

MARCH 2022

THE LEADING MAGAZINE FOR • ENDOCRINOLOGISTS

Endocrine news

The Time *is Always* NOW

Eradicating Racism in Endocrinology

From diversifying clinical trial participants as well as the researchers observing them to ensuring an inclusive workforce and equal access to care and education, *Endocrine News* takes a closer look at the Endocrine Society's formal pledge to eliminate racism in endocrinology.

SHOCK TO THE SYSTEM:

Pediatric type 1 diabetes patients and trauma

TEST PATTERNS:

How thyroid nodule tests can eliminate needless procedures

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Hormone Science to Health

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With the publication of "Eradicating Racism in Endocrinology: An Endocrine Society Policy Perspective" in the January issue of *The Journal of Clinical Endocrinology & Metabolism*, the Endocrine Society formally calls for policies to address racial and ethnic inequities in the endocrine workforce and in access to care. **BY DEREK BAGLEY**

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Hormone Science to Health



Member EDC Expertise Makes an International Impact

A longstanding priority of the Endocrine Society is to advance science-based regulatory policies that minimize harms from endocrine-disrupting chemicals (EDCs), and I have been so proud seeing how our members' work in the European Union (EU) has enabled policy makers to make better decisions using scientific information. For several years now, our EU EDC Task Force has engaged with EU policy makers at all levels as they grappled first with establishing EDCs as an issue of concern, then worked to develop criteria to define EDCs in applicable laws, and then to include EDCs as part of an overarching "chemicals strategy for sustainability towards a toxic-free environment."

The chemicals strategy is part of a commitment by the Commission to better protect citizens and the environment from harmful chemical exposures and boost innovation toward safe and sustainable chemicals. Considering our influence and expertise, we have a seat on the policy decision-making platform known as the High-Level Roundtable on the Chemicals Strategy along with other leaders from EU Member States, industry, civil society, and international organizations and scientists, who will support the Commission in achieving the objectives of the strategy and monitor its implementation.

On November 25, the Roundtable adopted a joint report on compliance and enforcement of chemicals legislation, agreeing on a set of 10 recommendations that will guide further legislative and regulatory activities. We were pleased to contribute to a section in the report on "science and enforcement" that described opportunities to enhance the dialogue among scientists, consumers, and regulators. Importantly, endocrine disruption was an area where discipline-specific expertise was acknowledged as required for "appropriate and coherent legislation" that "corresponds and reacts to science and technology development."

This report was the first in what will become a series of reports adopted by the Commission on a variety of subjects relevant to the strategy, and we expect future meetings will also reflect the value of scientific expertise. The next Roundtable meeting in May 2022 will focus on research and innovation for the transition to safe and sustainable chemicals. Looking ahead, the Endocrine Society is urging the Commission to advance discussions about the intersection between the environment and public health at future meetings so that we and others can propose legislative and regulatory improvements that will have the greatest public and environmental health impact.

In parallel to the roundtable activities, the Commission has also launched initiatives aimed at improving regulatory processes, specifically the REACH (registration, evaluation, authorization, and restriction of chemicals) and CLP (classification, labeling, and packaging) regulations. This is a strong signal that authorities intend to move quickly on legislative solutions to regulatory gaps, and a new hazard class for EDCs is under discussion for both REACH and CLP. Our EU EDC Task Force is preparing our contributions to public consultations informing revisions


to these regulations so that they are capable of efficiently and accurately assessing EDCs toward better consumer protections.

While EU policy activities on EDCs are progressing rapidly, we also remain engaged with policy makers, regulatory agencies, and scientific leaders to advance similar actions in the U.S. and around the world. We recently participated in an educational event during a meeting of the Persistent Organic Pollutants Review Committee (POPRC) of the Stockholm Convention, following in which the Committee unanimously agreed that global action was needed on toxic plastic additives.

“

**Our influence and achievements
as a Society are possible because
of a strong foundation of endocrine
science and the expertise of
our member leaders, who have
devoted their time and energy to these
and other advocacy activities.**

”

We also joined a petition requesting that FDA assess the safety of bisphenol-A, consistent with the updated review prepared by the European Food Safety Agency, indicating harm at much lower levels than previously assumed. Our influence and achievements as a Society are possible because of a strong foundation of endocrine science and the expertise of our member leaders, who have devoted their time and energy to these and other advocacy activities. However, all of our members can have an impact, and I encourage you to contact our Government and Public Affairs team at advocacy@endocrine.org to see how your research and expertise can reach a broader audience of policy makers, regulators, and other public health officials whether you are interested in EDCs, access to healthcare for underserved populations, improving the situation for trainees as pandemic restrictions are eased, or other important priorities. 

Carol H. Wysham, MD
President, Endocrine Society

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FROM THE **EDITOR**

Eradicating Racism in Endocrinology: The Time Is Always Now

In January, the Endocrine Society's Committee on Diversity and Inclusion and Advocacy and Public Outreach Core Committee joined together to publish "Eradicating Racism in Endocrinology: An Endocrine Society Policy Perspective" in *The Journal of Clinical Endocrinology & Metabolism*. In this paper, the Endocrine Society formally calls for policies to address racial and ethnic inequities in the endocrine workforce as well as in access to care. The policy perspective outlines several strategies for addressing racism in endocrinology, including ensuring equal access to quality care; building an inclusive and equitable endocrine workforce; and diversifying clinical trial participation and the research workforce.

On page 26, senior editor Derek Bagley takes a closer look at this policy perspective and speaks with many of the members involved in creating it from the ground up who all spoke about the importance, not just of this new statement from the Endocrine Society, but why this new effort has struck such a personal chord with them, their families, and in many cases, their patients. "To fix racism, we need a strong and sincere commitment from all members of the Society," says Licy L. Yanes Cardozo, MD, associate professor, Department of Cell and Molecular Biology, University of Mississippi Medical Center, Jackson, Miss., and one of the co-authors of the policy perspective. "Racism is a problem for and from all of us. Education and resources are key in generating the changes that will benefit all of us. Eliminating racism in medicine will not only improve health outcomes but will also improve the quality of life of all of us."

Writer Eric Seaborg discusses "mild cortisol excess" and ponders if it is "unsafe at any level" in his article on page 16. He looks at a new study that seems to show that even low levels of cortisol associated with adrenal incidentalomas can be a risk factor for cardiometabolic events. In the largest study to date looking at adrenal tumors, 1,300 patients with benign adrenal tumors from 14 endocrine secondary and tertiary care centers were examined. The researchers found that patients with mild autonomous cortisol secretion (MACS) have a significantly increased risk of both high blood pressure and type 2 diabetes than patients with a nonfunctioning tumor, according to corresponding author Wiebke Arlt,

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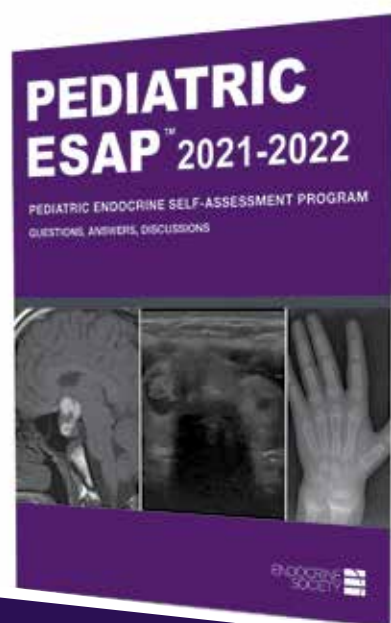
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MD, chair of medicine at the University of Birmingham in the U.K. “Patients with MACS who had hypertension were much more likely to be taking more than three hypertensive drugs, and patients with MACS with diabetes were more likely to be on insulin, compared with patients with nonfunctioning tumors,” she says, adding that if a patient’s metabolic health is impaired, “it should be considered whether the adrenal nodule be removed or the patient should receive medication to better control the metabolic risk.”

