risk factors," Majety says. "We manage the metabolic drivers and

prescribe insulin-sensitizing agents and other medications that improve both glycemic and hepatic endpoints."

For Majety, she starts with a comprehensive assessment, evaluating metabolic risk factors, degree of liver involvement, and comorbidities screening, her patients with diabetes for liver disease using the FIB4 calculator. "I emphasize the importance of lifestyle changes that are sustainable and encourage physical activity," she says. "I rely on our certified diabetes care and education specialist and registered dieticians. I try to initiate/optimize metabolic therapy with agents that can address both liver and glucose control. If they are to start GLP1RA or dual GLP-GIP, I emphasize the importance of protein intake and strength training. And finally, I refer them to hepatology for their expertise."

"If the patients have advanced cirrhosis, I focus on the prevention of hypoglycemia. This needs frequent adjusting of insulin, using technology to our advantage and dietary counseling," Majety continues.

Majety tells *Endocrine News* that what attracted her to endocrinology was the intricate interplay between hormones and every organ system, and the opportunity to impact chronic diseases like diabetes and other conditions that profoundly affect quality of life. "Endocrinology uniquely blends intellectual stimulation with emotional satisfaction, especially through patient education and counseling, which can be incredibly empowering and rewarding," she says.

This intricate interplay between MASLD and type 2 diabetes has been a learning experience for Majety as well, she says. But she again speaks to the importance of learning, of education. "Educating and empowering the patients is crucial," Majety says. "Shared decision making improves adherence and outcomes." EN

Curiosity and Collaboration

An early-career member of the Endocrine Society since 2019, **Priyanka Majety, MD**, is an assistant professor of endocrinology, diabetes, and metabolism at Virginia Commonwealth University (VCU). She is the adult outpatient diabetes director for the VCU Health System. She completed her endocrinology fellowship at Beth Israel Deaconess Medical Center and the Joslin Diabetes Center, affiliated with Harvard Medical School, following her internal medicine residency at Tufts Medical Center. Majety's clinical interests include diabetes, obesity, and endocrine disorders with a special focus on diabetes and metabolic health. She has received several awards including the American Diabetes Association (ADA) Scholars Award and is also a Fellow of the Southern Society for Clinical Investigation (SSCI) and Fellow of the Endocrine Alliance Academy (FEEA).

"My love for endocrinology developed over the years," Majety says. "It began during medical school when I worked with a mentor in a rural diabetes clinic and deepened further during my first elective in the U.S., which was an incredible experience."

Majety has published in several reputable peer-reviewed journals. She is the associate editor for the *Journal of Clinical and Translational Endocrinology* and is on the editorial board for various journals including *The Journal of Clinical Endocrinology & Metabolism* (JCEM) *Case Reports*, *World Journal of Diabetes*, and *Endocrine Connections*. She serves as a peer reviewer for various other prestigious endocrine journals.

"The Endocrine Society has been instrumental in my growth," Majety says. "It provided not only educational resources but also mentorship and networking opportunities early in my training. I especially loved the Early Career Forum — it played a key role in facilitating mentorship and connecting me with both experts and peers. Presenting at the Endocrine Society meetings gave me confidence, and participating in task forces and working groups helped me appreciate how endocrine care intersects with public health and policy. It's a community that fosters both curiosity and collaboration."

– BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. IN THE JULY ISSUE, HE WROTE ABOUT THE **ENDO 2025** SESSION, "OBESITY MANAGEMENT ACROSS THE LIFESPAN: SPECIAL CONSIDERATIONS AND HYPERCORTISOLISM."

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Seasoned researchers and scientists are all too familiar with the adage "publish or perish." However, as science and technology have evolved together, so too has the process. In other words, getting your paper in that prestigious peer-reviewed journal is just the first step in presenting your work to a broader audience.

BY GLENDA FAUNTLEROY SHAW

You and your colleagues spent months writing a research paper, submitted it to your desired peer-review journal, and just got word that it will be published. Congratulations! These are proud and satisfying moments for researchers at every level of their careers. Getting your article published, however, is just one step. Self-promoting your article should be next on your to-do list.

