

JANUARY 2024

THE LEADING MAGAZINE FOR ● ENDOCRINOLOGISTS

Endocrine news

THYROID CANCER

Diagnosis, Treatment, Causes, and Care

- **GETTING BACK TO NORMAL:**
A look at a variety of new treatment options for hypoparathyroidism
- **FOR YOUR INFORMATION:**
Revealing new research highlights thyroid cancer treatment
- **STANDARDIZED TESTING:**
Why a universal risk stratification system is needed for diagnosing thyroid nodules

This image of a metastatic medullary thyroid carcinoma to the liver was submitted by Anthony Y. Yin, MD, of the California Pacific Medical Center in San Francisco, as part of the Endocrine Society's 2023 Endocrine Images Art Competition, which celebrates the beauty of endocrine science.

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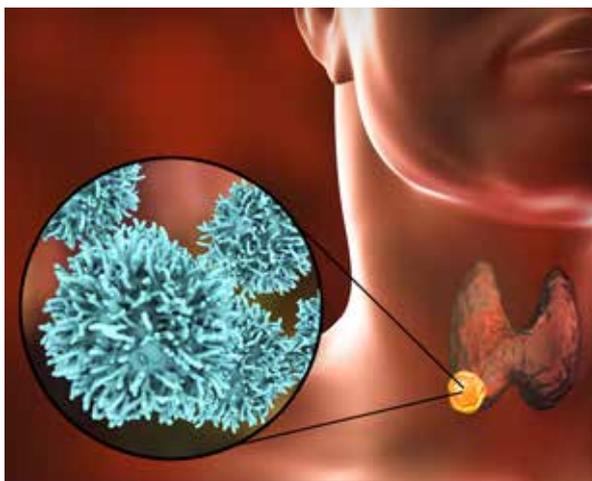
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**Ballots will be accepted through
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Thyroid cancer is the most common endocrine cancer in the world with more than 62,000 newly diagnosed cases each year in the U.S. alone. Here, we look at some of the latest research that includes a study from *Endocrine Reviews* on radiation-induced thyroid cancer; a *JCEM Case Reports* paper on false-positive results in metastatic thyroid cancer; and a presentation from ENDO 2023 that looks at thyroid cancer survival.

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Options for Treating Hypoparathyroidism

Endocrine News talks to Aliya Khan, MD, about the debilitating effects of hypoparathyroidism, new treatment guidelines she helped create, and exciting news from trials that showed promising results that could allow these patients to have a much-improved quality of life, both physically and psychologically.

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ABOUT THE COVER: Metastatic medullary thyroid carcinoma to the liver: The original image was a 400x hematoxylin and eosin-stained slide for conventional light microscopy documenting pathology confirmation of metastatic medullary thyroid carcinoma to the liver. The image was subsequently modified with solarizing effect and central ballooning expansion of the neoplastic deposit. Peritumoral endothelialized capillaries are enhanced by aqua staining; and erythrocytes are further delineated by magenta staining, capturing the inherent capacity for these rare malignancies to characteristically disseminate via the peripheral vascular system. Originally submitted by Anthony Yin, MD, Drayson Jaffee; Anthony Yin, MD; and Ian Jaffee, MD.

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Throughout the year, we provide opportunities to expand your horizons and meet individuals who share your interests. We are making the most of digital platforms to allow you to access the resources you need at your convenience.
”

The start of a new year offers an ideal time to reflect on our career goals and what we need to do to achieve them. As your professional home, the Endocrine Society offers a myriad of opportunities to help build your CV and advance your career.

This is an ideal time to register for our annual meeting, **ENDO 2024**, and start thinking about ways you can make the most of your time in Boston, Mass. The meeting will take place from June 1 to 4. Applications for many of our **ENDO** travel grants and the Early Investigator Awards are due this month. These programs help ensure early-career researchers who have submitted abstracts can take advantage of **ENDO**'s amazing networking opportunities and be exposed to emerging science.

Another way to meet your peers and build new professional relationships is to attend our Type 1 Diabetes Fellows Series event, which precedes **ENDO 2024**. This program, which will be held May 30-31, provides comprehensive education on type 1 diabetes care and gives fellows extensive opportunities to connect with leading experts in the field. Applications are due this month, and fellows who are invited to attend will receive complimentary **ENDO 2024** registration as well as a travel stipend. This is an excellent opportunity to form new connections in an intimate setting.

ENDO 2024 also will feature a career fair, a full slate of Career Development Workshops, and other opportunities for professional development. These include the popular Early Career Forum, held the day before the meeting. The Early Career Forum offers graduate and medical students, postdoctoral and clinical fellows, and internal medicine residents a unique opportunity to connect with today's leading endocrine professionals. The deadline to apply is Jan. 20. We also will be hosting our second Endocrinology Mentor Day, which is designed to educate medical students and residents from the Boston area about the endocrinology field. We are proud to offer these opportunities to position the next generation of endocrinologists for success.

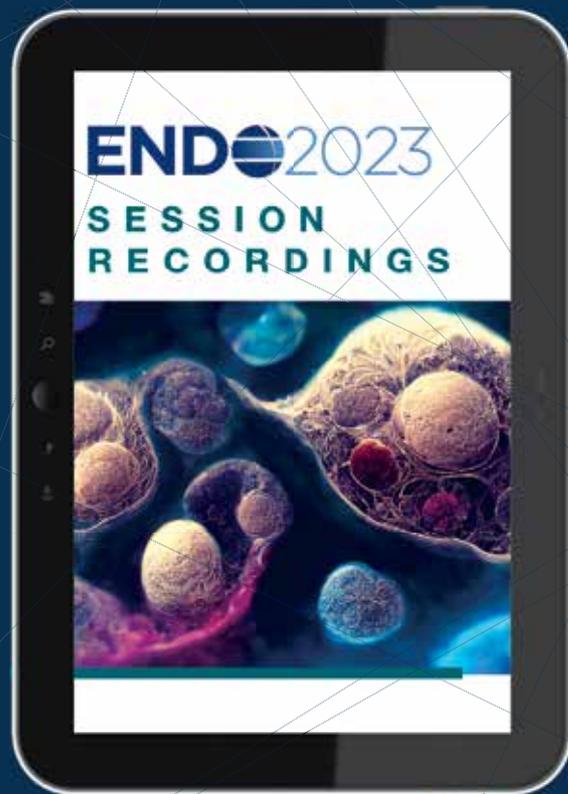
There is still time to submit a late-breaking abstract for presentation at **ENDO 2024**. Watch your inbox for announcements about the submission process, which is scheduled to take place from March 19 to April 10.

In addition to **ENDO**, we offer numerous opportunities for learning and career development throughout the year. This spring, we'll be holding our Future Leaders Advancing Research in Endocrinology (FLARE) and Excellence in Clinical Endocrinology Leadership (ExCEL) workshops. These in-person sessions allow early-career clinicians and researchers from underrecognized groups to receive comprehensive leadership training and mentorship. We inspire the next generation of leaders with a space and caring network that includes tools and contacts they need to set up and operate successful labs and/or practices.

Throughout the year, we provide opportunities to expand your horizons and meet individuals who share your interests. We are making the most of digital platforms to allow you to access the resources you need at your convenience. Our DocMatter online community gives you a venue to ask questions and collaborate with fellow Society members in real time. Through our Special Interest Groups, you can connect with peers who share your passion for specific endocrine topics and attend educational webinars. Our Center for Learning makes it easy for you to access educational materials about a variety of topics and to earn the continuing education credits you need. And, you can search for new career opportunities on your schedule using our EndoCareers site. These and a host of other tools are at your disposal as you look for ways to advance your career this year and beyond.

You also have an important opportunity to influence the direction of the Society. Voting is now open for our next president-elect, whose term will begin in June 2024. This is your chance to shape the future of the Society and our field, so please make sure to cast your ballot! 

Stephen R. Hammes, MD, PhD
President, Endocrine Society



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FROM THE **EDITOR**

JANUARY 2024

Endocrine news

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

Executive Editor: **Mark A. Newman**
mnewman@endocrine.org

Senior Editor: **Derek Bagley**
dbagley@endocrine.org

Art Director/Production: **Anthony S. Picco**
aspicco.wixsite.com/graphicdesigner

Art Director/Design: **Catherine C. Neill,**
CNJ Creative, saLLC
www.cnjcreative.com

Prepress & Printing: **The Sheridan Group**
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Endocrine News informs and engages the global endocrine community by delivering timely, accurate, and trusted content covering the practice, research, and profession of endocrinology.

Focusing on Thyroid Cancer

As we start the year, we are devoting the lion's share of the editorial pages this month to thyroid cancer. From its diagnosis and treatment to detailed studies about hypoparathyroidism, risk stratification for thyroid nodules, and more. With thyroid cancer being the most common endocrine cancer in the world, we thought it would be appropriate to devote this issue to its treatment and research.

New research from the world of thyroid cancer is featured in “**For Your Information: Recent Revelations on Thyroid Cancer Treatment**,” by Kelly Horvath on page 18. And, as is often the case, we are highlighting research from two Endocrine Society journals as well as a presentation from **ENDO 2023** in Chicago! Kelly has included a mesmerizing study from *Endocrine Reviews* on radiation-induced thyroid cancer, a *JCEM Case Reports* paper on false-positive results in metastatic thyroid cancer, and a presentation from **ENDO 2023** that looks at thyroid cancer survival. According to Megan Haymart, MD, the Nancy Wigginton Endocrinology Research Professor in Thyroid Cancer and a professor of medicine at the University of Michigan in Ann Arbor, we are now in an era of more personalized and tailored management of thyroid cancer. “However, there are both advantages and disadvantages to less-intensive treatment,” she says. “For example, although surgical risks are greater with more intensive treatment, the long-term follow-up is more difficult in patients who received less-intensive surgical or medical management (e.g., less use of radioactive iodine).”

In “**Getting Back to Normal: Options for Treating Hypoparathyroidism**” on page 24, senior editor Derek Bagley talks to Aliya Khan, MD, about the debilitating effects of hypoparathyroidism, as well as some new treatment guidelines she helped create. She also discusses exciting news from trials that showed promising results that could actually lead to a much-improved quality of life for these patients, both physically and psychologically. Khan details one patient in particular who found relief from his hypoparathyroidism after participating in a clinical trial of a prodrug that replaced parathyroid hormone. This patient's symptoms were so severe that not only did he have recurrent



President: **Stephen Hammes, MD, PhD**
president@endocrine.org

President-Elect: **John Newell-Price, MD, PhD, FRCP**
j.newellprice@sheffield.ac.uk

Past-President: **Ursula B. Kaiser, MD**
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jeffrey.boord@parkview.com

Chief Communications Officer: **Aaron Lohr**
alohr@endocrine.org

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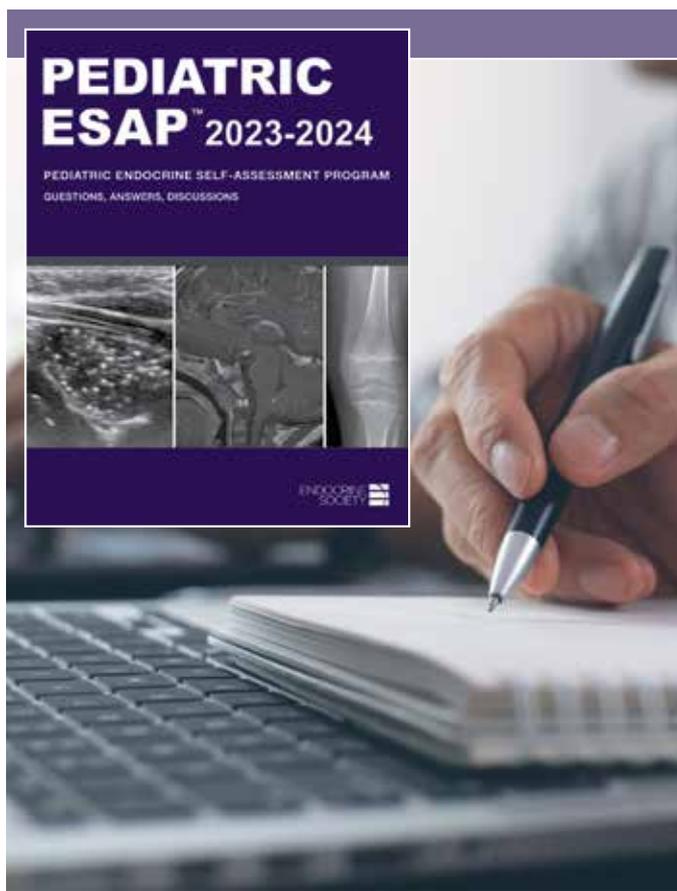
kidney stones throughout his life, but he also experienced seizures that limited his activities. “If you’re having seizures and you don’t know when you could have a seizure, that affects your ability to swim or do sports activities that other people take for granted because they know they’re not going to have a seizure,” she says, adding that he could have a seizure while he was swimming and potentially drown.