The impact of post-traumatic stress syndrome (PTSD) on pediatric patients with type 1 diabetes is detailed in “Shock to the System,” (p. 20) where Bagley looks at a new study that seems to suggest that while various forms of trauma and/or PTSD are fairly common in kids with type 1 diabetes, they actually have very little impact on their own self-management of the disease. Needless to say, this was a surprising finding to the researchers, but it also highlights the need to have multidisciplinary teams to care for these patients. Amy Lynn Meadows, MD, MHS, FAAP, FAPA, DFAACAP, associate professor of psychiatry and pediatrics at the University of Kentucky College of Medicine, who led the study that was published last fall in *Diabetes Spectrum* and co-author Rishi Raj, MD, who is currently the director of the Division of Endocrinology, Diabetes, and Metabolism at Pikeville Medical Center, Pikeville, Ky., say that what they see again and again is that the best treatments and technology in the world are useless if the patients will not use them. “Understanding more about the psychological factors that impact self-management can help us to better support our patients and their families, identify barriers to treatment, and treat underlying psychosocial vulnerabilities,” they say. “Multidisciplinary teams and expertise enable us to all be more effective at managing all aspects of diabetes care.” ^{EN}

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

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Endocrine Society Alarmed at Criminalization of Transgender Medicine

Texas governor inaccurately characterizes evidence-based care as “child abuse.”

“
Being forced to
experience puberty
consistent with the sex
recorded at birth is
extremely distressing
for many transgender
and gender-diverse
individuals.”

The Endocrine Society condemns the directive by Texas Governor Greg Abbott ordering the Department of Family and Protective Services (DFPS) to investigate any reported instances of Texas children receiving gender-affirming care as “child abuse.” This policy rejects evidence-based transgender medical care and will restrict access to care for teenagers experiencing gender incongruence or dysphoria.

Healthcare providers should not be punished for providing evidenced-based care that is supported by major international medical groups — including the Endocrine Society, American Medical Association, the American Psychological Association, and the American Academy of Pediatrics — and clinical practice guidelines.

Medical evidence, not politics, should inform treatment decisions. We call on policy makers to rescind this directive and allow physicians to provide evidence-based care, including to prescribe medications to delay puberty.

The governor’s directive reflects widespread misinformation about gender-affirming care. When young children experience feelings that their gender identity does not match the sex recorded at birth, the first course of action is to support the child in exploring their gender identity and to provide mental health support, as needed.

Only reversible treatments to delay puberty are recommended for younger adolescents after they have entered puberty, according to our Clinical Practice Guideline and joint policy perspective issued with the Pediatric Endocrine Society. Puberty-delaying medication is a safe and conservative approach that gives teenagers and their families more time to explore their options. The same treatment has been used for decades to treat precocious puberty.

Older adolescents who demonstrate the ability to provide informed consent to partially irreversible treatment and experience persistent gender incongruence may start gender-affirming hormone therapy to help them experience puberty in a way that matches their gender identity.



Being forced to experience puberty consistent with the sex recorded at birth is extremely distressing for many transgender and gender-diverse individuals.

Gender-affirming care benefits the health and psychological functioning of transgender and gender-diverse youth. When an individual's gender identity is not respected and they cannot access medical care, it can result in higher psychological problem scores and can raise the person's risk of committing suicide or other acts of self-harm.

There is widespread consensus within the medical community about the importance of this care. Other major international medical and scientific organizations such as WPATH, the European Society of Endocrinology, the European Society for Pediatric Endocrinology, the Pediatric Endocrine Society, the American Medical Association, the American Psychological Association, and the American Academy of Pediatrics are in alignment with the Society on the importance of gender-affirming care.

MEMBERS
in the
NEWS

Bessesen Named President of The Obesity Society



Endocrine Society member Dan Bessesen, MD, FTOS, a nutrition and obesity expert who has conducted research into nutrient metabolism and the regulation of body weight for the National Institutes of Health (NIH) is the new president of The Obesity Society (TOS).

"I am enthusiastic about and deeply grateful for the opportunity to serve


The Obesity Society over the coming year," Bessesen says. "TOS has been my academic home since I joined as a junior faculty member in 1995."

Bessesen is professor of medicine in the Division of Endocrinology, Metabolism, and Diabetes at the University of Colorado School of Medicine. He is also the director of the Anschutz Health and Wellness Center on the Anschutz Medical Campus of the University of Colorado and the Anschutz Foundation Endowed Chair in Health and Wellness. Bessesen is also the Fellowship Program Director for the University of Colorado Obesity Medicine Fellowship Program. He practices endocrinology at the Denver Health Medical Center.

The key areas of focus for Bessesen are to facilitate the transition of the TOS Annual Meeting back to an in-person format with virtual enhancements. In addition, he will work toward facilitating relationships between TOS and other sister societies and continue efforts to help the Society's flagship journal *Obesity* adapt to the evolving environment of journals focusing on the problem of obesity.

"I hope to take advantage of the insights and wisdom of the members of TOS working through the committees and sections to make sure our Society is providing services to our members that are of value to them and help them achieve their own professional goals," he says.

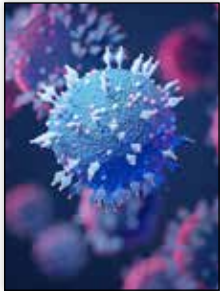
Other Endocrine Society members elected to the TOS council are both from the Department of Internal Medicine at UTSouthwestern Medical Clinical in Dallas, Texas: **Jaime Almandoz, MD**, associate professor, is a new council member at-large; and **Jeffrey Zigman, MD, PhD**, professor, was elected as council member basic/experimental/pre-clinical.

The Obesity Society is the leading organization of scientists and health professionals devoted to understanding and reversing the epidemic of obesity and its adverse health, economic and societal effects. For more information, visit: www.obesity.org. 



BY DEREK BAGLEY
Senior Editor

Estrogen Levels Linked to Higher Risk of COVID-19 Mortality in Older Women



“

This study shows an association between estrogen levels and COVID-19 death. Consequently, drugs increasing [estrogen] levels may have a role in therapeutic efforts to alleviate COVID-19 severity in postmenopausal women and could be studied in randomized control trials.

”

It might be worth exploring supplemental hormone treatment to curb the severity of COVID-19 infection in women who have already gone through menopause, according to researchers who recently published a study in *BMJ Open*. The study finds that estrogen levels may be linked to higher chances of dying from COVID-19, with higher levels of the hormone seemingly protective against severe infection.

The researchers, led by Anne-Marie Fors Connolly, of the Department of Clinical Microbiology at the Umeå University Faculty of Medicine in Umeå, Sweden, point out that women seem to have a lower risk of severe COVID-19 infection than men, even after accounting for potentially influential factors. And this is also true of other serious recent viral infections, such as MERS (Middle East Respiratory Syndrome).

It has been suggested, therefore, that estrogen may have a role in this gender discrepancy. To explore this further, the researchers compared the potential effects of boosting and reducing estrogen levels on COVID-19 infection severity.

They drew on national data from the Swedish Public Health Agency (all those testing positive for SARS-CoV-2); Statistics Sweden (socioeconomic factors); and the National Board of Health and Welfare (causes of death).

In all, 49,853 women were diagnosed with COVID-19 between February 4 and September 14, 2020, in Sweden, 16,693 of whom were between 50 and 80 years old.

The study sample included 14,685 women in total: 227 (2%) had been previously diagnosed with breast cancer and were on estrogen blocker drugs (adjuvant therapy) to curb the risk of cancer recurrence (group 1); and 2,535 (17%) were taking hormone replacement therapy

(HRT) to boost their estrogen levels in a bid to relieve menopausal symptoms (group 2).

Some 11,923 (81%) women acted as the comparison group and were not on any type of treatment, either to enhance or reduce their systemic estrogen levels.

Analysis of all the data showed that compared with no estrogen treatment, the crude odds of dying from COVID-19 were twice as high among women on estrogen blockers (group 1), but 54% lower among women on HRT (group 2).