"Promoting your research can help you reach a wider audience beyond the journal readership or those in your immediate field," says Lisa Boucher, communications manager for Springer Nature in London. "News and social media coverage of research have also been associated with increased downloads and citations in some cases."

There are several strategies that can help spread the news of your newly published work. Here are some of the best ones a science researcher can use:

Tailor Your Results

Many healthcare journalists who might report on your study appreciate a summary of a journal article that is written in easy-to-understand language. Consider tailoring your methods, results, and conclusion sections in a few paragraphs so the information is understandable to different audiences. Include a sentence or two if your results and conclusions have impact on regional residents. Why is it interesting to the audience?

Collaborate with Your Institution

Your university's communications or public relations office is the best first step in spreading news about your article. Once the journal approves your article for publication, alert the office so the

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team can get a head start on the best promotional strategies. Your institution’s communications team has contacts with local and national media and can utilize several tactics:

- Distribute a press release that includes quotes from the lead authors.
- Feature your article on the website or newsletter.
- Create a blog post or video abstract.
- Share it through the institution’s official social media accounts.

Email Outreach

Your contact list can be a goldmine. Send personalized emails to researchers, collaborators, or practitioners who might benefit from or cite the work. Include a brief summary, the article link, and a friendly invitation to read or discuss it.

Use the Socials

Social media is one of the most powerful forms of communication worldwide. It is simple and accessible, which makes it attractive to users of all ages to join and share content. Social media statistics reported by the University of Maine found that there are about 4.8 billion social media users worldwide, representing 60% of the global population and 93% of all internet users. The report cited that people use an average of six different social networks each month. Each platform is unique on how it might appeal to researchers:

- **LinkedIn**: provides a professional-focused space for academic networking and sharing research insights.
- **ResearchGate**: a dedicated platform for academic networking and discussions can foster collaborations and expand research networks.
- **Reddit**: provides an informal space for sharing research. You can use genre-specific community pages to engage with an interested audience.
- **TikTok**: shares research through short educational videos and is a great way to reach a younger audience.
- **X (formerly Twitter)**: the 280-character limit makes it ideal for communicating concisely, sharing research insights, and participating in academic discussions through relevant hashtags.

Boucher acknowledges that there are challenges in using social media. “It can be difficult to accurately summarize your research in a limited number of characters,” she says. “This might not be enough space to give the full

context, limitations, and implications of your work. Consider different ways to present your work on social media platforms, such as making short videos or animations."

But what if you are not active on social media and can only manage one account? Don't forget to involve your co-authors. If any of them have public-facing platforms or social media, ask them to take the lead in promotion. Also, Boucher says "there isn't necessarily a one-size-fits-all answer" for what one platform may be better than others to join if you can only do one.

"Look for examples from communicators that you admire, or other people in your field. What platforms do they use, and in what format do they present their work?"

"If you are based at an institution with a communications office, ask them for their advice," Boucher adds. "They might have a variety of social media accounts and posts that you could contribute to, allowing you to promote your research on social media without having your own direct presence."

More Easy Strategies

- **Reach out to your professional societies.** Submit your article for inclusion in newsletters or journal highlights of relevant academic societies. Or, in the case of Endocrine Society members, *Endocrine News* magazine. Executive Editor Mark A. Newman comments that researchers would be surprised how easy it is to get their work featured in the Society's monthly publication. "So many of our best features and columns have simply come to fruition due to a member of a research team reaching out to me," Newman says. "Even if the topic might not fit into a current issue, issues are being planned months into the future where a member's research could find a home either as a feature or at least as part of a shorter column." Newman adds that for any research to be featured in the magazine, the study must meet at least one of the following criteria: The research must have been conducted by an Endocrine Society member or have appeared in one of the Endocrine Society's peer-reviewed journals.

- **Promote during presentations.** Whenever you're scheduled to present during a conference or webinar, mention your paper during presentations or poster sessions. Share handouts or slides with a link or QR code to the article.

Keep in mind, there is no deadline for promoting your research. Even if your paper was published a year ago, follow these guidelines as literature searches never end. EN

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– -SHAW IS A FREELANCE WRITER BASED IN CARMEL, IND. SHE IS A REGULAR CONTRIBUTOR TO *ENDOCRINE NEWS* AND WRITES THE MONTHLY LABORATORY NOTES COLUMN.