Originally, when we envisioned the Early-Career Corner department that launched last year, we thought it would be quarterly, if that often. Turns out, it has been monthly because the Endocrine Society’s early-career members are busy! On page 30, Derek speaks with Priyanka Majety, MD, in “**Standardized Testing: Universal Risk Stratification System Needed for Thyroid Nodules**,” who discusses why clinicians — not just endocrinologists, but general practitioners and other specialties as well — need to coalesce around a single set of standards for evaluating thyroid nodules. She says that in many cases, thyroid cancer patients often get different, and even conflicting, treatment recommendations from various diagnostic tools. One set of standards could bring that to an end.

The unpredictable nature of tumor behavior is the subject of this month’s Practice Resources column by Kelly Horvath on page 24. In “**Molecular Testing and the Future of Diagnosing Thyroid Cancer**,” Joshua Klopper, MD, the medical director for Endocrinology at diagnostics company Veracyte, discusses a new tool that could help physicians make treatment decisions by using molecular signatures to home in on how the tumor could react. Klopper refers to three separate posters on the new tool that were presented in September at the annual American Thyroid Association Annual Meeting in Washington, D.C.

Feel free to let us know what you think of this thyroid cancer issue. This theme essentially evolved from the topic being both timely as well as yielding various stories all interconnected one way or the other. As usual, if you have any other questions, comments, or ideas, let me know at: mnewman@endocrine.org.

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



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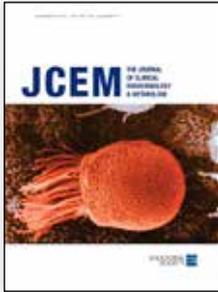
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BY DEREK BAGLEY
Senior Editor

TRENDS & INSIGHTS

Teprotumumab Improves Proptosis in Thyroid Eye Disease



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These data demonstrate that teprotumumab significantly reduced proptosis from baseline with a higher rate of proptosis response compared with placebo in patients with longstanding TED and low clinical disease activity.
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Teprotumumab significantly improved proptosis versus placebo in longstanding/low-inflammation thyroid eye disease (TED) according to data from the first placebo-controlled trial of the drug that was recently published in *The Journal of Clinical Endocrinology & Metabolism*. (Horizon Therapeutics funded the trial and is marketing the drug as TEPEZZA.)

Researchers led by Raymond S. Douglas, MD, PhD, of the Department of Ophthalmology at Cedars Sinai Medical Center in Los Angeles, point out that early TED can lead to symptomatic chronic disease, including proptosis, which can be debilitating. In 2020, teprotumumab, an insulin-like growth factor-1 receptor (IGF-1R) inhibitor, was the first drug approved for TED treatment in the U.S. and has been recommended as the first-line treatment for a wide group of patients with moderate to severe TED presenting with active inflammation and significant proptosis and/or diplopia.

“Although several observational reports have been published indicating favorable effects of teprotumumab in a wide group of patients with chronic TED, there are no well-controlled study data with teprotumumab in patients with longer duration of TED without active inflammation,” the authors write. “We report results of the first randomized, double-masked, placebo-controlled trial in patients with TED with low clinical activity. The objective of this study was to investigate the efficacy, safety, and tolerability of teprotumumab in patients with long-duration TED and low disease activity as assessed by the [Clinical Activity Score (CAS)].” For this study, the researchers randomized 62

adult participants who have had TED for two to 10 years. Forty-two patients received intravenous teprotumumab once every three weeks for a total of eight infusions, while 20 received placebo. At week 24, proptosis improvement was greater with teprotumumab than with placebo. “Patients in this trial had a statistically significant decrease, as assessed by [least squares] mean changes in mm of proptosis and a higher percentage of patients with a 2-mm reduction from baseline (62%) as compared with placebo,” the authors write. (Adverse effects like hyperglycemia and hearing impairment were also noted, as in previous



teprotumumab trials.)

“The results from this randomized controlled study add to the increasing body of literature from real-world clinical practice on teprotumumab’s efficacy in treating TED,” the authors conclude. “These data demonstrate that teprotumumab significantly reduced proptosis from baseline with a higher rate of proptosis response compared with placebo in patients with longstanding TED and low clinical disease activity.”

Testosterone Therapy for Transmasculine Individuals May Be Safer Than Previously Thought

A common concern about gender-affirming hormone therapy for transmasculine people is the risk of red blood cell volume changes and erythrocytosis, a high concentration of red blood cells, with the use of prescribed testosterone. However, Mount Sinai researchers have found that testosterone treatment may be safer than previously reported, with results published recently in *The Journal of Clinical Endocrinology & Metabolism*.

Mount Sinai researchers from the Division of Endocrinology and Center for Transgender Medicine and Surgery examined the relationship between the use of testosterone as part of gender-affirming hormone therapy (GAHT) for transmasculine individuals and changes in hematocrit. The study of a large North American cohort is the largest on this subject to date.

“A major concern of patients, providers, and parents is the safety of hormone therapy for transgender and gender-diverse people. The findings from this study represent very important reassurance regarding the safety of testosterone as masculinizing treatment,” says senior author Joshua Safer, MD, FACP, executive director of the Mount Sinai Center for Transgender Medicine and Surgery, professor of Medicine at the Icahn School of Medicine at Mount Sinai, New York, N.Y. “Providers should feel more comfortable prescribing testosterone when it is indicated. Patients and the families of patients should feel reassured regarding at least this one source of anxiety about treatment.”

The researchers conducted a cross-sectional analysis of serum-based testosterone and hematocrit levels in 6,670 transmasculine patients who were prescribed testosterone for GAHT through Plume, a virtual provider of gender-affirming care across 45 states. Patients were included if they had an active prescription

from Plume for a testosterone product as part of their GAHT regimen, and recent hematocrit and testosterone laboratory values available for analysis. The total testosterone was measured using liquid chromatography-mass spectrometry, and hematocrit was calculated as part of a complete blood count. The hematocrit and testosterone laboratory values were collected as part of the same blood sample, typically mid-week after a weekly injection, for all patients using injectable forms of testosterone.

Researchers found that higher testosterone levels were associated with higher hematocrit levels; however, the magnitude of change in hematocrit was small and unlikely to be clinically meaningful. Only 8.4% of transmasculine individuals in the study had a hematocrit greater than 50%, and less than 1% had a hematocrit greater than 54%, the level at which treatment for erythrocytosis is recommended, often using phlebotomy. These numbers are lower than those previously reported in smaller studies, and the finding of such a small degree of change in hematocrit and a lower risk of erythrocytosis should provide more assurance to those prescribing and using testosterone as GAHT.

“Our study found that the numbers of patients on testosterone therapy with abnormal red blood cell elevations were lower than previously reported in smaller studies. It’s noteworthy that in the largest North American cohort reported to date, less than 1% of transmasculine individuals had a hematocrit level where medical interventions might be required. These results should help providers feel more comfortable prescribing testosterone as part of GAHT,” says the first and corresponding author, Nithya Krishnamurthy, a second-year medical student at Icahn Mount Sinai. “This work suggests a need to assess the influence of other factors that can lead to secondary erythrocytosis, such as being overweight, smoking tobacco, or using alcohol.”



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Investigational Drug Restores Parathyroid Function in Rare Disease

An investigational drug, encaleret, restored calcium levels in people with autosomal dominant hypocalcemia type 1 (ADH1). Results from the clinical trial, which was led by clinician-scientists from the National Institute of Dental and Craniofacial Research (NIDCR) at the National Institutes of Health's Clinical Center, are published in the *New England Journal of Medicine*.

In the mid-phase clinical trial, 13 participants with ADH1 received oral doses of the investigational drug for about 24 weeks. By the end of the trial,

could cause kidney stones or damage kidney tissues, leading to kidney failure in worst-case scenarios. The patients need better treatments, so we're not constantly walking on a tightrope."

Encaleret is thought to exert its effects by acting on faulty calcium-sensing receptors that are peppered throughout the kidneys and the parathyroid glands. In healthy people, these receptors act like thermostats to monitor and control calcium levels. However, in patients with ADH1, the receptors are too sensitive and falsely interpret normal blood calcium levels as high. As a result, the parathyroid glands do not make enough parathyroid hormone, and the kidneys flush too much calcium out of the body. This leads to low calcium levels in the blood and high levels in the urine.

Encaleret appeared to be safe and caused no serious side effects. However, because parathyroid hormone raises blood calcium levels in part by drawing calcium from the bones, the researchers noted a

need to assess the treatment's long-term effects on the skeleton. The researchers also speculate encaleret may have broader implications. An ongoing clinical trial led by Collins and NIDCR staff clinician Iris Hartley, MD, is testing whether the treatment can help correct calcium levels in people whose parathyroid glands have been damaged by surgery.

"Because ADH1 can be passed on to offspring, the participants are not just doing this for themselves; it's for their children, grandchildren, and great-grandchildren," Gafni says. "One day, hopefully, we'll be writing prescriptions for an effective treatment thanks to them." ^{EN}

the treatment restored every participant's blood calcium level to normal, and urine calcium approached normal levels. Levels of parathyroid hormone also normalized.

"It was amazing to see that every participant responded to the treatment. In literally minutes after taking the medication orally, the levels of parathyroid hormone increased dramatically," says senior author and NIDCR endocrinologist Michael Collins, MD.

"Conventional therapy is to raise the blood calcium level with calcium supplements and activated vitamin D," says principal investigator and NIDCR pediatric endocrinologist Rachel Gafni, MD. "However, too much of an increase



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Jameson Named Interim President at Penn

J. Larry Jameson, MD, PhD, was named interim president of the University of Pennsylvania in a unanimous motion by the school's board of trustees last month. Jameson had previously served as dean of Penn's Perelman School of Medicine.

"Penn is a remarkable institution that I am honored and humbled to lead and serve," Jameson says. "Penn, like so many of your institutions, is poised to make breakthroughs – like the mRNA platform for vaccines and gene therapy that was recently recognized with the Nobel Prize."

The news comes after the university's former president, Liz Magill, stepped down amid criticism stemming from Magill's controversial remarks at a Congressional hearing.

A past-president of the Endocrine Society and former editor-in-chief of the *Journal of the Endocrine Society* — among many other leadership roles, both in academia and within the Society — Jameson has been at the helm of the medical community in one form or another since he joined Northwestern University Medical School as chief of the Division of Endocrinology, Metabolism, and Molecular Medicine in 1993.

One example of Jameson's leadership in a difficult time came in a March 2020 opinion piece he wrote for *The New York Times* on behalf of himself and six other medical experts, urging national leadership to continue social-distancing policies. "It will be important for us to continue to emphasize a social contract in which we support one another to get through this as effectively as possible," he told *Endocrine News* at the time.

Now, Jameson says he hopes that stewardship will help inform his new role. "I served as president of the Endocrine Society in 2000, and that leadership experience was transformative for me given the breadth of the endocrine community, the rapid changes in the field, and access to the extraordinary mentors in our Society," he says. "The field of endocrinology, founded on concepts of systems thinking, feedback loops, and homeostasis, is a natural one for today's leaders. I hope those with similar endocrine backgrounds will also contribute as academic leaders."

— Derek Bagley



J. Larry Jameson, MD, PhD

“

The field of endocrinology, founded on concepts of systems thinking, feedback loops, and homeostasis, is a natural one for today's leaders.

I hope those with similar endocrine backgrounds will also contribute as academic leaders.

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John H. Nilson, PhD

Remembering John H. Nilson, PhD (1950 – 2023)

By Ruth A. Keri, Joan S. Jorgensen, Helai P. Mohammad, and Mary Hunzicker-Dunn

The research world has lost an innovator, mentor, advocate, and friend. It is with great sadness that the Endocrine Society reports that John Helmer Nilson, former editor-in-chief of *Molecular Endocrinology*, vice president for basic science, and recipient of the 2011 Sidney H. Ingbar Award for Distinguished Service, passed away in September while on holiday in Sardinia, Italy.

Born on July 12, 1950, in Mankato, Minnesota, John spent his formative years with his family in Albuquerque, N.M. After considering a major in religion and being told that the “church wasn’t ready for him yet,” he ultimately earned a Bachelor of Science degree in zoology from the University of Tulsa. He then completed his doctorate in biology at the University of New Mexico, working with Robert O. Kelley on the regulation of adenylate cyclase by glycosaminoglycans. During this time, John became very interested in RNA and the developing field of molecular biology. Thus, he joined the laboratory of Fritz Rottman who was at the forefront of discerning mechanisms controlling RNA processing at Michigan State University. It was here that John began his long journey of innovation in the field of molecular endocrinology and the transcriptional regulation of reproduction, by first cloning the bovine prolactin gene. He also characterized the developmental patterns of prolactin and growth hormone gene expression in bovine pituitaries.