After accounting for potentially influential factors, such as age, annual disposable income, educational levels, and coexisting health conditions, the odds of dying from COVID-19 remained significantly lower (53%) for women on HRT (group 2).

Unsurprisingly, age was significantly associated with the risk of dying from COVID-19, with each extra year associated with 15% greater odds, while every additional coexisting condition increased the odds of death by 13%. And those with the lowest household incomes were nearly three times as likely to die as those with the highest.

This is an observational study and, as such, can't establish cause. There were no data on the precise doses of HRT or estrogen blocker drugs, or their duration, nor on weight or smoking, while the number of women in group 1 on adjuvant therapy was relatively small.

These factors may have been influential. But the researchers conclude: “This study shows an association between estrogen levels and COVID-19 death. Consequently, drugs increasing [estrogen] levels may have a role in therapeutic efforts to alleviate COVID-19 severity in postmenopausal women and could be studied in randomized control trials.”



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A long-term analysis of patients treated in one of the studies using Medtronic SCS technology showed 80% of patients treated with SCS continued to use their devices at five years to treat their pain.
”

FDA Approves SCS Therapy to Treat DPN Chronic Pain

The U.S. Food and Drug Administration (FDA) last month approved a rechargeable neurostimulator and a recharge-free neurostimulator for the treatment of chronic pain associated with diabetic peripheral neuropathy (DPN). Medtronic is marketing the products as Intellis™ and Vanta™, respectively.

DPN is a debilitating and progressive neurological disorder that affects approximately 30% of people with diabetes, significantly impacting both quality of life and functional ability, including mood, social relationships, and sleep. DPN occurs when high blood sugar damages nerves in the body, most often in the legs and feet, leading to numbness and burning or stabbing pain. In some patients, the pain can become progressively worse and excruciating. Patients may be treated with medications, but they are often only partially effective and can result in serious side effects.

Independent studies show patients with DPN achieve significant pain relief when treated with spinal cord stimulation (SCS) compared to conventional treatments alone. Overall, 70% of patients receiving treatment with SCS experienced relief of their pain symptoms compared to 6% of patients receiving only conventional treatments.

Those treated with SCS experienced a 53% average reduction in pain, compared to 0% among patients receiving only conventional treatments. A recent meta-analysis showed a significant improvement in health-related quality of life in patients treated with SCS compared to those receiving only conventional treatments. A long-term analysis of patients treated in one of the studies using Medtronic SCS technology showed 80% of patients treated with SCS continued to use their devices at five years to treat their pain.



Review Examines Relationship Between Gestational Diabetes and Offspring Fertility

A review recently published in *Endocrinology* offers some new insights on how maternal obesity-associated gestational diabetes (GDM) affects the reproductive health of offspring, discussing possible mechanisms, the latest perceptions, and highlighting areas that need further investigation.

The review, by Niharika Sinha, PhD; Gretchen Lydia Walker; and Aritro Sen, PhD, all of Michigan State University in East Lansing, Mich., point out that women with obesity have a higher risk of developing GDM than normal-weight women, and that GDM affects 7% of pregnancies in the U.S. and 10% of pregnancies worldwide, and is becoming more prevalent as the obesity rate rises among women of reproductive age.

And while there has been a lot of focus on the effect of prenatal hyperglycemic environment and offspring health, specifically on the development of obesity, type 2 diabetes, and metabolic dysfunctions, there are very limited studies on the fertility and reproductive health of offspring born from women with hyperglycemia during pregnancy, the authors write. “Moreover, the understanding of how obesity and the GDM-associated adverse in utero prenatal environment reprograms the fetus (or fetal tissues) that predispose the offspring to various disease conditions is still poorly understood,” they continue. “Similarly, the underlying mechanism of the sexual dimorphism observed in GDM offspring with respect to manifestation of disease condition(s) later in life needs further investigation.”

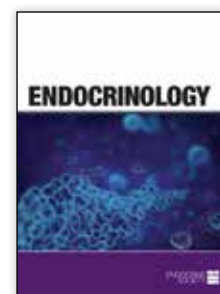
For this review, the authors examined evidence from various animal models and human epidemiological studies to offer molecular insight and understanding of how epigenetic

reprogramming of genes culminates in reproductive dysfunction and the development of subfertility or infertility later in adult life.

The review covers a lot, including the two-hit phenomenon, in which the adverse prenatal environment associated with GDM acts as the “first hit” that reprograms and sensitizes the offspring ovary (or the hypothalamus-pituitary-gonadal axis) to dietary (high-fat diet/high-fat, high-sugar) stress later in life. The HFD/HFHS diet acts as a “second-hit” later in life, accelerating and/or aggravating the reproductive dysfunction in the offspring. The authors write that animal studies of this phenomenon found that in utero programming can also have a transgenerational effect. “For example, studies have shown that subsequent generations of obese/hyperglycemic women are predisposed to metabolic diseases, even though they are not directly exposed to the metabolic insult,” they write. “Future studies are needed to establish whether similar transgenerational effects on reproductive health are associated with GDM.”

And again, the review points to areas that need further studies. For example, in the conclusion, the authors write that long-term prognosis of reproductive health of offspring from GDM pregnancy in human cohorts is needed to establish a connection between maternal health and sex-specific offspring, since reproductive dysfunction is a concern for men and women whose mothers experienced maternal hyperglycemia.

“Changes in epigenetic marks may be an early event in the pathogenesis and progression of various disorders,” they continue. “Thus, studies on mechanisms of epigenetic modifications can contribute to our understanding of long-term effects of in utero exposure and shed light on disease prevention/treatment.”



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Studies have shown that subsequent generations of obese/hyperglycemic women are predisposed to metabolic diseases, even though they are not directly exposed to the metabolic insult.

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Oxytocin holds promise as a potential biomarker for HD diagnostics and as a measure of disease severity. Taken together, these findings motivate further research to elucidate the explicit role of oxytocin in HD pathophysiology.
”

Men with Sex Addiction May Have Higher Levels of Oxytocin

Higher levels of the “love hormone” oxytocin may be to blame for men with hypersexual disorder (HD), according to a small study recently published in *The Journal of Clinical Endocrinology & Metabolism*.

The researchers point out that HD is considered a nonparaphilic sexual desire disorder that involves excessive and persistent sexual behaviors in relation to various mood states, with an impulsivity component and experienced loss of control, but there is still a lack of knowledge regarding the pathophysiology underlying the disorder. “Sexual behavior is a complex process and under the control of neuroendocrine regulation, the limbic system, and inhibitory frontal lobe activity,” the authors write. “Although sexual response studies have implicated dopamine, serotonin, neuropeptides, glutamate, and gamma aminobutyric acid, little is known how they influence patients with excessive sexual behavior/HD.”

Oxytocin is a hormone produced by the hypothalamus and secreted by the pituitary gland. It plays a key role in sexual behavior, and abnormal levels of the hormone may contribute to hypersexual disorder. For this study, the researchers aimed to examine plasma oxytocin levels in men diagnosed with HD, since they hypothesized an involvement of the oxytocinergic system as a counterregulator of the cortisol stress system in HD.

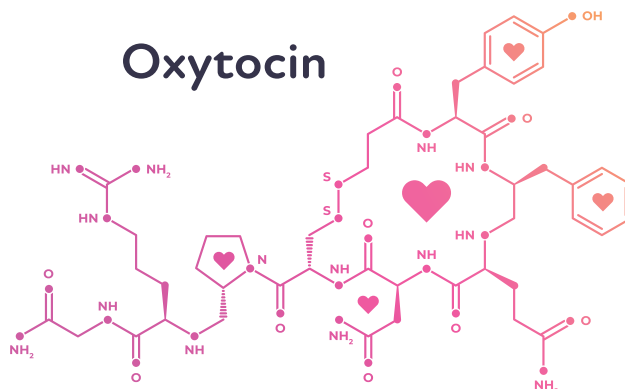
The researchers analyzed the blood samples of 64 men with hypersexual disorder and 38 healthy men and found the hypersexual men had higher levels of oxytocin in their blood. Thirty men with hypersexual disorder went through a cognitive behavioral therapy program and

saw a significant reduction in their oxytocin levels after treatment.