NIH Funding is in Jeopardy — The Endocrine Society is Advocating for your Research!

Funding for the National Institutes of Health (NIH) is in danger: Funds appropriated for research by Congress are not being released, the NIH is developing major restructuring plans without transparency, and the president's budget for FY2026 proposes a 40% cut to the NIH. Currently, delays and disruptions to grant review persist; many researchers are unable to draw down funds, and over $2 billion in grants have been cancelled outright.

The Endocrine Society is urging Congress to protect the NIH now and provide the NIH with at least $51.303 billion in the next fiscal year. Please take a moment to join our online advocacy campaign or share your story about how funding cuts are affecting your research by visiting **www.endocrine.org/take-action**.

CMS Releases Proposed Physician Payment Rule for CY2026; New Policies Expected to Provide 3% Increase for Endocrinology

The Centers for Medicare and Medicaid Services (CMS) released the annual Medicare Physician Fee Schedule (MPFS) proposed rule for calendar year 2026. This rule updates payment policies and payment rates for Part B services furnished under the MPFS, as well as makes changes to the Quality Payment Program (QPP).

CMS estimates that the policies, if implemented, will result in a 3% increase in total Medicare charges for endocrinology. However, CMS proposes to change the methodology for the allocation of indirect practice expenses (PE) within the physician payment formula, which will decrease overall charges for endocrinology in the facility setting by 10% but increase payments by 6% in the non-facility (office) setting. According to the agency, this change in allocation is part of a broader effort to equalize payment rates across care settings.

The rule also proposes changes to make telehealth delivery more efficient. The agency proposes to simplify the review process for adding services to the Medicare Telehealth Services List and to remove the distinction between provisional and permanent services. Finally, the rule notes that several Current Procedural Terminology (CPT) codes used for fine needle aspiration services have been nominated as misvalued, but the agency does not agree that these codes are misvalued noting that they have indicated this in previous rulemaking. A summary and analysis with more details about what is included in the proposed rule is available on the Endocrine Society's website at: **www.endocrine.org/improving-practice/macra**.

Every year, CMS requests feedback on its proposed changes, and the Endocrine Society responds by submitting a comment letter to the agency. The Endocrine Society will work with the Clinical Affairs Core Committee (CACC) to review and develop comments for CMS to consider while finalizing the rule. Comments to the proposed rule are due on September 12.

NIH Announces Policy Updates Regarding Prioritizing Human-Focused Research and Use of AI in Grant Applications

The National Institutes of Health (NIH) recently notified the research community of two policy updates that may be of interest to member scientists:

1 NIH Prioritization of Human-Focused Research On July 10, the NIH announced that all new Notices of Funding Opportunity (NOFOs) that "relate to animal model systems must now also support human-focused approaches." Such approaches could include, for example, clinical trials or new approach methods (NAMs). The announcement aligns with an earlier NIH notice in April emphasizing a reduction in the use of animals in research while prioritizing non-animal methods such as organoids, tissue chips, computational models, and "real-world data." Importantly, the policy does not prohibit grantees from submitting grants that utilize appropriate animal models in research. Rather, the NIH is emphasizing that they are unlikely to support a NOFO with, for example, the exclusive aim of developing new animal models. While we support the development and application of NAMs when they can demonstrably reflect biology, the Endocrine Society appreciates our members' concern that pressure to move away from animal research in favor of NAMs will limit scientific opportunity. We will continue to stress to the NIH and policymakers that NAMs have significant limitations and currently are largely unable to assess sex as a biological variable, let alone endocrine tissue crosstalk, developmental stages, or genetic variability. We encourage members to contact their program officers with any questions regarding the new policy or impact on funding opportunities of interest.

2 Guidance on the Appropriate Usage of AI On July 17, the NIH issued guidance to grantees explaining expectations regarding allowable uses of artificial intelligence (AI) in grant applications. Per policy, the NIH "will not consider applications that are either substantially developed by AI, or contain sections substantially developed by AI, to be original ideas of applicants." Furthermore, and in response to a small number of investigators submitting dozens of applications in a single cycle that likely have significant AI-generated components, the NIH will only accept up to six new, renewal, resubmission, or revision applications from an individual principal investigator for all rounds in a council year. The policy will go into effect September 25, 2025, and not apply to R13 conference grant applications or T activity codes. EN

The Algorithm Will See You Now

Clinical decision support tools enhancing precision and efficiency in endocrinology.