In 1980, John started his independent academic career as

an assistant professor of pharmacology at the Case Western Reserve University School of Medicine. He rapidly became

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While he made tremendous contributions to science in many ways, John will be most remembered for his exceptional mentorship and sponsorship of his own trainees and others who he met along the way. He had an uncanny knack for identifying people who 'just needed a chance to prove themselves' and he gave them the platform to accomplish all that they could achieve.

”

a leader in his field by using state-of-the-art techniques to first clone, and then probe the transcriptional control of the gonadotropin genes. John was fearless in his approach and

used all methods available to him. This included being at the forefront of using transgenic technology to interrogate gene regulation when no cell lines were available to accomplish such a task. John rapidly moved through the ranks of academia to become the John H. Hord Professor and chair of pharmacology at CWRU from 1997 to 2003 and then moved to Washington State University to become the Edward R. Meyer Distinguished Professor and director of the School of Molecular Biosciences at Washington State University.

During his research career, he remained highly productive and was sought after by many peer review panels for his insights into molecular biology and physiology and his “tough, but fair” approach. In 1998, he assumed the role of editor-in-chief (EIC) of the Endocrine Society’s *Molecular Endocrinology*, where he transformed the journal into a working partnership between editors, reviewers, and readers that published the highest quality of science discovering the molecular basis of endocrine systems. He and his team evolved the journal by shepherding it into the digital age, designing and testing an approach that was then adopted by the companion Endocrine Society journals. In his editorial on the merging of the journal with *Endocrinology*, John stated that *Molecular Endocrinology* was “dedicated to maintaining the highest standards of scholarly science” and that he was thankful for the “opportunity and for the trust it entailed.”

Immediately after completing his term as EIC, John took on a greater role in the Society by being elected vice president for basic science in 2003 for a two-year term. Here, he was an ardent advocate for ensuring basic science inclusion in all aspects of the Endocrine Society. For his many contributions to the Society, John received the Sidney H. Ingbar Distinguished Service Award in 2011. His interests in the molecular basis of endocrinology also fostered his service to the Society for the Study of Reproduction, where he provided keen insights

into its publications committee; was a member of its board of directors; and ultimately, served as its president during the 2009-2010 term.

In addition to his innovation in these realms, John was ahead of his time in other arenas. As chair of his department at CWRU, he was one of the first at his school to recognize that business principles were relevant and useful in the academic setting. He worked with an organizational coach to use various established instruments in business to build integrated collaborative teams among the faculty, trainees, and staff.

Announcing the Nilson Award

In recognition of Dr. Nilson’s distinguished career as a basic scientist and his commitment to mentorship and career development, the Endocrine Society has created the John H. Nilson Travel Award for Exceptional Basic Science Research. This annual award will recognize innovative research in molecular endocrinology by a doctoral graduate student or postdoctoral fellow.

The Society invites the endocrine community to honor Dr. Nilson’s legacy with a donation in support of this award. Advances in basic science research are at the center of improving our understanding of endocrinology and the development of new treatments for patients with endocrine disorders. We hope you will join us in supporting young endocrine basic scientists and recognizing Dr. Nilson’s contributions to our field. You can contribute to the Nilson Award here: <https://www.endocrine.org/membership/make-a-donation>.

On behalf of Dr. Nilson’s friends and colleagues,
thank you for your support.

In the classroom, he strove to diminish the complexity of feedback loops in endocrinology by relating to the everyday experiences of students, including the use of a golf club to explain the hypophyseal portal system. As the leader of the Medical Scientist Training Program at CWRU, he routinely developed extracurricular activities to break down barriers between students and faculty.

While he made tremendous contributions to science in many ways, John will be most remembered for his exceptional mentorship and sponsorship of his own trainees and others who he met along the way. He had an uncanny knack for identifying people who “just needed a chance to prove themselves” and he gave them the platform to accomplish all that they could achieve. A look at the numbers from his own

“

As a result of his unwavering dedication to fostering the growth and innovative thinking of his mentees, John will always be remembered as a person, who, above all, cared. He was a champion of the underdog, wordsmith, innovator, confidant, master of puns, lover of life, and, most importantly, generous and kind.

”

laboratory tells just part of the story: More than 30 graduate students, postdoctoral fellows, and physician-scientists completed their training with him and were highly successful. This includes 19 professors, chairs, and vice presidents of universities; four founders, vice presidents, and directors of biotechnology/pharmaceutical companies; and two program

leaders in government agencies. More than 50% of his trainees were women or from underrepresented groups. His reach also extended beyond his own laboratory to include many mentees from other departments and universities. He was always ready to listen and provide advice. He often said that “their success was his success” and he was fully committed to them.

As a result of his unwavering dedication to fostering the growth and innovative thinking of his mentees, John will always be remembered as a person, who above all, cared. He was a champion of the underdog, wordsmith, innovator, confidant, master of puns, lover of life, and, most importantly, generous and kind. One of his former trainees stated a common refrain: “*I know that I would not be where I am today without John giving me the opportunity to work in his lab and his going to great lengths to make sure I had every opportunity to succeed.*”

John, being ever cognizant of his role in developing scientists, then chose to retire at age 65 to ensure room for new ideas and approaches by the next generation. He moved with his wife, Mary Hunzicker-Dunn, herself a leader in the field of ovarian biology, to Taos, N.M., to begin a new adventure, continuing to learn about life, fishing, golfing, and how to navigate an Airstream across the United States. While John Nilson will be greatly missed, his trainees have learned to “pay it forward” and will continue his legacy of leadership, joy at discovering the unknown, and support of those in need.

– **Ruth A. Keri, PhD**, staff, Cancer Biology, Lerner Research Institute, Cleveland Clinic; professor, Molecular Medicine, Cleveland Clinic Lerner College of Medicine; associate director for Basic Research, Case Comprehensive Cancer Center; Case Western Reserve University School of Medicine, Cleveland, Ohio; **Joan S. Jorgensen, DVM, PhD**, professor, Department of Comparative Biosciences; director, UW-Madison PREP; School of Veterinary Medicine, University of Wisconsin, Madison; **Helai Mohammad, PhD**, vice president; head of Biology, SK Life Science Labs; King of Prussia, Pa.; and **Mary Hunzicker-Dunn, PhD**, professor emeritus, School of Molecular Biosciences, Washington State University, Pullman, Wash.

Endocrine Society Recommends Bipartisan Solutions to Senate HELP Hearing on Diabetes, Obesity

The Endocrine Society commends the Senate Health, Education, Labor, and Pensions (HELP) Committee for calling attention to the issues that are fueling the diabetes epidemic in its December 14 hearing and urges the Committee to support bipartisan legislation to begin to address the crisis in our country.

More than 38 million Americans have diabetes, and, while we have the medications and technologies to treat people



living with the disease, access and affordability remain an issue. Obesity, which is a major risk factor for diabetes, affects more than 40% of Americans. Several promising anti-obesity medications are available, but supply and cost are major roadblocks, and congressional action is needed to allow Medicare to cover these medications.

“It’s time for Congress to take action and pass legislation to help the millions of people with chronic conditions, including diabetes and obesity, by making their healthcare more affordable and accessible, and by supporting the diabetes research and prevention programs that have been crucial in our fight against this disease,” says the chair of the Society’s Clinical Affairs Core Committee Joshua Joseph, MD, MPH, of The Ohio State University Wexner Medical Center in Columbus, Ohio. “The Endocrine Society has long advocated to remediate the access and affordability issues that are contributing to the diabetes and obesity epidemics while strengthening the programs that deliver groundbreaking

research on diabetes. People with diabetes and obesity deserve access to affordable healthcare that will improve their quality of life.”

The Endocrine Society urges Congress to support the following bipartisan legislation to address the diabetes crisis in our country:

▶ **Reauthorize the Special Diabetes Program (SDP) before January 19** — SDP is a bipartisan program created in 1997 that funds critical research being done on type 1 diabetes and type 2 diabetes education and treatment programs for American Indians and Alaska Natives. The Endocrine Society urges Congress to reauthorize SDP through the end of 2025 at \$170 million per program, per year, which is a 13% increase in current funding.

▶ **Pass the bipartisan INSULIN Act of 2023** — This legislation, introduced by the co-chairs of the Senate Diabetes Caucus, Sens. Jeanne Shaheen (D-NH) and Susan Collins (R-ME), includes several policies to make insulin more affordable. It would expand the \$35 insulin co-pay cap, which is currently available for people on Medicare, to the private insurance market. The legislation would also ensure that people who rely on insulin are able to share in insulin rebates and discounts, which often go to pharmacy benefit managers and private insurers. Finally, the legislation would promote competition by encouraging the approval of additional generic and biosimilar insulins.

▶ **Pass the Treat and Reduce Obesity Act (TROA)** — There are groundbreaking Food and Drug Administration-approved medications on the market to treat obesity, and scientific studies have shown these medications are effective. Currently, however, Medicare is prohibited by statute from covering these anti-obesity medications, and congressional action is needed. TROA would allow Medicare to cover anti-obesity medications. We urge the Senate to pass this bipartisan legislation. ^{EN}

ENDO 2024

June 1 – 4, 2024 • Boston, Mass.



We hope to see you at **ENDO 2024**, taking place June 1 – 4, 2024, in Boston, Mass. With over 7,000 attendees, nearly 2,000 abstracts, and over 200 other sessions, **ENDO** is the top global meeting on endocrinology research and clinical care. **ENDO** provides the opportunity to collaborate with an unparalleled list of endocrinologists, healthcare practitioners, and leading scientists from around the world. Through sharing our experience, advice on patient care, and new advances in research, we move the needle forward in hormone health and science. Our outstanding slate of world-renowned speakers will showcase the most cutting-edge advances in research and medicine, with presentations spanning the spectrum of science, clinical care, and social implications. <https://www.endocrine.org/meetings-and-events/endo-2024>

2024 CDEI

Snowmass, Colorado

January 20 – 23, 2024

The 59th Annual Clinical Diabetes and Endocrinology Institute CME Conference will address updates in hormonal contraception, transgender health guidelines, thyroid nodules, lipids, management of thyroid cancer, obesity, Cushing syndrome, type 2 diabetes, and much more. The faculty, composed of known experts, will offer insights, latest research, case presentations, and clinical guidelines.

<https://www.eventsquid.com/event.cfm?id=20903>

BPS 2024

Philadelphia, Pennsylvania

February 10 – 14, 2024

At the Biophysical Society's BPS 2024, the symposia and workshops are as exciting as ever, with a slate of invited speakers that represent breakthrough biophysics research and who will give a glimpse into what the next generation of our society looks like. For the first time, we have reserved at least 20% of symposia talks for speakers selected directly from submitted abstracts. Principal investigators will find the new option to self-



suggest their abstract describing their latest research for symposia topics. The topics will be varied and stimulating, covering the broad membership of our society. From staple themes like membrane proteins to venturing into new areas where biophysics is making an impact, such as plant biology and how biological systems adapt to temperature change.

<https://www.biophysics.org/2024meeting#>

AAES 2024 Annual Meeting

Dallas, Texas

April 20 – 22, 2024

American Association of Endocrine Surgeons 2024 Annual Meeting attendees

can look forward to dynamic speakers, presentations of innovative research, opportunities to connect with colleagues, and informative panel discussions. This year's pre-meeting Advanced Course in Endocrine Surgery will include outstanding faculty and a wide range of topics. In addition, sponsors will be on site to showcase cutting-edge technological advancements pertinent to the practice



of endocrine surgery. The AAES Annual Meeting is dedicated to the advancement of the science and art of endocrine surgery through exchange of knowledge and fostering collaboration. The upcoming 2024 event promises to deliver innovative

programming that will enrich attendees' clinical practices, provide networking opportunities, and facilitate scholarly pursuits. We cordially invite you to join us in Dallas for this exciting event. It will be an excellent opportunity to dive into new topics, share expertise, and connect with peers who share similar interests.

<https://www.endocrinesurgery.org/2024-annual-meeting>

2024 Lab Manager Leadership Summit

Denver, Colorado

April 29 – May 1, 2024

The Lab Manager 2024 Leadership Summit will offer actionable advice on the management, business, safety, and staffing challenges facing



today's lab managers. The program's expert speakers will provide you with the tools you need to reach higher levels of engagement and efficiency among your lab teams. Topics will range from dealing with burnout, to incorporating automation into your lab, to lab operations, to effective communication, and much more — an interactive Q&A will follow each session. Attendees will also be able to participate in hands-on workshops and roundtable discussions, where they will receive focused advice and learn from real-life examples of leadership success.