“We discovered that men with compulsive sexual behavior disorder (CSBD) had higher oxytocin levels compared with healthy men,” says Andreas Chatzittofis, MD, PhD, of the University of Cyprus Medical School in Nicosia, Cyprus, and Umeå University in Umeå, Sweden. “Cognitive behavioral therapy led to a reduction in both hypersexual behavior and oxytocin levels.”

This is the first study to investigate oxytocin’s role in HD, and the authors note that further studies are needed. Replicating these findings in larger studies and additional studies excluding potential confounding factors from recent sexual activity are needed before causality can be inferred.

“We present our novel findings in demonstrating elevated plasma oxytocin levels in cases of HD compared to controls,” the authors write. “Moreover, we provide evidence that these excessive oxytocin levels are effectively normalized after CBT treatment. As such, oxytocin holds promise as a potential biomarker for HD diagnostics and as a measure of disease severity. Taken together, these findings motivate further research to elucidate the explicit role of oxytocin in HD pathophysiology.” ^{EN}



“

Training regarding implicit bias, cultural and structural competencies, microaggressions, mistreatment, and racism in healthcare and science are vital for educating healthcare professionals and scientists to advance the treatment and care of patients with endocrine disorders. **The gains in training will be enhanced by policies to ensure implicit biases do not hinder care and harm patients.”**

— Joshua Joseph, MD, associate professor of endocrinology, diabetes, and metabolism, The Ohio State University College of Medicine, Columbus, Ohio; and a co-author of the Endocrine Society's policy perspective, “Eradicating Racism in Endocrinology: An Endocrine Society Policy Perspective,” which is discussed in “The Time Is Always Now” on page 26.

MEMBER SPOTLIGHT Q&A

Cynthia Andoniadou, PhD



Cynthia Andoniadou is a Reader in Stem Cell Biology at the Centre for Craniofacial & Regenerative Biology at King's College London. She was born in Greece and carried out her studies in London at Queen Mary, University of London and the MRC National Institute for Medical Research, and her postdoctoral research

at the UCL Institute for Child Health. Her lab focuses on the regulation of stem cells in the pituitary and adrenal glands and how stem cells interact with their environment, influencing the function of endocrine cells.

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

I was fortunate enough to receive a Mara E. Lieberman Memorial Travel Grant to present my research at my first **ENDO** (2013, San Francisco). It took place a few months before I was due to start my own lab, and the exposure I received was a big boost. I met many of my endocrine heroes and established several collaborations through that meeting, all of which were crucial during the subsequent early years of my career and still today. As a basic scientist, I came into endocrinology from a different field (development of the forebrain), and I knew I was making the right move when I realized how welcoming and engaging both the basic and clinical participants were at the meetings.

What is the one question you would want to ask other Endocrine Society members?

I'd ask clinical members what they would consider the most important areas that need improvement through further research that they have identified in their clinical practice. What is currently substandard that you would like to change? As a basic scientist, I sometimes find that curiosity about scientific conundrums and findings can lead us down a very exciting path, but staying focused on the direct or indirect impact of our research to patients can help shape our overall direction. It doesn't apply to all basic researchers, but for me, the clinical interactions are important.

Read more about Andoniadou and other notable Endocrine Society members at: www.endocrine.org/member-spotlight.

76%

Patients diagnosed with osteoporosis are 76% more likely to develop sudden-onset hearing loss.

SOURCE: THE JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM

50%

A new study suggests the liver hormone fibroblast growth factor 21 (FGF21) suppressed alcohol consumption by 50%. SOURCE: CELL METABOLISM



Prolactinomas account for 40% of functioning pituitary tumors.

SOURCE: HORMONE HEALTH NETWORK



Five to Nine Years



Women who use estrogen-progestogen therapies for between five and nine years have slightly increased risk of developing Alzheimer's disease.

SOURCE: CNN

ENDO 2022

June 11 – 14, 2022 • Atlanta, Georgia/Virtual Event

ADVANCE REGISTRATION:

Advanced: March 5, 2022 – May 18, 2022

Late/On Site: May 19, 2022 – June 14, 2022

HOUSING DEADLINE: May 20, 2022

ENDO 2022, taking place June 11 – 14, will be the Society's inaugural hybrid meeting; attendees can participate in Atlanta, online... or both! This increased flexibility will foster expanded connectivity, community, and knowledge sharing among the diverse, international endocrine community. Each format has intrinsic benefits, and when the time comes, attendees will have the option to select the best format that suits their desires and needs when June 2022 rolls around.

Attendees can expect top-flight education at **ENDO 2022**, as well as a new vibrancy and contemporary conference experience with expanded networking. Learners can expect a range of carefully curated sessions in a variety of delivery formats spanning the endocrinology journey from bench to bedside and back again. **ENDO 2022** attendees will have the opportunity to tailor their learning experience to fit their precise professional and personal development needs. The Society is also ramping up its investment in technology-forward learning enhancements to align the **ENDO** learning experience with the reality of day-to-day life in the 21st century. www.endocrine.org/endo2022



Clinical Endocrinology 2022

Live Streaming

April 6 – 10, 2022

Clinical Endocrinology 2022, a live streaming CME program, has been optimized for remote learning. All sessions and workshops will be live streamed and include online, live chat, where participants can pose their specific questions to faculty. All sessions and workshops will be recorded and made available to participants for online viewing, at their convenience, via a course archive. As a participant, you will be able to access these recordings for 60 days after the conclusion of this course. For nearly 50 years, renowned experts in endocrinology at Harvard Medical School and Massachusetts General Hospital have delivered the

CME course Clinical Endocrinology – the acclaimed annual update of current endocrine diagnostic and management strategies. If you provide care to patients with endocrine disorders, this course will be invaluable to your medical decision making and patient care.

<https://endocrinology.hmscme.com>

2022 ACOG Annual Clinical & Scientific Meeting

**San Diego, California
May 6 – 8, 2022**

The American College of Obstetrics and Gynecologists Annual Clinical Scientific Meeting (ACSM) has long been a gathering of the leading women's healthcare experts, and this year is no exception. ACSM provides attendees with cutting-edge research, clinical best practices, and collaborative

solutions to the challenges faced by our members. Sessions for the meeting will center around four tracks: obstetrics, gynecology, professional development, and office practice. Concise and focused sessions across a variety of topics promise to engage attendees while providing opportunities to connect. The programming for ACSM 2022 will emphasize this year's theme: Reconnect, Recharge, Reset.

<https://www.acog.org/>

The Growth Hormone (GH)/ Prolactin (PRL) Family in Biology & Disease Conference

Athens, Ohio

May 15 – 19, 2022

The aim of this FASEB Science Research Conference (SRC) is to improve our understanding of the regulation and action of growth

hormone (GH) and prolactin (PRL) and their specific receptors. The conference will present and integrate novel research advances in GH/PRL biology to raise the profile of the field and foster new national and international collaborative projects. A key aspect is to encourage and support emerging investigators/trainees and the participation of underrepresented groups.
<https://www.faseb.org/>

AAES 2022

Cleveland, Ohio, and Virtual Event

May 22 – 24, 2022

As the leading endocrine surgery association in North America, the American Association of Endocrine Surgeons (AAES) Annual Meeting is the premier event to connect with professionals and leaders across the globe in the field of endocrine surgery while receiving high-level education on the latest advancements in science and research. The 2022 Annual Meeting will be a hybrid event taking place in Cleveland, Ohio, but with virtual opportunities. While in-person podium presentations are preferred, exceptions will be made, and the ability to travel to the meeting venue is not a prerequisite for abstract acceptance.