COMPILED AND WRITTEN BY COURTNEY CARSON

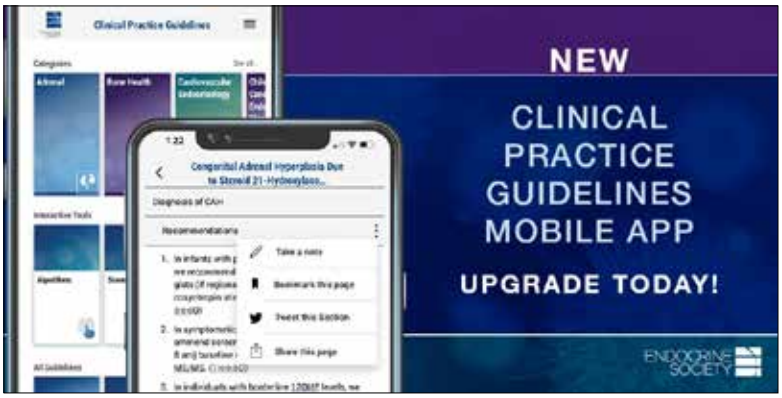
As endocrine disorders grow more complex, clinical decision support tools (CDSTs) are evolving to keep pace. Modern CDSTs have come a long way from the previous generic models – they're now much more advanced, seamlessly integrating into electronic health records (EHRs), and designed specifically for the complexities of endocrinology.

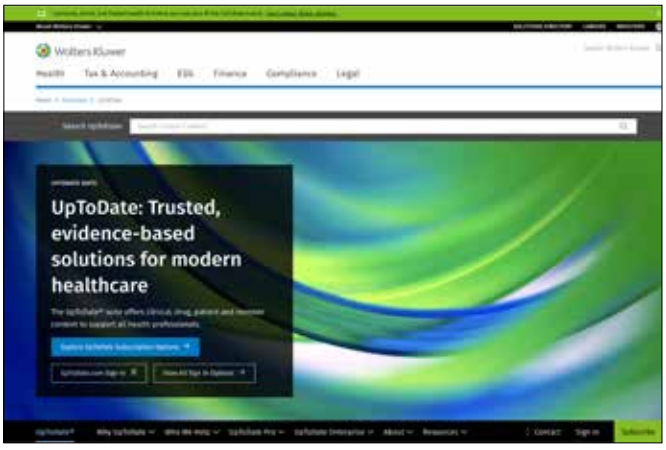
Managing endocrine conditions requires rapid interpretation of labs, imaging, and guidelines. As the layers of these conditions become more complex, endocrine care can benefit from tools that streamline clinical decision making.

Here, we take a look at some of the latest CDSTs taking endocrinology to the next level.

Endocrine Society's Clinical Practice Guidelines

Dedicated to providing the field of endocrinology with timely, evidence-based recommendations for clinical care and practice, the Endocrine Society has a robust set of clinical practice guidelines available for clinicians to access 24/7. These guidelines are continually developed and updated to reflect the latest breakthroughs in clinical science as well as various pharmacological and technological developments. Grouped by clinical area on an easy-to-navigate site, the Endocrine Society provides the latest guidance from adrenal, bone health, diabetes, and hypoglycemia to obesity, pediatric endocrinology, endocrine cancers and neoplasia, and more. **https://www.endocrine.org/clinical-practice-guidelines**





UpToDate's Auto-Dx and SmartPathways

UpToDate brings two valuable tools for endocrinologists managing complex cases — Auto-Dx and SmartPathways. Auto-Dx leverages patient-specific data — labs, vitals, medications — to suggest potential diagnoses in real time, directly within the electronic health records (EHR) interface. SmartPathways offers streamlined, step-by-step algorithms aligned with the latest clinical guidelines, offering endocrinologists access to interactive pathways for a range of conditions. One of the top advantages of UpToDate's platforms is the integration. These tools reduce time spent searching for protocols and minimize errors from misapplied criteria, increasing, rather than interrupting, workflow. As more health systems adopt EHR-integrated CDSTs, Auto-Dx and SmartPathways are bridging evidence and action in endocrine care. **https://www.wolterskluwer.com/en/solutions/uptodate**