<https://www.labmanager.com/lab-manager-leadership-summit-30946>

INTERNATIONAL ITINERARY

ATTD 2024

Florence, Italy/Virtual

March 6 – 9, 2024

The 17th International Conference on Advanced Technologies & Treatments for Diabetes (ATTD 2024) is the leading international forum where clinicians, diabetes care providers, researchers, industries, start-up, investors, reimbursement authorities, regulators, and people with diabetes, assemble with the goal to ameliorate the care of people with diabetes at the fastest possible pace. Presentations and discussions will be given by many distinguished professionals in the field and will include topics such as artificial intelligence-based decision support systems, glucose sensors, closed-loop systems, artificial pancreata, devices for diabetes prevention, new medications for the treatment of diabetes, new insulins and new insulin-delivery systems and pumps, and much more.

<https://attd.kenes.com/>

World Endocrine, Diabetes & Cardiovascular Conference (EDCC24)

Bangkok, Thailand

March 9 – 10, 2024

The conference program includes local and international speakers with inspiring insights to share on advancing endocrinology, diabetes, cardiovascular health, and metabolism quality improvement through patient and family experiences. This will be an opportunity to come together, collaborate, and share the latest advancements in the endocrinology field, offering the chance to learn and collaborate across a variety of approaches, disciplines, and specialties, providing engaging on-demand and live sessions.

<https://endocrine.episirus.org/bangkok>

Diabetes Meet 2024

Rome, Italy/Virtual

March 11 – 12, 2024

This Diabetes Meet 2024 Conference invites all the academic scientists, endocrinologists, surgeons, primary healthcare specialists, pediatricians, pharmaceutical industrial delegates, talented young scientists, and student communities across the globe to attend this meeting where all the aspects of diabetes mechanism, disorders, and treatment will be discussed under a single roof.

<https://www.diabetesmeet.com>

ECE 2024: 26th European Congress of Endocrinology

Stockholm, Sweden

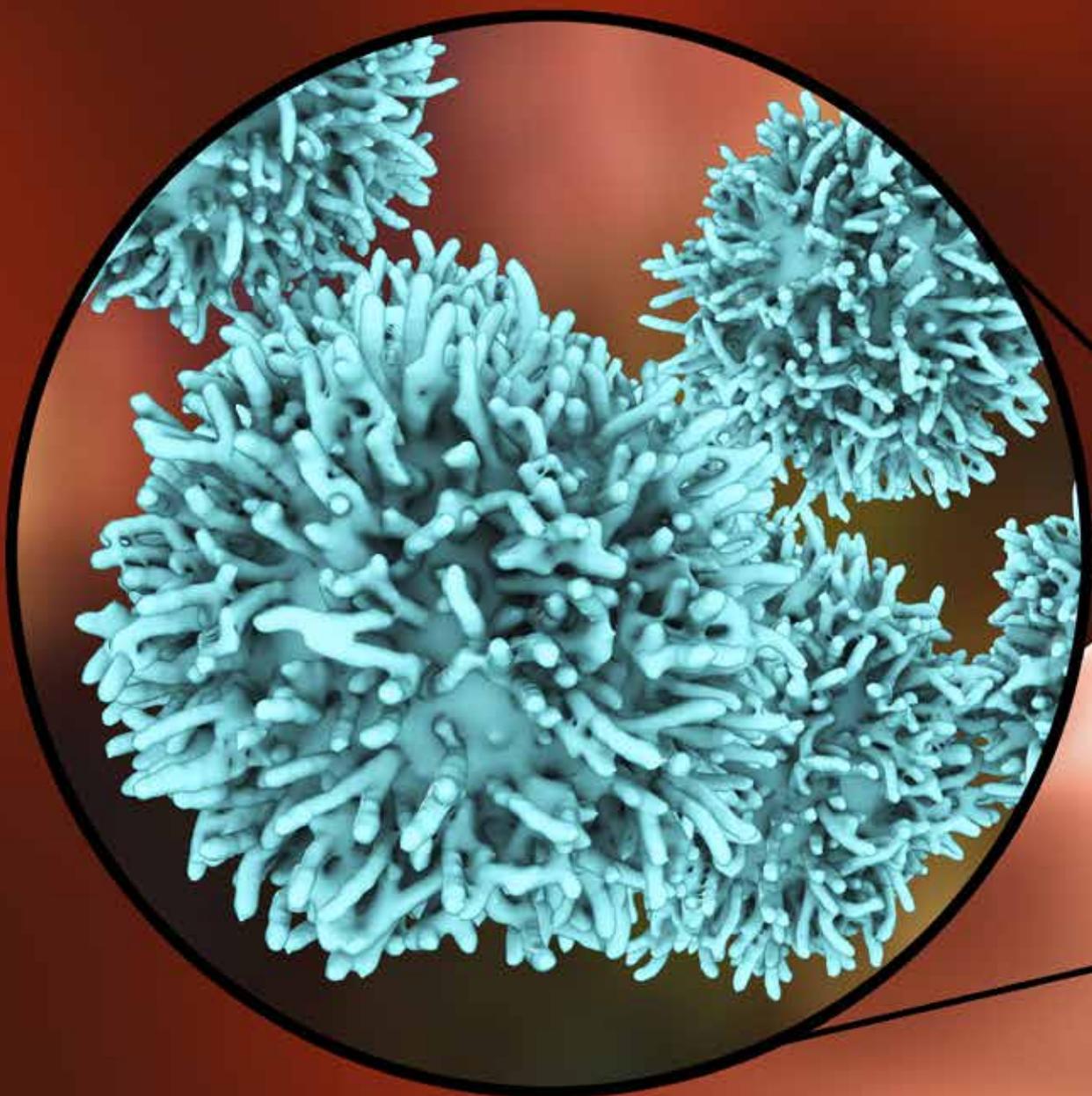
May 11 – 14, 2024

Attracting over 4,000 delegates, from more than 100 countries, ECE continues to develop as a world-leading congress for endocrine specialists. Given that our community works on diverse research topics and sees patients with a wide range of conditions, ECE enables access to a comprehensive program, covering the breadth of endocrinology. Whatever your area of interest, there will be sessions that are of direct relevance, as well as extensive networking opportunities.

<https://www.es-hormones.org/events-deadlines/european-congress-of-endocrinology/ece-2024>

BY KELLY HORVATH

For Your Information



Recent Revelations on Thyroid Cancer Treatment



Thyroid cancer is the most common endocrine cancer in the world, with more than 62,000 newly diagnosed cases each year in the U.S. alone. Here, we look at some of the latest research that includes a study from *Endocrine Reviews* on radiation-induced thyroid cancer, a *JCEM Case Reports* paper on false positive results in metastatic thyroid cancer, and a presentation from **ENDO 2023** that looks at thyroid cancer survival.

Three studies from last year delve into some of the nuances of thyroid cancer, the most common endocrine carcinoma.

One study goes deep into examining the risks of developing thyroid cancer after radiation exposure, whether due to a planned, existing, or an emergency situation.

Next, as thyroid cancer is commonly overtreated, often due to unnecessary or overly aggressive thyroid surgery, the second study examines thyroid cancer surveillance, offering excellent guidance and potential opportunities on how to personalize thyroid cancer management, including psychosocial aspects. Lastly, the third study explores how to improve thyroid cancer survivorship and the importance of shared decision making between patient and clinician.

Radiation and Thyroid Cancer

In “Radiation-Related Thyroid Cancer,” from the July 2023 issue of *Endocrine Reviews*, study authors Vladimir Saenko, PhD, and Norisato Mitsutake, MD, PhD, both from the Department of Radiation Medical Sciences at the Atomic Bomb Disease Institute



Norisato Mitsutake, MD, PhD

“**Medical exposures to radiation should be performed carefully, especially for children.**

Much of the evidence discussed in [our] article suggests that radiation-induced cancer does not require special treatment options, including both clinically advanced and low-risk tumors.”

— NORISATO MITSUTAKE, MD, PHD,
DEPARTMENT OF RADIATION MEDICAL SCIENCES,
ATOMIC BOMB DISEASE INSTITUTE,
UNIVERSITY OF NAGASAKI, JAPAN

of the University of Nagasaki in Japan, provide a comprehensive accounting of thyroid cancer epidemiology, treatment, and prognosis; clinicopathological characteristics; and genetic alterations from the Chornobyl and Fukushima nuclear power plant accidents.

A new examination of the data from the Fukushima and Chornobyl nuclear disasters appears to show that radiation-induced thyroid cancers are often more aggressive than sporadic thyroid cancers.

“It makes sense to study radiation carcinogenesis in Nagasaki, a city experienced in atomic bombing,” explains Mitsutake. “On a personal note, I have several relatives who are A-bomb survivors, so concerns about Fukushima nuclear power plant accident consequences need to be addressed carefully and scientifically. In addition, there has been growing concern in recent years about potential attacks on nuclear facilities and the potential use of nuclear weapons.” These reasons as well as recognizing that the peaceful use of radiation must be promoted, such as by the increasing usage of radioisotopes in the medical field, which exposes patients and medical staff, are what prompted the authors’ analysis, in view of determining how to reduce thyroid cancer risk from radiation exposure.

Notably, the Fukushima nuclear accident did not cause thyroid cancer, unlike that of Chornobyl, because the radiation doses to the thyroid appear to be extremely low compared to Chornobyl,” Mitsutake says. Risk is dose-dependent and persists for decades after exposure. “The restrictions on distribution and consumption by the Japanese government were effective. In addition, residents of the most contaminated territories were rapidly evacuated or relocated. Again, this decreased their radiation doses.”

They also found that the risk of developing thyroid cancer is not equal, with children being more susceptible than adults: “For radiation-related thyroid cancer, the radiation dose to the thyroid and younger age at exposure have been identified as etiology-specific risk factors,” Saenko says. In other words, age at exposure, attained age, and time since exposure were risk modifiers (but gender was not, despite the presumption that thyroid cancer is more common in females, which has recently been suggested to be an oversimplification — thyroid cancer is instead more commonly detected in females, while incidence rates at autopsy were comparable between females and males). “In the Chornobyl thyroid cancer,” he continues, “only stable iodine supplementation was a risk modifier (risk was higher if there was no supplementation) but not sex, age at exposure, other thyroid diseases, or body mass index. Iodine sufficiency is also a protective factor that reduces the risk for thyroid cancer from internal irradiation with radioiodine isotopes.”

Regarding the higher radiosensitivity in children, Saenko says that because children have a longer “time to death,” there is more time to observe a long-term consequence from



a childhood exposure. “Ionizing radiation is largely believed to act as an initiator of carcinogenesis (delivers the first hit in multistage carcinogenesis). Since there are more cell divisions, including those of tissue-specific stem cells, in a growing organism than in an adult, and if such a hit took place during childhood, there is a higher chance that the number of cells carrying a radiation-induced hit (say, a cancer-related mutation or an epigenetic change) will become greater.”

Mitsutake has this advice for clinicians: “Medical exposures to radiation should be performed carefully, especially for children. Much of the evidence discussed in [our] article suggests that radiation-induced cancer does not require special treatment options, including both clinically advanced and low-risk tumors.” Medically responsible exposures can be achieved with the “As Low As Reasonably Achievable” (ALARA) principle, which balances the risks and benefits of exposure as well as considers patient economic and social factors.

The authors call for continued careful research into this area.

False Positives in Metastatic Thyroid Cancer

In “False-positive Imaging for Papillary Thyroid Cancer Caused by Intraosseous Hemangiomas,” published in *JCEM Case Reports* last September, researchers including Stephanie L. Lee, MD, PhD, of the Chobanian & Avedisian School of Medicine, Boston University, Boston, Mass., describe two patients with papillary thyroid carcinoma and elevated thyroglobulin (TG) levels, who had false-positive imaging studies from intraosseous hemangiomas (IH). Despite their similarities, these cases also had significant differences.

“In case one, the patient had aggressive disease, and his TG level was rising into the hundreds,” Lee says, “so we knew he had distant metastatic disease. A CT scan of a symptomatic palpable skull mass revealed a lytic skull lesion. Generally, in the thyroid cancer realm, lytic bone indicates metastatic thyroid cancer.” Due to this patient’s high risk and the risk of bleeding and infection with biopsying an IH, especially one located in the skull, the mass was resected and found to be an IH rather than a metastatic focus of cancer.