<https://www.endocrinesurgery.org/2022-annual-meeting>

American Diabetes Association's 82nd Scientific Sessions

Hybrid – New Orleans, Louisiana

June 3 – 7, 2022

We know many of you are eager to get back to participating in-person, networking with colleagues, hearing the latest scientific advances and groundbreaking research presentations, and experiencing the exhibit and poster halls. We encourage everyone to join us June 3 – 7, 2022, at the Ernest N. Morial Convention Center in New Orleans, La. The health and safety of our attendees remain our top priority, and we will follow COVID-19 safety practices. For those unable to join us in-person, we are planning a virtual program to ensure as many people as possible can participate.

<https://professional.diabetes.org/scientific-sessions>

INTERNATIONAL ITINERARY

WCO-IOF-ESCEO 2022

Berlin, Germany

March 24 – 27, 2022

For this 22nd edition of the World Congress on Osteoporosis, Osteoarthritis, and Musculoskeletal Diseases (WCO-IOF-ESCEO) Congress, the members of the Committee of Scientific Advisors of the IOF and the members of the Scientific Advisory Board of ESCEO are developing a very exciting Congress' scientific program that will bring together the world's best in the field of musculoskeletal health and disease.

<https://www.wco-iof-esceo.org>

3rd World Congress on Diabetes & Endocrinology

Dubai, UAE

May 9 – 10, 2022

The 3rd World Diabetes Congress 2022 brings together a unique international mix of experts, researchers, and decision makers both from academia and industry across the globe to exchange their knowledge, experience, and research innovations. This conference is a unique international platform that's a confluence of all stakeholders of the ecosystem — industry, academia, research, innovators, regulators — coming together to present and discuss current topics in diabetes and endocrinology, gestational diabetes, epidemiology and public health, obesity, pediatric endocrinology, diabetes and immunology, diabetic neuropathy, and many more. Join us to network with your peers, exchange expertise and experiences, and arm yourself with the latest information to take your department to the next level.

<https://diabetes.inovineconferences.com/>

EndoBridge 2022

Antalya, Turkey

October 20 – 23, 2022

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

www.endobridge.org



Cortisol Excess

Unsafe at
Any
Level?

BY ERIC SEABORG

A new study finds that even low levels of the “mild cortisol excess” associated with adrenal incidentalomas can increase cardiometabolic risk.

Benign tumors on adrenal glands may not be so benign when it comes to patients' overall health, according to the largest study to date on the topic. An international consortium of researchers found that the mild autonomous cortisol secretion (MACS) that commonly results from adrenal incidentalomas is associated with a significantly higher risk of cardiometabolic disease.

These tumors are very common, discovered incidentally in approximately 5% of abdominal imaging studies performed for reasons unrelated to the adrenal glands. Although some tumors clearly increase cortisol secretion to a level that leads to a diagnosis of Cushing syndrome, the impact of milder cortisol elevations has been unclear.

Previous studies of MACS — sometimes termed subclinical Cushing syndrome — have been small and reported ambiguous and sometimes contradictory findings that have led to inconsistent recommendations on treatment. In an effort to obtain more definitive data, researchers recruited 1,300 patients with benign adrenal tumors from 14 endocrine secondary and tertiary care centers and published their results online on January 4 in the *Annals of Internal Medicine*.

Patients underwent a dexamethasone suppression test and had their net steroid production assessed with a 24-hour urine collection. The researchers categorized the patients into four groups based on their dexamethasone test results according to guidelines from the European Society of Endocrinology for the treatment of adrenal incidentalomas:

- ▶ 50% were rated as having a “nonfunctioning” adrenal tumor (morning serum cortisol of less than 50 nmol/L or 1.8 mcg/dL);
- ▶ 35% were placed in the MACS-1 group (serum cortisol of 50 to 138 nmol/L or 1.8 to 5 mcg/dL);
- ▶ 11% were in the MACS-2 group (serum cortisol over 138 nmol/L but without clinical signs of Cushing syndrome); and
- ▶ 5% had Cushing syndrome based on high levels of cortisol and clinical signs.

The researchers then reviewed the patients' charts to examine the relationship between their cortisol levels and the presence and severity of hypertension and diabetes. “We

“ One aspect that was shocking to me was the very high prevalence of co-morbidities in the non-functioning adrenal tumor group.... Yet the authors still saw differences graded to cortisol production.... **There is no escaping that even a little too much cortisol is not healthy in the long run, but the quandary remains regarding how to best assess the patients and what to do about it.”**

— RICHARD AUCHUS, MD, PHD, PROFESSOR OF INTERNAL MEDICINE AND PHARMACOLOGY, UNIVERSITY OF MICHIGAN, ANN ARBOR



Patients who don't have overt Cushing syndrome are not always followed as closely as they should be. There are conflicting recommendations of whether you should remove these mild autonomous cortisol-secreting adrenal tumors or just watch the patients and not necessarily do something. The study implies that we should be more open to adrenalectomy than we previously have been in these patients. **At a minimum, we need close follow-up of developing co-morbidities and other issues to make personalized, individualized decisions on each patient's care."**

— LAUREN FISHBEIN, MD, PHD, ASSOCIATE PROFESSOR OF MEDICINE IN ENDOCRINOLOGY, METABOLISM, AND DIABETES, UNIVERSITY OF COLORADO, AURORA.

found that patients with MACS have a significantly increased risk of both high blood pressure and type 2 diabetes than patients with a nonfunctioning tumor," says corresponding author Wiebke Arlt, MD, chair of medicine at the University of Birmingham in the U.K. "Patients with MACS who had hypertension were much more likely to be taking more than three hypertensive drugs, and patients with MACS with diabetes were more likely to be on insulin, compared with patients with nonfunctioning tumors."

The study found that patients with MACS-2 had "an increased cardiometabolic burden similar to that seen in Cushing syndrome, even if they do not display typical features of clinically overt cortisol excess."

Arlt adds that the study found that MACS "predominantly affects women, so is a major factor potentially defining the metabolic health of women after the menopause. It is a previously overlooked relatively common cause of type 2 diabetes and high blood pressure."

The study also found a distinct continuum of greater cortisol levels being associated with greater risk.

Confirming Suspicions

"The study confirmed what was reported in other smaller studies," says Richard Auchus, MD, PhD, professor of internal

medicine and pharmacology at the University of Michigan, who was not involved in the study. "The difference is that with the large size there is much higher confidence with the results."

Lauren Fishbein, MD, PhD, associate professor of medicine in endocrinology, metabolism, and diabetes at the University of Colorado, who was also not involved in the study, says the results are not surprising: "I think the study confirms a lot of what we suspected. But it is the first large study that really proves it."

Tip of the Iceberg?

In an invited editorial that accompanied the study, Andre Lacroix, MD, professor of medicine at the University of Montreal teaching hospital, wrote: "The data clearly support the European Society of Endocrinology guideline [on management of adrenal incidentalomas] that clinicians should determine precisely the cardiometabolic consequences of mild cortisol secretion in patients with adrenal lesions."

One limitation of the study that the authors acknowledge was that there was no matched control group of patients who had had scans with no adrenal incidentaloma found. Lacroix tells *Endocrine News* that this lack of a control group could "mask the fact that even lower amounts of cortisol production may also have some deleterious effects because even the patients who have so-called nonfunctional tumors have a very high prevalence of hypertension or diabetes. If you look at the group that has very


low cortisol production, 64% of those individuals have hypertension. In the general population, hypertension prevalence in adults is about 30%. The study may be showing only the tip of the iceberg of problems caused by excess cortisol.”

Auchus echoes this sentiment: “One aspect that was shocking to me was the very high prevalence of co-morbidities in the non-functioning adrenal tumor group: 80% were overweight or obese, 64% had hypertension, and 26% had diabetes (with 17% taking insulin). Yet, the authors still saw differences graded to cortisol production. There is no escaping that even a little too much cortisol is not healthy in the long run, but the quandary remains regarding how to best assess the patients and what to do about it.”

Lacroix says that one confounding factor is that a cortisol level is a crude measure: “We currently lack a good marker of the real biological effect of cortisol.”