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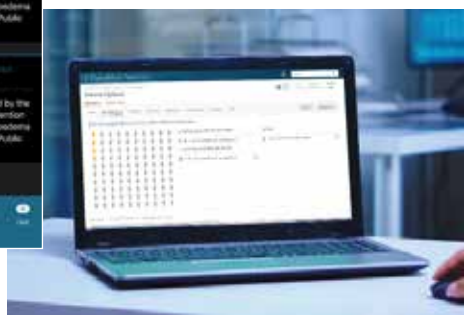
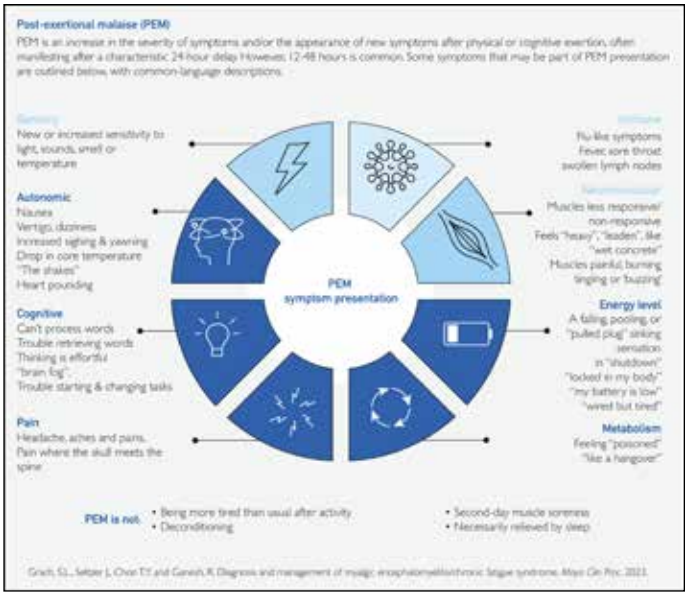


DynaMed Endocrinology Decision Trees

Endocrinology Decision Trees from DynaMed bring visual, evidence-based approaches to clinical decision making, streamlining guidance in the most complex areas of endocrinology. These interactive flowcharts help clinicians quickly navigate TSH suppression strategies in thyroid cancer, determine calcium and vitamin D replacement thresholds in hypoparathyroidism and osteoporosis, and evaluate candidacy for hormone replacement therapy, among other applications. Each pathway is built on the latest guidelines and links directly to supporting studies and risk calculators, making it easy to translate research into treatment plans. **https://www.dynamed.com**



Mayo Clinic's AskMayoExpert Pathways

Endorsed by leading academic institutions, AskMayoExpert Pathways are widely used across large health systems to promote standardized, evidence-based endocrine care. These structured clinical pathways offer step-by-step guidance on complex conditions including adrenal insufficiency, Cushing syndrome, and post-surgical thyroid monitoring. This tool aims to ensure protocol adherence, reduce variation in treatment, and align practice with the latest expertise. **https://ce.mayo.edu/content/askmayoexpert**

ClinicalKey AI

ClinicalKey offers a robust suite of resources tailored to support endocrinologists in daily practice, including clinical calculators, drug information, practice guidelines, high-quality images, and patient education handouts. More than a reference library, ClinicalKey aims to serve as a real-time clinical decision tool by integrating with clinical notes and lab results to generate diagnoses based on everything included in EHR records. In its early stages, ClinicalKey AI has been used in endocrinology clinics with a focus on metabolic syndrome and hypogonadism. As functionality expands, ClinicalKey aims to become an essential companion in endocrine care delivery. **https://www.clinicalkey.com**

The future of endocrinology is not AI versus MD — it's AI and MD. Clinical decision tools are emerging as a catalyst for more accurate, equitable, and efficient endocrine care. The algorithm is proving to be extremely helpful, but be reassured, these tools exist to assist — never replace — the art of endocrinology. EN

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