In the second case, the patient’s tumor was rated stage I, and her TG level was not rising, so, as Lee explains it, it did not make sense that this low-risk patient would have distant metastatic disease, despite her positive radioactive iodine whole-body scan showing a focal uptake into a lytic lesion in the skull. The clues that helped them make an accurate diagnosis were the patient’s history of headaches and a prior MRI

AT A GLANCE

- ▶ A new examination of the data from the Fukushima and Chernobyl nuclear disasters appears to show that radiation-induced thyroid cancers are often more aggressive than sporadic thyroid cancers.
- ▶ Intraosseous hemangioma (IH) can mimic thyroid cancer metastases in lytic bone lesions and should be part of the differential diagnosis in patients, but, because no imaging studies are definitive for IH, cranial lesions may warrant resection to establish a diagnosis and avoid potential brain invasion by a malignancy or unnecessary radioiodine treatment if iodine avid.
- ▶ For thyroid cancer survivors, downstream management should be tailored to the patient, including when and how to de-escalate, as well as supporting their psychosocial concerns.



Stephanie L. Lee, MD, PhD

“**We don’t usually think of [intraosseous hemangiomas] as a cause for false positives — it’s actually only been reported a couple of times in the distant past, and so it’s not on the differential. We rely on radioactive iodine whole-body scans to detect metastatic disease.** We all know that there are false negatives, especially in tumors that are not iodine avid or more aggressive, but we also need to be aware of the false positives.”

— STEPHANIE L. LEE, MD, PHD,
CHOBANIAN & AVEDISIAN SCHOOL OF MEDICINE,
BOSTON UNIVERSITY, BOSTON, MASS.

that diagnosed the hemangioma before she had thyroid cancer. That history coupled with the fact that her lytic lesion stayed the same size in the ensuing two years led the team to take an inductive approach: “How do we prove this is not cancer so that we don’t have to do any more diagnostic testing?”

A would-be red herring in this case was that this patient had an ectopic thyroid, which caused her initially higher-than-expected TG levels. After thyroidectomy, however, her TG levels did drop to zero, which is what led to the whole-body scan. “This is where we went down the rabbit hole — but the whole-body scan showed remnant TG levels just in the thyroid bed and in the lesion in the skull,” Lee says.

“We don’t usually think of IH as a cause for false positives — it’s actually only been reported a couple of times in the distant past, and so it’s not on the differential,” Lee says. “We rely on radioactive iodine whole-body scans to detect metastatic disease. We all know that there are false negatives, especially in tumors that are not iodine avid or more aggressive, but we also need to be aware of the false positives.” False-positive radioactive iodine whole-body scans can occur anywhere a protective body of fluid exists, such as from cysts in the skin or ovaries or from a gallbladder with loculated fluid — anywhere the radioactive iodine can diffuse in without a specific transporter, becomes restricted there, and cannot diffuse back out.

This is where IH becomes relevant. The tangle of blood vessels slows blood flow, making the conditions right for a false positive. “What is unique about IH is that it also can be associated with false-positive F18-FDG positron emission tomography (PET) imaging. When you see something that’s iodine avid and PET-positive, you might think that’s definitely a thyroid cancer. What looks like it’s iodine avid or hypermetabolic is really isotope ‘trapping’ rather than specific uptake,” Lee explains. “So, the key takeaway is that some false positives in whole-body scans are due to restricted diffusion, and you should assess the positive scan in the context of the patient’s specific initial and current risk for thyroid cancer recurrence.”

That’s why the team felt this case report is important: The false positive occurred in both high-risk and low-risk patients and, coincidentally, within two years of each other. “You have to think about the context of these false positives and what the chances are that it really is disease and not a falsely positive result. Then you can step back and look at the differential of a false positive in the skull, and IH should come up,” Lee says.

Thyroid Cancer Survivorship

Megan R. Haymart, MD, Nancy Wigginton Endocrinology Research Professor in Thyroid Cancer, and professor of medicine at the University of Michigan in Ann Arbor, presented “Long-Term Management of Patients with Low-Risk Thyroid Cancer” at ENDO 2023 last June. Her presentation included a series of patient scenarios with rationales gleaned from the literature, including from systematic reviews. As the title suggests, Haymart’s aim is to characterize optimal, tailored, long-term surveillance, including when to de-escalate surveillance, and how to improve the quality of thyroid cancer survivorship.

“We are now in an era of more personalized and tailored management of thyroid cancer,” Haymart says. “However, there are both advantages and disadvantages to less-intensive treatment. For example, although surgical risks are greater with more intensive treatment, the long-term follow-up is more difficult in patients who received less-intensive surgical or medical management (e.g., less use of radioactive iodine).” Determining the balance between benefits and risks in the intensity of thyroid cancer treatment and then subsequent surveillance, she says, requires both clinician and patient input: “For much of the management of low-risk thyroid cancer, there is a role for shared decision making between the patient and the clinician with patient preferences incorporated into the decision-making process.” Long-term surveillance can involve laboratory work-up such as thyroid-stimulating hormone, thyroglobulin, and thyroglobulin antibody as well as neck ultrasound.

However, although neck ultrasound is an excellent method of follow-up for patients with thyroid cancer, as it allows detection of structural recurrence, there is a risk of false positives. In addition, during the surveillance period, patients can experience cancer-related worry about death, harm from treatment, reduced quality of life, family impact, and recurrence. Sometimes these worries can be exacerbated by surveillance, especially when there are false positives. “Key to shared decision making,” explains Haymart, “is communication about risks and benefits as well as awareness of patient preferences. For many of the decisions in the management of low-risk thyroid cancer, there are no ‘right-’ or ‘wrong-’ decisions. There is just the decision that is best for that particular patient.”

Although many physicians try their best to address patient worry in the clinic visit, resources are available outside of the physician-patient relationship that can help, such as local social workers or psychology or support groups as well as online resources. “There is more work to be done in helping our patients manage their cancer-related worry,” Haymart says. “I think this is an area that needs further resources and research.” ^{EN}



Megan R. Haymart, MD

“**We are now in an era of more personalized and tailored management of thyroid cancer. However, there are both advantages and disadvantages to less-intensive treatment. For example, although surgical risks are greater with more intensive treatment, the long-term follow-up is more difficult in patients who received less-intensive surgical or medical management (e.g., less use of radioactive iodine).”**

— MEGAN R. HAYMART, MD,
NANCY WIGGINTON ENDOCRINOLOGY RESEARCH
PROFESSOR IN THYROID CANCER;
PROFESSOR OF MEDICINE,
UNIVERSITY OF MICHIGAN, ANN ARBOR, MICH.

— HORVATH IS A BALTIMORE, MD.-BASED FREELANCE WRITER. SHE WROTE AND RESEARCHED THE MASSIVE “EUREKA 2023” IN THE DECEMBER ISSUE THAT HIGHLIGHTED THE TOP ENDOCRINE DISCOVERIES OF THE YEAR.

Getting Back to



NORMAL:

Options for Treating Hypoparathyroidism

Endocrine News talks to Aliya Khan, MD, about the debilitating effects of hypoparathyroidism, new treatment guidelines she helped create, and exciting news from trials that showed promising results that could allow these patients to have a much-improved quality of life, both physically and psychologically.

BY DEREK BAGLEY

Due to his idiopathic hypoparathyroidism, a patient of Khan's couldn't even go swimming or have a driver's license since he was prone to seizures due to having abnormal calcium levels. However, that has all changed since the young man has been a part of the phase 3 PaTHway Trial of palopegteriparatide, an investigational prodrug with sustained release of active parathyroid hormone (PTH [1-34]) administered once daily.

“I wish I had this medicine when I was a kid,” a young patient with hypoparathyroidism tells his endocrinologist, Aliya Khan, MD, FRCP, FACP, professor of clinical medicine at McMaster University in Ontario, Canada, as he participates in a clinical trial investigating a prodrug that replaces parathyroid hormone (PTH). Because of his condition and subsequent treatment, this young man experienced calcium fluctuations so severe that he experienced frequent seizures due to low serum calcium. Because of the seizures, he had difficulty concentrating and was unable to finish school. He couldn't drive; he couldn't even go swimming. He also had recurrent kidney stones and was often hospitalized.

“If you can't drive, you can't get to work or you're dependent on someone else,” Khan says. “If you're having seizures and you don't know when you could have a seizure, that affects your ability to swim or do sports activities that other people take for granted because they know they're not going to have a seizure. He could have a seizure if he was swimming. What if he had a seizure and he died in the pool?”

The young man is participating in the ongoing Phase 3 PaTHway Trial of palopegteriparatide, an investigational prodrug with sustained release of active parathyroid hormone PTH (1-34) administered once daily. Ascendis Pharma is funding the trial of TransCon PTH and marketing the drug as Yorvipath®.

Khan presented 52-week data from the open-label extension period of the trial at the American Society for Bone and Mineral Research (ASBMR)'s 2023 in Vancouver last October, showing that adults with chronic hypoparathyroidism, whose bones tend to be over-mineralized due to insufficient parathyroid hormone-(PTH)-exposure, trended toward a new skeletal steady state closer to age-appropriate norms with continued use of TransCon PTH. The results were consistent regardless of sex, menopausal status, or duration of disease and were consistent with results previously reported through Week 110 in the Phase 2 PaTH Forward Trial.

“When we put him into this study, it was like a new person walked in,” Khan says. “He said, ‘I haven't had to go to the hospital. I haven't had any more seizures. And guess what? I haven't had any more kidney stones.’”

Khan says that the young man has idiopathic hypoparathyroidism, and he has had symptoms since he was a child – basically being unable to function because his calcium levels weren't normal. “Now he's saying, ‘I feel that I missed out on my education, but now that my calcium levels are stable and they're normal, and I don't need to worry



Aliya Khan, MD



Until very recently, many hypoparathyroidism patients were treated with calcium (bottom) and vitamin D (top). However, since that treatment can elevate phosphate levels, it increases the risk of myriad long-term debilitating complications.

about having a seizure, and he's getting his driver's license and he's in university," she says. "It's a life-changing event to be able to restore normal, or as close to normal as possible, parathyroid function that we are able to provide at this time with modern medicine."

Myriad Impacts

Until very recently, patients with hypoparathyroidism were treated with active vitamin D and calcium, but that treatment can increase the risk of long-term complications because it can further elevate phosphate, which can cause calcium and phosphate to deposit in the brain, behind the eyes, and in the kidneys, which can cause nephrocalcinosis, with the whole renal parenchymal calcifying.

Khan says that 95% of participants in this current clinical trial were able to come off of vitamin D, while stabilizing calcium and bone density with palopegteriparatide. "This is really reassuring data, and it's nice to be able to replace PTH, be able to normalize calcium levels, be able to correct the urine calcium, correct the phosphate levels, and improve quality of life," she says. "We've seen significant data showing improvements in quality of life and bring bone remodeling and the bone density values similar to the age-matched and gender-matched norms."

Reflecting on the clinical 52-week data on palopegteriparatide and its potential impact, Khan says, "Treatment with TransCon PTH in this clinical trial showed the positive physiological effects on bone in patients treated for the full year as well as in those switching from placebo after the 26-week blinded period. These results underscore the importance of providing the missing hormone to address the significant impacts of hypoparathyroidism, including decreased bone remodeling leading to a dense, over-mineralized bone structure."

And again, the impacts of hypoparathyroidism — and its treatment — are significant for the patients and their families. Khan says it's important to look at the complications of hypoparathyroidism, because it affects so many systems — vision, kidneys, lungs, heart, even mental health. "All of these need to be evaluated," she says, "Physicians need to look at that, and we need to also ask, 'How is it affecting you? And not just you personally, but your job, your school, your education, your family? What if you've got kids? How are you able to handle your kids?'"

“ I think that we've been able to make an impact on the diagnosis and awareness [of hypoparathyroidism]. Endocrinologists are aware and obviously know how to make the diagnosis, **but primary care physicians may not have considered the possibility that someone's calcium could be low, especially in young people who haven't had any medical problems so far.**”

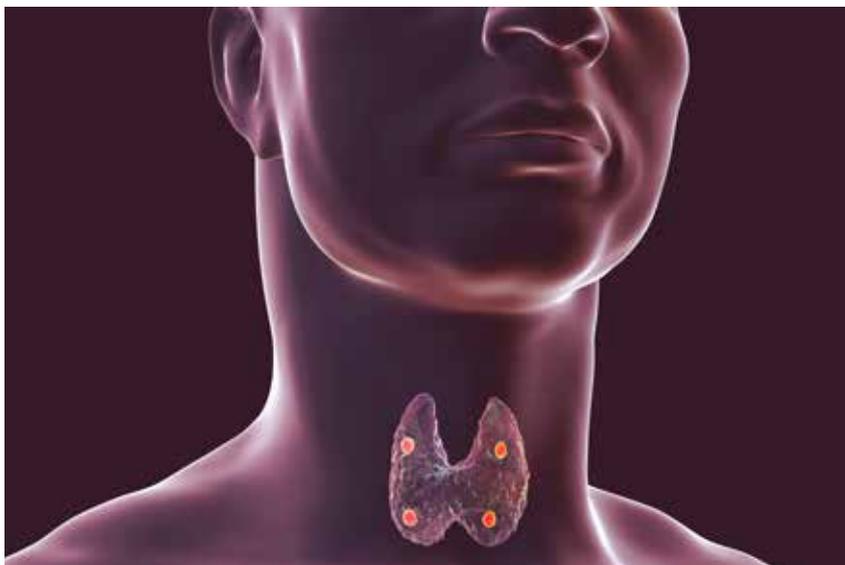
— ALIYA KHAN, MD, FRCP, FACP, PROFESSOR OF CLINICAL MEDICINE, MCMMASTER UNIVERSITY, ONTARIO, CANADA

Khan says she treats young mothers with hypoparathyroidism who have just had a baby, and newborns aren't exactly known for sleeping through the night. "It's very difficult," she says "We need to recognize the impact on the person and their family and their whole situation. Look for the multi-system complications, including skeletal complications, renal complications, and neurologic complications, and ensure that we're addressing all of those."