What to Do About It

“I think this study does push for the importance of not ignoring this group of mild adrenal cortisol-secreting tumors,” Fishbein says. “Patients who don’t have overt Cushing syndrome are not always followed as closely as they should be. There are conflicting recommendations of whether you should remove these mild autonomous cortisol-secreting adrenal tumors or just watch the patients and not necessarily do something. The study implies that we should be more open to adrenalectomy than we previously have been in these patients. At a minimum, we need close follow-up of developing co-morbidities and other issues to make personalized, individualized decisions on each patient’s care.”

Arlt notes that the study underscores the importance of investigating “incidentally discovered nodules on their adrenal, which are often ignored. It is important that these patients are assessed with a dexamethasone suppression test. If they have MACS, then they should be regularly assessed for their metabolic health. If their metabolic health is impaired, it should be considered whether the adrenal nodule be removed or the patient should receive medication to better control the metabolic risk.” 

For More Information:

Prete A, Subramanian A, Bancos I, et al. Cardiometabolic disease burden and steroid excretion in benign adrenal tumors: a cross-sectional multicenter study. *Ann Intern Med*. 2022 Jan 4. doi: 10.7326/M21-1737. Online ahead of print.

Lacroix A. Cardiometabolic morbidity of mild cortisol excess. *Ann Intern Med*. 2022 Jan 4. doi: 10.7326/M21-4526. Online ahead of print.

Fassnacht M, Arlt W, Bancos I, et al. Management of adrenal incidentalomas: European Society of Endocrinology clinical practice guideline in collaboration with the European Network for the Study of Adrenal Tumors. *Eur J Endocrinol*. 2016;175:G1-G34. [PMID: 27390021] doi:10.1530/EJE-16-0467.



AT A GLANCE

- ▶ Many of the benign adrenal tumors commonly found on abdominal scans could be having greater negative effects on patient health than has been previously shown.
- ▶ Patients with cortisol output below the levels associated with Cushing syndrome still have much greater risks of hypertension and diabetes, according to the largest study to date of benign adrenal tumors.
- ▶ The study implies that even low levels of cortisol from so-called nonfunctioning tumors could have deleterious effects.



BY DEREK BAGLEY

SHOCK *to the System*

**Pediatric
Type 1
Diabetes
Patients and
Trauma**



A new study seems to suggest that while trauma and post-traumatic stress syndrome are common in kids with type 1 diabetes, they have little to no impact on their diabetes self-management. However surprising this finding may be to researchers, it further stresses the need for multidisciplinary teams to care for these patients.

Children suffering traumatic experiences is already disheartening enough, but when that trauma is compounded by a diagnosis of type 1 diabetes (or when that diagnosis causes the trauma), that can put up a lot of obstacles that need to be navigated, walls that need to be scaled or demolished.

Endocrinologists who treat children with type 1 diabetes who may not be hitting their glycemic targets should be aware that there may be more than meets the eye to these patients, something bubbling underneath the surface that can potentially cause a cycle that's difficult to break.

Last November, a paper appeared in *Diabetes Spectrum* that looked at how traumatic experiences and post-traumatic stress disorder (PTSD) impacts how pediatric patients manage their type 1 diabetes, born out of clinical observations and discussions among authors at the University of Kentucky and the UK HealthCare Barnstable Brown Diabetes Center in Lexington, Ky. The authors — from a variety of disciplines — observed that psychiatric symptoms seemed to play a role in diabetes self-management in children, adolescents, and emerging adults with type 1 diabetes. Indeed, psychiatric factors like depression and anxiety are known to negatively affect glycemic control, but little is known about how trauma exposure and PTSD may impact type 1 diabetes, so the researchers at UK decided to look for how

“

Careful screening and management of underlying psychiatric disorders may help in improving diabetes-related outcomes in pediatric patients with type 1 diabetes. **Use of standardized screening questionnaires such as Child and Adolescent Trauma Screen (CATS) may help identify children with traumatic life experiences and PTSD.”**

— RISHI RAJ, MD, DIRECTOR, DIVISION OF ENDOCRINOLOGY, DIABETES, AND METABOLISM, PIKEVILLE MEDICAL CENTER, PIKEVILLE, KY

common these factors are in children with type 1 diabetes, and the relationship between trauma exposure, PTSD, anxiety, depression, and diabetes self-management.

“Emotional factors and experiences play an important role for children and teenagers who are learning to manage type 1 diabetes; psychological trauma exposure is very common, but we are still working to understand more about how it may affect diabetes self-management,” says Amy Lynn Meadows, MD, MHS, FAAP, FAPA, DFAACAP, associate professor of psychiatry and pediatrics at the University of Kentucky College of Medicine, who led the study.

Trauma’s Negligible Impact

For this study, the researchers recruited 99 children and young adults between the ages of seven and 21 years old with type 1 diabetes over almost two years. They conducted screening questionnaires to identify underlying psychiatric disorders such as trauma exposure, PTSD, depression, anxiety disorder, and suicidal ideation, then looked at the rates of various psychiatric disorders and their correlation to diabetes management, including glycemic control and self-management.

The study found that 66% of participants had traumatic exposure; 39% of those also had PTSD symptoms. Researchers found the most common trauma exposure was accidental injury and traumatic medical stress. They also found that when comparing to the goal of treatment as defined by American Diabetes Association guidelines, only 11% of children with type 1 diabetes achieved glycemic targets and only 40% of participants were checking blood glucose four times a day.

The study ultimately concluded that while trauma was common among youth with type 1 diabetes, neither trauma nor PTSD was associated with changes to self-management. However, they do believe certain forms of anxiety and suicidal ideation were associated with poor self-management and higher HbA1c.

“Our study replicated findings from prior work and found a correlation between some forms of anxiety disorder and suicidal ideation to impact glycemic control and self-management,” says Rishi Raj, MD, who is currently the director of the Division of

Endocrinology, Diabetes, and Metabolism at Pikeville Medical Center, Pikeville, Ky., helped lead the study during his fellowship at the University of Kentucky and is the first author of the paper. “However, we were surprised to see that despite high rates of trauma exposure and PTSD, there was not any statistically significant association of trauma exposure/PTSD with glycemic control or diabetes self-management.”

The project was supported by a Research Starter Grant from the Kentucky Children’s Hospital – Children’s Miracle Network Research Fund and the NIH National Center for Advancing Translational Sciences through grant number UL1TR001998.

Difficult Discussions with Pediatric Patients

These results were surprising, but both Meadows and Raj say that for future work, it could be valuable to examine more in depth which specific psychological trauma exposures are the most important, who may be most vulnerable, and how timing of traumatic experiences may affect self-management. “Our work could serve as a ground for future research to look at more specific questions such as type of trauma exposure, the timing of trauma exposure, and so on,” Raj says.

And those specific questions may be needed sooner than later. The researchers say that they observed during their work that rates of trauma and PTSD in these patients were “alarmingly high” — again, the rates of exposure to traumatic events were seen in approximately two-thirds of the participants, while more than a third of the children had PTSD. “One important factor is that many children with diabetes may experience their diagnosis itself or hospitalizations as potentially traumatizing,” Meadows says.

And while this study was a snapshot of participants at that particular moment in time, alarmingly high rates like these may point to the fact that providers need to start assembling teams of people who know how to carefully broach some upsetting topics for a more multidisciplinary approach.

Avoiding Avoidance

Raj says psychiatric disorders are often underdiagnosed and even less frequently addressed. He says certain psychiatric symptoms, including some symptoms of anxiety, were found to be associated with less frequent blood glucose checking. “Careful screening and management of underlying psychiatric disorders may help in improving diabetes-related outcomes in pediatric patients with type 1 diabetes,” he says. “Use of standardized screening questionnaires such as Child and Adolescent Trauma Screen (CATS) may help identify children with traumatic life experiences and PTSD.”