Khan is happy to report that palopegteriparatide has improved patients' mental health as well. "And their social function," she says. "It's definitely making an impact on clarity of thinking, their ability to concentrate, their mood, their functioning. We know that it's not just calcium that's important for brain function. We also know there are PTH receptors in the brain, so if we give back PTH, we're giving back the missing hormone that's affecting brain function and cognition, and those are all critical aspects that need to be addressed."

“Valuable Treatment Options Available”

Khan presented 26-week data from the Phase 3 PaTH Trial at **ENDO 2022**, as well as Clinical Endocrinology Update (CEU) that same year, with a talk titled “Diagnosis and Management of Hyperparathyroidism & Hypoparathyroidism,” in which she



Although relatively rare, hypoparathyroidism occurs when the body produces abnormally low levels of parathyroid hormone (PTH), which regulates the levels of calcium and phosphorus in the body. Khan says it's important to look at the complications of hypoparathyroidism, because it affects so many systems – vision, kidneys, lungs, heart, and mental health.



AT A GLANCE

- ▶ Hypoparathyroidism can be a debilitating disorder, and treatment can increase the risk of long-term complications and is difficult to follow due to the very large number of calcium and active vitamin D pills needed every day.
- ▶ Clinicians are investigating a prodrug that replaces parathyroid hormone in patients with hypoparathyroidism, and the results so far have been promising.
- ▶ Clinicians should be up to date on the latest guidelines, published in late 2022. Conventional treatment remains the first-line therapy, but PTH should be considered if conventional therapy fails.

“

We know that it's not just calcium that's important for brain function. We also know there are PTH receptors in the brain, **so if we give back PTH, we're giving back the missing hormone that's affecting brain function and cognition, and those are all critical aspects that need to be addressed.**”

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

pointed to new drug agents like palopegteriparatide as a welcome alternative to conventional therapy, since, again, that treatment can only compound the problem. “We want to improve patients’ well-being from day to day, and we can normalize calcium with calcium and active vitamin D, but we’re not helping the long-term complications with conventional therapy,” she told *Endocrine News* ahead of her CEU presentation. “And if we’re making that likelihood of chronic kidney disease earlier and more severe, then we’re not really helping our patients.”

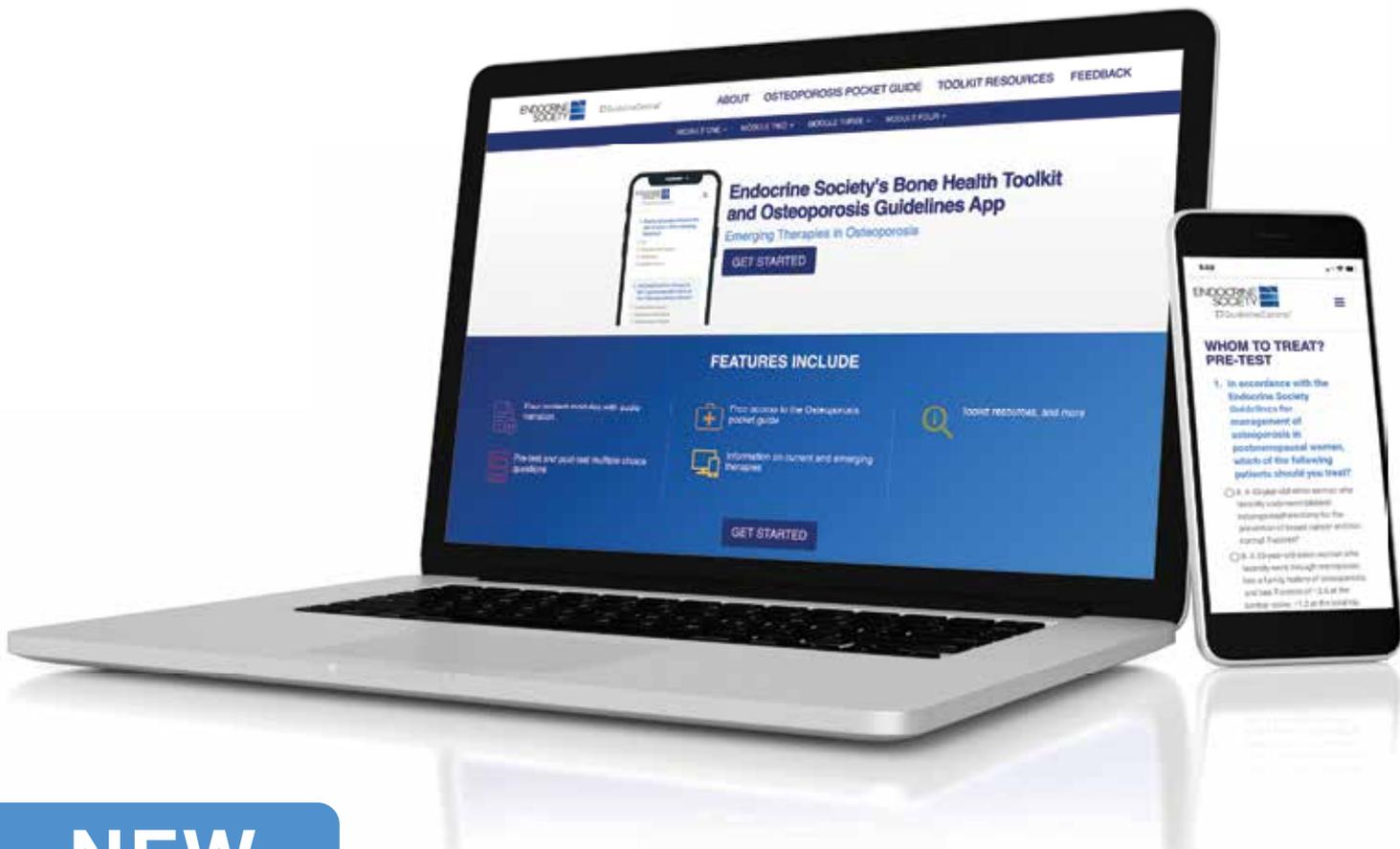
Khan says that since her presentations in 2022 and 2023, she sees improved awareness among providers, where there might have been some knowledge gaps before. Hypoparathyroidism can be easy to dismiss as anxiety for a physician who might not be up to date with the new recommendations and guidelines. “I think that we’ve been able to make an impact on the diagnosis and awareness,” she says. “Endocrinologists are aware and obviously know how to make the diagnosis, but primary care physicians may not have considered the possibility that someone’s calcium could be low, especially in young people who haven’t had any medical problems so far.”

Khan and her co-authors published the updated guidelines for the evaluation and management of hypoparathyroidism in November and December 2022 — 17 articles across two volumes in ASBMR’s *Journal of Bone and Mineral Research*. “We went crazy,” she laughs.

The three key highlights from the guidelines are: diagnose the condition as early as possible, understand what the cause is (idiopathic or postsurgical), and treat according to the guidelines. “You can start with conventional therapy and monitor patients closely,” she says. “And if you’re making changes in their management, make small changes with close follow-up. Don’t make big changes and then not see them for three months. They’ll end up in the ER. Small changes with closer follow-up.”

“And if they’re not doing well,” Khan continues, “if their calcium levels are fluctuating, their cognition is poor, and they’re having complications or kidney stones or decline in renal function, switch to PTH, and don’t neglect the fact that we do have valuable treatment options available.” 

— BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. IN THE NOVEMBER ISSUE, HE WROTE ABOUT POTENTIAL PHARMACOLOGICAL OPTIONS FOR PREVENTING DIABETES.



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standardized *testing*

BY DEREK BAGLEY

Priyanka Majety, MD, assistant professor in the Division of Endocrinology, Diabetes, and Metabolism at Virginia Commonwealth University in Richmond, vividly remembers seeing a patient with a family history of thyroid cancer, who presented with a sub-centimeter thyroid nodule, in her training.

When the team input the patient's history and ultrasound findings into different risk-stratifying tools, the recommendations about next steps varied, based on the tool used. Some tools recommended no biopsy; others recommended considering a biopsy or monitoring the nodule with a repeat ultrasound after a certain interval.

"After a detailed discussion with the patient, and given her family history of lethal thyroid cancer, at her request, we biopsied the nodule, which turned out to be malignant," Majety says. "She underwent surgery and is doing well, but this case highlights the discrepancy between recommendations, based on the inclusion or exclusion of clinical features and variability in ultrasound size cut-offs informing guidance regarding biopsy."

About half the population will develop a thyroid nodule by age 60; up to 90% of these are benign. Most thyroid cancers are low-risk neoplasms that usually do not have an impact on survival. Diagnosing and treating these include not only a physical examination but also an ultrasound of the nodule(s), followed by a biopsy, which can have a detrimental effect on



With thyroid cancer patients often getting different — and sometimes conflicting — treatment recommendations from a variety of diagnostic tools, Priyanka Majety, MD, talks to *Endocrine News* about why it’s time for clinicians to coalesce around a single set of standards for these cases, which could potentially eliminate unnecessary procedures.



Evaluating patients with suspected thyroid nodules must include a thorough medical history and physical examination, a thyroid-stimulating hormone (TSH) level, and ultrasound, as shown here, which determines nodule size, allowing providers to estimate the risk of these nodules being malignant.



“ There is a strong need for a universal RSS with a lexicon to harmonize all the current systems and standardize the evaluation of thyroid nodules with the aim of reducing unnecessary thyroid biopsies without jeopardizing the detection of clinically significant malignancies. **Until this ideal tool is developed, clinicians should continue to use the tools available and individualize the management based on individual risk factors.**”

— PRIYANKA MAJETY, MD, ASSISTANT PROFESSOR,
DIVISION OF ENDOCRINOLOGY, DIABETES, AND METABOLISM,
VIRGINIA COMMONWEALTH UNIVERSITY, RICHMOND, VA.

the patient’s emotional and financial status. Majety says that in the U.S., more than 500,000 fine-needle aspirations (FNAs) are done each year, and about 200,000 of them turn out to be unnecessary.

A Need for Uniformity

According to Majety, evaluation of patients with suspected thyroid nodules must include a thorough medical history and physical examination, a thyroid-stimulating hormone (TSH) level, and ultrasound evaluation. Based on the size of the nodules and other characteristics on ultrasound, providers estimate the risk of these nodules being malignant.

To stratify the risk of malignancy, various tools are available, but there are considerable differences among these tools — they differ in their formats (pattern recognition versus point systems), risk categories, FNA size thresholds, and recommended surveillance intervals. Multiple studies have compared various risk stratification tools, and no single system has consistently demonstrated superiority over the others.

“It is important to identify the nodules at the highest risk of malignancy,” Majety says. “Currently, there are several risk stratification tools including clinical practice guidelines, scoring systems, web-based calculators, and an interactive algorithm, available to clinicians. This poses a unique challenge to not just the clinicians but also the patients, due to the lack of uniformity in the recommendations.”

In June 2023, Majety’s paper, “Thyroid Nodules: Need for a Universal Risk Stratification System” appeared in a special issue of *Frontiers in Endocrinology*, “Thyroid Nodule Evaluation: Current, Evolving and Emerging Tools.” The issue highlighted the challenges faced by clinicians in this field, and how those challenges are currently being addressed.

Majety writes that using multiple risk-stratifying systems (RSSs) can lead to confusion at times. The varied RSSs can affect clinicians in training, as well, since their attendings may have different approaches. She explains that radiologists and endocrinologists typically use different guidelines for risk stratification, which can lead to unnecessary time consumption, as physicians have to re-review those nodules and stratify risk using a different tool.

“Endocrinology fellows in training tend to work with several teaching attendings, and many of them have a different approach to thyroid nodule evaluation, the biggest difference being the RSS in use,” Majety says. “Some of the senior physicians tend not to use any system but go with their intuition, while other physicians use different systems, reflective of the differences in their training and experience. It can sometimes be an overwhelming and confusing experience.”

Reducing Unnecessary Biopsies

Currently, there are several RSSs across the globe, varying by country and professional organization, and clinicians choose which tool to use based on geography and specialization. There are other RSSs that are developed by groups of investigators who do not represent any professional organization. “It is a huge undertaking to bring all the professional societies together and develop a universal RSS that they all agree upon,” Majety says. “Even if one such universal tool is developed, it would still need to be validated in large, multi-regional population studies before clinicians can use it.”

Another major challenge, Majety says, of ultrasound-based RSSs is the inter- and intra-observer variability. There are still inconsistencies in thyroid ultrasound examiners’ reporting and rating abilities. “One potential solution to all these challenges is a unified lexicon of thyroid ultrasound features and dedicated training,” she says.

For Majety, her ideal RSS would minimize the number of unnecessary biopsies and identify all clinically significant thyroid cancers, leading to lower healthcare costs and morbidity. “The goal is to develop a universal risk stratification system that identifies all clinically significant thyroid cancers and that would help not only clinicians but also patients in understanding ultrasound reports and making appropriate recommendations in identifying the nodules that require further evaluation including a biopsy,” she says.

Majety points to a grassroots initiative, managed by the steering committee of the International Thyroid Nodule Ultrasound Working Group (ITNUWG), is currently working to develop an international system, termed I-TIRADS, that integrates the leading risk-stratifying systems.

“There is a strong need for a universal RSS with a lexicon to harmonize all the current systems and standardize the evaluation of thyroid nodules with the aim of reducing unnecessary thyroid biopsies without jeopardizing the detection of clinically significant malignancies,” Majety continues. “Until this ideal tool is developed, clinicians should continue to use the tools available and individualize the management based on individual risk factors.” 

Molecular Testing *and the Future of Diagnosing Thyroid Cancer*

BY KELLY HORVATH

Endocrine Society member and medical director for Endocrinology for Veracyte, Joshua Klopper, MD, talks to *Endocrine News* about a new tool that may have the potential to guide thyroid cancer management decisions by predicting tumor behavior via molecular signatures.

In “New Data Presented at the 2023 ATA Annual Meeting Demonstrate that Veracyte’s Afirma-Based Testing Can Uncover Key Molecular Hallmarks of Thyroid Cancer,” published online in *Business Wire* last September, Joshua Klopper, MD, medical director for Endocrinology for Veracyte, a genomic technology company specializing in cancer diagnostics, explains what novel molecular insights for thyroid nodules and cancer are enabled by preoperative analysis with the Afirma Genomic Resource for Intelligent Discovery (GRID), a research-use-only tool that is derived from the company’s Afirma Genomic Sequencing Classifier (GSC).

“The fundamental difference between the Afirma molecular testing platform and any other commercially available testing platform is the whole transcriptome–derived assay. As opposed to a panel of genes or a panel of microRNAs, almost everything that is expressed as mRNA is sequenced with Afirma GSC,” Klopper says. “We strongly believe

that assessing mRNA and what is transcribed is the best indicator of what’s going on because a mutation that may be seen in DNA can sometimes be silenced. We’re sequencing everything that’s expressed out of those genes, so we’re sitting on a huge treasure trove of molecular data, not only with each nodule but with our entire database. We believe this resource can enable new discoveries to help advance care for patients with thyroid nodules and cancer.”

Veracyte’s data and analytics team can then cultivate novel signatures and report the different genes that are expressed by carving them out of the database. “So, GRID — it’s in the name — it’s a resource. Our expectation is that it will expand over time,” Klopper says.

Potential Treatment Stratification

Afirma GRID is modeled on the company’s Decipher GRID tool that has been used in prostate cancer research





Joshua Klopfer, MD

“ We strongly believe that assessing mRNA and what is transcribed is the best indicator of what’s going on because a mutation that may be seen in DNA can sometimes be silenced. **We’re sequencing everything that’s expressed out of those genes, so we’re sitting on a huge treasure trove of molecular data, not only with each nodule but with our entire database.**”

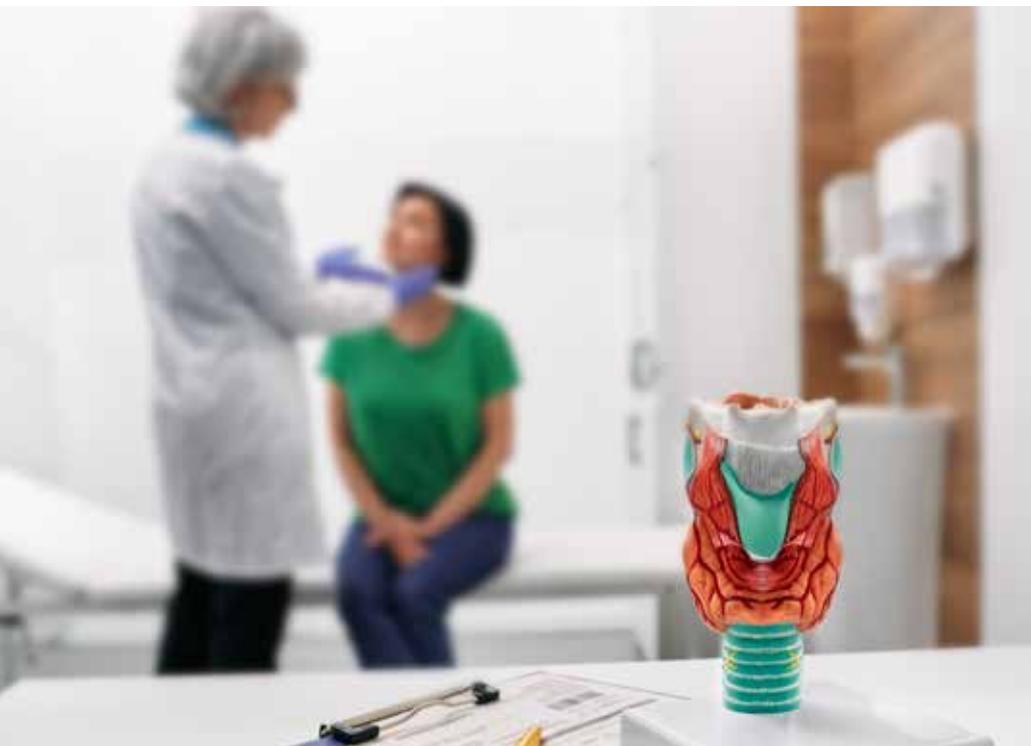
— JOSHUA KLOPPER, MD, MEDICAL DIRECTOR FOR ENDOCRINOLOGY, VERACYTE, DENVER, COLORADO

since 2015 and includes more than 400 gene signatures. Klopfer says they hope to do for thyroid cancer research with Afirma GRID what Decipher GRID is doing for prostate cancer research. “We’re not quite there yet, but the posters we presented at the American Thyroid Association demonstrated different potential aspects of what can be provided by doing this whole transcriptome–derived analysis,” he adds.

For example, with the “Sodium Iodide Symporter (NIS) Expression in Cytologically Indeterminate and Malignant Thyroid Nodules” poster, Prasana Santhanam, MBBS, MD, from the Johns Hopkins University School of Medicine and team analyzed over 47,000 thyroid nodules and demonstrate that NIS gene expression is differentially expressed based on

the presence of molecular variants, such as high expression in thyroid nodules with a TSH receptor variant and lower expression in nodules with a *BRAF V600E* mutation. Additionally, they show that NIS expression declines as thyroid tumors become increasingly more oncocytic and neoplastic.

Because NIS activity is required for radioactive iodine uptake, these findings can potentially aid in the treatment and monitoring of differentiated thyroid carcinomas when radioiodine therapy is indicated. “We can report the NIS expression level and seek differences among the different kinds of nodules and different mutations,” Klopfer says, which may ultimately lead to potential treatment stratification.



Promising New Approach?

The “Leveraging RNA Sequencing for Pre-Operative Immunophenotyping of BRAFV600E+ Thyroid Nodules” poster from Jarod Olay, MS, from the UCLA David Geffen School of Medicine and team likewise offers a promising new approach to preoperative assessment of thyroid tumors.

The team performed a retrospective analysis of nearly 48,000 thyroid nodules. “We know that the immune system can promote or inhibit cancer responsiveness,” Klopfer says. The findings suggest that the Afirma GRID immunophenotype

gene expression may one day help predict thyroid cancer response to immune checkpoint inhibitor therapy using preoperative immunophenotyping rather than postoperative immunohistochemistry.

In the “Molecular Assessment of Isthmus Thyroid Carcinomas” poster, Endocrine Society member Sina Jasim, MD, from Washington University in St. Louis, Mo., and team started from the well-described data that cancers of the thyroid isthmus tend to have a higher risk of malignancy and more aggressive behavior than do lobar cancers and teased out some of the different molecular signatures occurring there.

These signatures, such as follicular to mesenchymal transition, provide mechanistic evidence of diagnostic and prognostic differences between isthmic and lobar tumors. Ultimately, using this molecular data may influence how isthmic thyroid cancer is managed. “The unique aspect

of this platform allows us to find and/or create novel signatures,” Klopper explains.

Contrary Tumor Behavior

In summary, Klopper says, “Analyzing whole transcriptome-derived RNA sequencing provides a wealth of information. For the Afirma GSC test, we use this data to create benign and suspicious classifiers as our primary output, and they’re ‘trained to the truth’ — whether cancer is present or not.”

As we look toward the future when molecular testing can provide prognostic information, it must be recognized that even with the same mutation, thyroid cancers can behave very differently, so having additional molecular data may help clinicians provide more personalized care. Afirma GRID is a research-use-only tool that can allow for studies that analyze prognostic information beyond the presence of molecular variants and fusions. 

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Endocrine Society 2023 Advocacy Accomplishments

The Endocrine Society is advocating for you. In 2023 we achieved several important advocacy accomplishments, including:

- ▶ Making insulin more affordable;
- ▶ Advancing legislation to allow Medicare to cover anti-obesity medication;
- ▶ Increasing Medicare physician payments for endocrinology;
- ▶ Expanding telehealth coverage;
- ▶ Protecting access to gender-affirming care;
- ▶ Protecting the National Institutes of Health from budget cuts;
- ▶ Influencing the development of a global plastics treaty

All these accomplishments were achieved because our members participated in our advocacy activities, online campaigns, Hill Days, and meetings with policymakers. Below are some examples of our advocacy victories.

Advocacy to Lower the Cost of Insulin —

The Endocrine Society is one of the leading voices calling for U.S. legislation to lower the cost and price of insulin. Our work has influenced the Biden Administration to prioritize this issue and Congress to develop legislative proposals.

- ▶ **Medicare Insulin Price Cap:** Historic legislation was signed into law capping the out-of-pocket cost of insulin at

\$35 per month for people with Medicare. The legislation was a long-term goal of the Society and is a monumental moment in the history of diabetes advocacy.

- ▶ **Congressional Meetings & Briefings:** The Endocrine Society has conducted hundreds of congressional meetings to urge passage of bipartisan legislation and conducted several educational briefings for policymakers about insulin affordability.

- ▶ **White House Action:** The Endocrine Society met with the Biden Administration to make insulin affordability a priority. As a result, a proposal to expand an insulin copay cap to the private insurance market was included in the president's budget and in the State of the Union address.

Reducing the Prevalence of Obesity — The Endocrine Society is working to reduce the prevalence of obesity in the United States by educating Congress about obesity and identifying policy options that would address this issue.

- ▶ **Obesity Playbook:** Early in 2023, the Endocrine Society published an educational resource for members of Congress and their staff about obesity. The Playbook was designed to be a “go-to” resource for members of Congress and their staff when they answer constituent questions about obesity and consider legislation related to obesity. The Obesity Playbook contains data on obesity prevalence, the economic cost of obesity, obesity's impact on military readiness, policy options to address obesity, and a list of Society members





In April 2023, Endocrine Society Past-President, Carol Wysham, MD, and President Steve Hammes, MD, PhD, joined a group of Endocrine Society members to advocate for \$50.92 billion for the NIH and call attention to endocrinology's key role in diabetes research.

who are experts in the field. Endocrine Society members Drs. Amy Rothberg, Rocio Pereira, and Jami Josefson served as advisors for the Playbook.