AT A GLANCE

- ▶ Psychiatric factors like anxiety and depression are known to negatively impact self-management of diabetes in children, but not much is known about how traumatic experiences and PTSD affect diabetes self-care in pediatric patients with type 1 diabetes.
- ▶ A recent study found that while trauma was common among youth with type 1 diabetes, neither trauma nor PTSD was associated with changes to self-management, which surprised researchers.
- ▶ Still, this study again speaks to the need of multidisciplinary teams treating pediatric patients with diabetes, and providers may be asking some uncomfortable but important questions.

“

Emotional factors and experiences play an important role for children and teenagers who are learning to manage type 1 diabetes; psychological trauma exposure is very common, **but we are still working to understand more about how it may affect diabetes self-management.”**

— AMY LYNN MEADOWS, MD, MHS, FAAP, FAPA, DFAACAP,
ASSOCIATE PROFESSOR OF PSYCHIATRY AND PEDIATRICS,
UNIVERSITY OF KENTUCKY COLLEGE OF MEDICINE, LEXINGTON



Meadows says that one of the core factors of PTSD is avoidance — these patients may be hesitant to talk about traumatic experiences. A lot of times, traumatic experiences are related to medical issues, which could throw up another barrier to optimal care, but a barrier that can be broken through. “Providers may not recognize trauma unless they are directly asking about it,” she says. “Asking specifically about stressors and potentially traumatic life experiences may open up important conversations.”

For Meadows and Raj, the study itself was encouraging. Both tell *Endocrine News* that the participants and their families were enthusiastic and eager to help their team learn more about the factors affecting diabetes control. And this study once again provides additional support for pediatric diabetes management to include a multidisciplinary team of social workers, psychologists, or psychiatrists for routine screening, managing underlying psychiatric conditions, and coordinating care with endocrinologists and other diabetes specialists, Raj says.

“What we see again and again is that we can have the best treatments and technology in the world, but they do not work if patients will not do them,” Meadows and Raj say. “Understanding more about the psychological factors that impact self-management can help us to better support our patients and their families, identify barriers to treatment, and treat underlying psychosocial vulnerabilities. Multidisciplinary teams and expertise enable us to all be more effective at managing all aspects of diabetes care.” **EN**

— BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. IN THE FEBRUARY ISSUE, HE WROTE ABOUT ADVANCES IN PEDIATRIC GROWTH HORMONE DEFICIENCY TREATMENT.

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The Time is *Always* Now

BY DEREK BAGLEY

THE ENDOCRINE SOCIETY'S
CALL TO ELIMINATE RACISM
IN ENDOCRINOLOGY



With the publication of “Eradicating Racism in Endocrinology: An Endocrine Society Policy Perspective” in the January issue of *The Journal of Clinical Endocrinology & Metabolism*, the Endocrine Society formally calls for policies to address racial and ethnic inequities in the endocrine workforce and in access to care.

James Baldwin began his 1956 essay “Faulkner and Desegregation” with, “Any real change implies the breakup of the world as one had always known it, the loss of all that gave one an identity, the end of safety.” Baldwin was expressing his disappointment that William Faulkner had famously told the NAACP to “go slow” when it came to desegregation in the South. Baldwin goes on to conclude: “There is never time in the future in which we will work out our salvation. The challenge is in the moment, the time is always now.”

Six decades later and the medical community is still in need of a breakup of its own world. Racial and ethnic disparities have spread their tentacles throughout all aspects of healthcare, whether some people want to pretend not to feel them. During the **ENDO 2021** session, “Addressing the Impact of Structural Racism on Endocrinology and Health Care,” Sherri-Ann Burnett-Bowie, MD, MPH, discussed just how deeply rooted structural racism is in our healthcare system. Burnett-Bowie works as a clinical investigator in Massachusetts General Hospital Endocrine Unit in Boston, and she told attendees that their policy is to review clinical practices to determine how — not if — racism is affecting clinical decisions.



**In January,
the Endocrine
Society
published
a policy
perspective
in *The Journal
of Clinical
Endocrinology &
Metabolism* that
aims to address
all facets of
racial and ethnic
inequities in
the healthcare
system, from
bench to
bedside.**

The authors write: “Here we 1) convey a message to the broader membership on a policy priority: eliminating racism in endocrinology; 2) discuss the impact of racism in endocrinology by reviewing sources of disparities and sharing anticipated consequences of racism in clinical and research settings; and 3) propose interventions (changes in education, practices, and policies) aimed at eliminating racism in endocrinology.”

“Health disparities are one of the most pressing issues facing science and medicine,” says Ruban Dhaliwal, MD, MPH, research physician at Massachusetts General Hospital, member of the Endocrine Society’s Advocacy and Public Outreach Core Committee, and chair of this policy initiative. “As endocrinologists, we have a responsibility to take actions to advance equity in clinical care and research in our discipline and for our patients. The Endocrine Society has incorporated its commitment to diversity, equity, and inclusion into all facets of its education and advocacy initiatives and programming.”

Taking Priority

Dhaliwal first brought this perspective idea to the Endocrine Society’s Committee on Diversity and Inclusion (CoDI) in the summer of 2020 — when the Black Lives Matter movement was gaining more supporters after the murder of George Floyd, coupled with the fact that the COVID-19 pandemic was uncovering even deeper layers of health disparities.

“I am excited about this perspective, which has been more than a year in the making,” says Rodneikka Scott, chief membership and diversity programs officer at the Endocrine Society. “In it, we honor our mission, recognizing that eradicating racism is inextricably linked to achieving our mission to unite, lead, and grow the endocrine community to accelerate scientific breakthroughs and improve health worldwide.”

“I want to thank the many members of our community who represent research and clinical care, who gave their time, insights, and passion for developing this perspective,” she continues. “Our success will depend on the ongoing efforts of an entire endocrine community committed to eliminating racial and ethnic disparities.”

Make no mistake: Addressing these issues and promoting diversity, inclusion, and equity across healthcare is a top priority for the Society, and the purpose of this paper was not to point out gaps in the Society's health equity work, but to acknowledge that there's still much work to be done. In fact, the Society has been leading these efforts for almost 30 years. But again, the time is always now.

A Public Health Threat

The introduction of the Society's perspective states bluntly, and accurately, that racism is destructive to individuals and society, and is a direct threat to public health. It's no secret that racial and ethnic minority populations have the highest prevalence of diabetes in the U.S., while at the same time being denied routine care and experience worse complications from diabetes. And while Black Americans are far more likely to be diagnosed with diabetes and are far less likely to have their condition managed because of prohibitive costs, this population is at the most pronounced disadvantage when it comes to access to insulin, non-insulin diabetes medications, and diabetes technology including continuous glucose monitoring and insulin pumps. Lack of access to these highly beneficial medications and tools is due not only to high costs, but also due to provider implicit or explicit bias.

Osteoporosis is screened less often in African Americans, although after a fracture, that population is more likely to have longer hospital stays and a significantly higher risk of disability, death, and destitution than White Americans.

In Mississippi, where Licy L. Yanes Cardozo, MD, works as associate professor in the Department of Cell and Molecular Biology at University of Mississippi Medical Center in Jackson, Black people are twice as likely to die from diabetes. (A November 2021 report from the Commonwealth Fund found racial health disparities across all 50 states, but Mississippi ranked among the worst.)

But it's precisely where Cardozo feels she needs to be, and why she says she feels honored to help co-author the Society perspective. "As a practicing endocrinologist in Mississippi, a state with a large population of minorities, to be part of this manuscript is both a privilege and a personal necessity," she says. "We can be the voice of those who do not have one; the time for a change is now."

The authors of the perspective further point out that it's extremely important that when measuring disparities to test for disparities within racial and ethnic subgroups and to not assume that racial and ethnic minority groups are homogenous.