- ▶ **Congressional Briefings:** The Endocrine Society conducted a Congressional briefing for members of Congress and their staff to educate them about prevalence of obesity, its financial costs to our healthcare system, and its impact on America's military readiness. Endocrine Society members Drs. Amy Rothberg and Ricardo Correa spoke at the briefing, highlighting new data from the CDC about increasing obesity prevalence and its impact on our military.
- ▶ **Treat and Reduce Obesity Act:** The Endocrine Society has been collaborating closely with the sponsors of the Treat and Reduce Obesity Act (TROA) on the bill's reintroduction. TROA is a bipartisan bill that would improve Medicare coverage of various treatments for obesity, including anti-obesity medications. Improving access to obesity treatments is a top priority for the Society.

Improving Medicare Physician Payment — The Endocrine Society advocates to increase physician payment to recognize the value endocrinologists bring to the healthcare system.

- ▶ **Averting Medicare Cuts:** Endocrine Society advocacy resulted in averting significant Medicare physician payment cuts in 2023 and 2024. We continue to call on Congress to improve the Medicare physician payment system.
- ▶ **Improving Coverage and Coding:** Endocrine Society advocacy includes representation at the American Medical Association's Relative Value Update Committee (RUC) and

Advisors to the Current Procedural Terminology (CPT) Committee. Chase Hendrickson, MD, MPH, Sandhya Chhabra, MD, Allan Glass, MD, and Ricardo Correa, MD, represent the Endocrine Society at the RUC and CPT.

- ▶ **Expanding Access to Telehealth:** Endocrine Society successfully advocated for a two-year extension of the telehealth waivers put in place during the COVID-19 Public Health Emergency, ensuring that our members can provide care to patients via telehealth.
- ▶ **Telehealth Policy Perspective Paper:** The Society published a telehealth policy perspective in JCEM that provides guidance to Endocrine Society members on the appropriate use of telehealth in endocrinology.

Protecting Access to Gender-Affirming Care

— The Endocrine Society advocates to expand, improve, and protect access to care for transgender and gender-diverse individuals. We do this by providing information to policymakers, courts, and the public about gender dysphoria/gender incongruence and evidence-based medical treatment options.

- ▶ **Friend of the Court:** The Endocrine Society has submitted "friend of the court" briefs (also known as amici briefs) in court challenges to state laws that ban gender-affirming care or criminalize the physicians who provide it. We work with respected medical, mental health, and healthcare organizations to submit an amicus brief to the Court with medical evidence supporting the standard of care for treating transgender and gender diverse individuals.
- ▶ **Strengthening AMA Policy:** The Endocrine Society led a historic effort to protect access to gender-affirming care at the annual meeting of the American Medical Association (AMA) House of Delegates. The Endocrine Society introduced a resolution that would call on the

AMA to oppose any criminal and legal penalties against patients seeking gender-affirming care, family members who support them in seeking medical care, and healthcare facilities and clinicians who provide gender-affirming care.

- ▶ **Voice of Science in Public Discourse:** The Endocrine Society represents the voice of science in discussions about transgender health and treatment for gender dysphoria/gender incongruence. The Endocrine Society was featured on an episode of *The Problem with Jon Stewart* that focused on access to gender-affirming care. Stewart interviewed Endocrine Society clinical practice guideline author Josh Safer, MD, to discuss the medical evidence supporting gender-affirming care for minors. This episode was widely praised for combatting the misinformation about gender-affirming care.



Advocacy to Increase Funding for the NIH

— Funding for the National Institutes of Health (NIH) is a top priority of the Endocrine Society. Our goal is to protect the NIH from funding cuts and to ensure that all NIH institutes receive significant funding increases as a proportionate share of a total increase. We also advocate for special attention to early career scientists and to reduce

administrative burdens on scientists. In addition, we raise the visibility of endocrine-related research and researchers.

- ▶ **Advocacy Campaigns:** We are asking members to urge their lawmakers to support increased NIH funding. Congress currently is considering funding for fiscal year (FY) 2024, which officially began October 1, 2023. The Society has been a vocal advocate for not only increasing NIH funding, but also averting a federal shutdown and protecting against proposals and amendments to cut funding.
- ▶ **Testimony:** The Endocrine Society provides annual testimony to the Appropriations Committee recommending funding levels for the NIH. In 2023, we highlighted the dangers posed

by proposed broad cuts to public health programs, including biomedical research.

- ▶ **Advanced Research Projects Agency for Health (ARPA-H):** The Endocrine Society was invited to present at two different listening sessions by the Biden administration and discuss how the new agency could benefit endocrine-related science. The Society also urged policymakers to ensure funding for ARPA-H would supplement, not supplant, funding for NIH.
- ▶ **Congressional Hill Days:** The Endocrine Society sponsors regular Capitol Hill Days, during which our members meet with congressional offices to discuss NIH funding. In 2023, our Past-President, Carol Wysham, and our President Steve Hammes, joined a group of Endocrine Society members to advocate for \$50.92 billion for the NIH and call attention to endocrinology's key role in diabetes research. We also lend our voice in the research community's annual Rally for Medical Research Hill Day, calling on Congress to increase funding for biomedical research.

Global Advocacy for Better EDC Regulation — The Endocrine Society is the voice of science in policy discussions around the globe concerning endocrine-disrupting chemicals (EDCs). As a result of our work, policymakers now recognize EDCs as a hazardous class of chemicals, support research that studies environmental exposures and their impact on human health and are developing legislation and regulations to better regulate EDCs.

- ▶ **Scientific Statements on EDCs:** The Endocrine Society was the first scientific organization to develop a statement on what the science tells us about EDCs and make policy recommendations. Endocrine Society member Andrea C. Gore, PhD, led this effort.





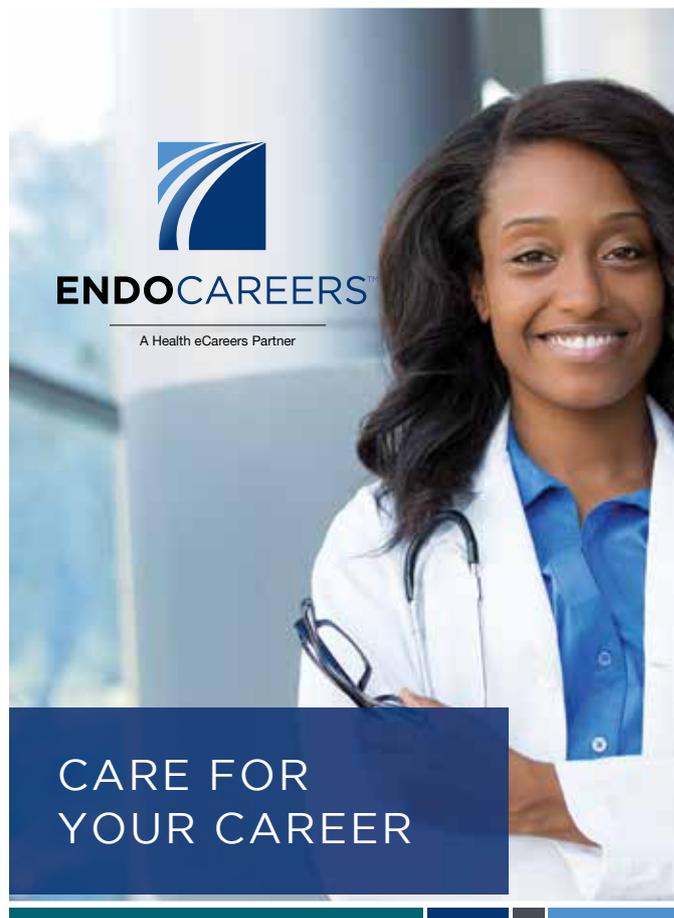
▶ **Estimates of the Costs of Health Effects from EDCs:** The Endocrine Society was the only scientific organization to publish the estimated cost of health effects from EDCs. This work grabbed the attention of policymakers in the EU and continues to drive action. Endocrine Society member Leonardo Trasande, MD, MPP, conducted the study.

▶ **Use of Science in Regulatory Decisions:** The Endocrine Society routinely submits the latest scientific evidence to regulatory agencies to ensure that regulations are based on up-to-date knowledge of the effects of chemicals on endocrine systems. In 2023, we influenced a decision made by the European Food Safety Agency to lower the exposure limits to bisphenol A in food.

▶ **Plastics Treaty Negotiations:** The Endocrine Society is a leading scientific voice in United Nations negotiations to develop an international treaty to end plastic pollution. Marina Fernandez, PhD, has spoken during plenary sessions and throughout the treaty process to ensure that health-focused objectives, including measures to reduce exposure to EDCs in plastic, are included in the treaty.

▶ **Advising the European Commission on Legislation to Implement the EU Ambition for a “Toxic-Free” Environment:** The Endocrine Society holds a position on the group advising the EU Commission. Endocrine Society member Anne-Simone Parent, MD, PhD represents the Society.

For up-to-date information on our advocacy work and to learn how you can participate, please visit endocrine.org/advocacy or contact us at advocacy@endocrine.org. 




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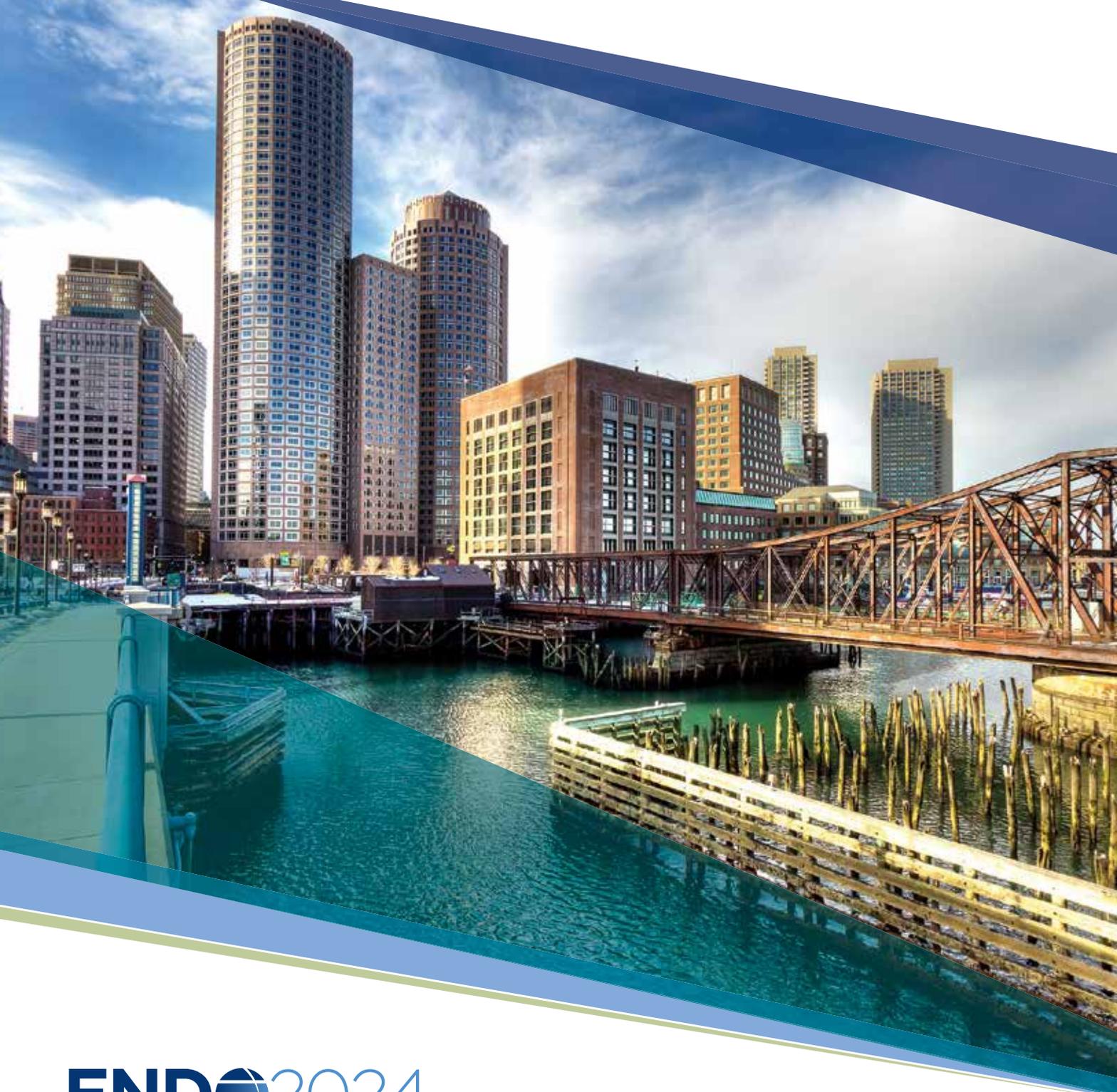
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