According to Rocio Pereira, MD, chief of endocrinology at the safety-net hospital system Denver Health, associate professor of medicine at the University of Colorado, and co-author of the Society perspective, prevalence of chronic diseases can be very different among Asian Americans from China, compared to those from the Philippines, in Latin Americans from Mexico compared to Latin Americans from Peru or other parts of South America, or Black/African Americans from the Caribbean compared to Black/African Americans from the U.S. "This variability likely reflects differences in social determinants of health that impact each population. We must continue to look for these



ABOUT THE POLICY PERSPECTIVE

The paper, "Eradicating Racism in Endocrinology: An Endocrine Society Policy Perspective," is a collaborative effort between the Society's Committee on Diversity and Inclusion and Advocacy and Public Outreach Core Committee.

Co-authors of the policy perspective include Rocio Pereira of the University of Colorado School of Medicine in Aurora, Colo.; Alicia Diaz-Thomas of the University of Tennessee Health Science Center in Memphis, Tenn.; Camille Powe of Massachusetts General Hospital and Harvard Medical School; Licy Yanes Cardozo of the University of Mississippi Medical Center in Jackson, Miss.; and Joshua Joseph of the Ohio State University College of Medicine in Columbus.

Joshua Joseph, MD



The systems and pathways that we research and treat are complex, and the challenges many of our patients face are enormous. The impact of racism (internalized, interpersonal, institutional, and structural) is complex, and eradicating racism will require the same ingenuity and innovation that we use to research and treat the complex disorders that make up the field of endocrinology.”

— JOSHUA JOSEPH, MD, ASSOCIATE PROFESSOR OF ENDOCRINOLOGY, DIABETES, AND METABOLISM, THE OHIO STATE UNIVERSITY COLLEGE OF MEDICINE, COLUMBUS.

differences and to identify and address the factors, including racism, that lead to these disparities,” she says.

“Minority Tax” Rebate

The plan had been to publish the Society perspective sooner, but as the authors saw just how deep the problem was, they wanted to dive into the scientific literature to see exactly how race plays a role in endocrinology. For instance, the authors write about the ongoing debate on whether to include race adjustments in clinical algorithms. The Endocrine Society will re-examine those same questions in the coming year.

Joshua Joseph, MD, associate professor of Endocrinology, Diabetes, and Metabolism at The Ohio State University College of Medicine in Columbus, and co-author of the Society perspective, points to the American Society of Nephrology’s recent re-evaluation of the use of race in the eGFR equation, and their published findings that the new equations that do not include race are more accurate. “It is important to examine the use of race in clinical algorithms through evaluating the science and encouraging research to fill the gaps to inform the best treatment and care of individuals with endocrine disorders to ensure that no harm is done via race-based algorithms,” he says.

Then there’s the minority tax — racial and ethnic minorities are often uncompensated for additional duties, often denied raises or promotions even after an increased workload. Pereira tells *Endocrine News* that this minority tax is an added burden minority individuals face due to underrepresentation in the health system. She explains that minority providers have this expectation and self-perceived responsibility to serve minority populations, focus research on health disparities, participate in organizational equity work, mentor minority trainees, educate non-minorities about health equity and racism, and serve as minority representatives in committees, workgroups, and so on.

“This work is most often un- or undercompensated and leaves less time for work that more directly leads to promotions, salary increases, and recognition by our peers,” Pereira says. “The solutions to the minority tax are to increase minority representation in the health workforce, and to appropriately acknowledge and compensate minority individuals for this added work. It is also necessary for non-minorities to join in the work of eliminating racism and health disparities.”

“The responsibility for training and education should not be uncompensated work falling on the shoulders of racial/ethnic and other minoritized faculty,” Joseph says. “These challenges are all of our challenges, and it is the work of all of us to advance equity. This journey will require open hearts and minds.”

Updating Antiracism Curriculum

Opening those hearts and minds will take some work. There might still be some out there who feel comfortable being “non-racist” or even “colorblind,” but those frames of mind simply won’t cut it anymore, not if there’s to be real change. This is



**Ruban Dhaliwal,
MD, MPH**



a country that has actively denied resources and opportunities to minorities (see redlining, for instance), and continues to do so.

“Claiming to be ‘non-racist’ implies that we as members of our society do not participate in any discriminatory practices that are still in place and play no role in perpetuating the situation,” Pereira says. “Practicing anti-racism means looking for those discriminatory practices and dismantling them, identifying our own implicit biases, and not acting on them, being ‘upstanders’ and not just standing by when we witness an injustice or an act of racism. In order to become a more just society, we must all practice anti-racism.”

Education will be crucial to preventing racism and bias from creeping into the healthcare system. “To avoid frameworks of colorblindness and empower future generations, structural competency must be included in the antiracism curriculum,” the Society perspective authors write. “Trainees need to be taught about redlining and discriminatory practices that have made racial/ethnic minority populations more vulnerable to lower socioeconomic conditions, poor quality of life, inadequate educational opportunity, interchanges with the criminal justice system, and substandard healthcare.”

Workplaces should strive to be more equitable by using antiracist policies and practices. The endocrinology leadership, endocrinology providers, clinical research coordinators, the research workforce, and clinical trial participants should reflect the populations served. The authors of the Society’s perspective write that healthcare organizations and institutions should measure and track not only racial/ethnic minority diversity but also measures of retention, promotion, and compensation specific to adult and pediatric endocrinology to reach the goal of an equitable workplace.

“Evaluating and addressing the effects of racism across the translational research spectrum, developing interventions for antiracism in the conduct of research, and increasing diversity in the research workforce and in clinical trial participation are all key to addressing racism in research,” the authors go on to write.

Health disparities are one of the most pressing issues facing science and medicine. As endocrinologists, we have a responsibility to take actions to advance equity in clinical care and research in our discipline and for our patients. The Endocrine Society has incorporated its commitment to diversity, equity, and inclusion into all facets of its education and advocacy initiatives and programming.”

— RUBAN DHALIWAL, MD, MPH,
RESEARCH PHYSICIAN, MASSACHUSETTS GENERAL
HOSPITAL, BOSTON.

**Licy L. Yanes
Cardozo,
MD**



To fix racism we need a strong and sincere commitment from all members of the Society. Racism is a problem for and from all of us. Education and resources are key in generating the changes that will benefit all of us. Eliminating racism in medicine will not only improve health outcomes but will also improve the quality of life of all of us."

— LICY L. YANES CARDOZO, MD,
ASSISTANT PROFESSOR OF PEDIATRICS, DIVISION
OF PEDIATRIC ENDOCRINOLOGY AND DIABETES,
DEPARTMENT OF PEDIATRICS, PENN STATE HEALTH
CHILDREN'S HOSPITAL, PENN STATE COLLEGE OF
MEDICINE, HERSHEY.

"Training regarding implicit bias, cultural and structural competencies, microaggressions, mistreatment, and racism in healthcare and science are vital for educating healthcare professionals and scientists to advance the treatment and care of patients with endocrine disorders," Joseph says. "The gains in training will be enhanced by policies to ensure implicit biases do not hinder care and harm patients."

An Ethically Different Path Forward

The authors of the JCEM article, "Eradicating Racism: An Endocrine Society Policy Perspective," conclude that the healthcare system must go beyond declarations and plan an ethically and structurally different path to a new future and move forward to eradicate racism in healthcare. "Our cohesive efforts need to be conscious, deliberate, and additive to disrupt the reductive nature of race/ethnic labels and to create an avenue for equitable health for all individuals," they write.

"[The perspective] acknowledges that although eradicating racism is a tall hill to climb, we all have a part to play in identifying and remedying inequity in education, research, and care," Scott says. "The piece reveals relevant opportunities for the endocrine community to elevate equity by recognizing and engaging different communities and leading inclusively."

Pereira says that the Society should continue to focus on two areas: increasing diversity and increasing awareness. "Increasing the diversity of the workforce, and particularly minority representation among health system leaders, will expand our ability to see people as individuals and improve the care we provide to peoples of color," she says.

Pereira points to the Society's FLARE and EXCEL programs in its efforts to diversify the endocrinology workforce, as those programs support the career development of underrepresented minority endocrinology researcher trainees and provide leadership training to clinical endocrinology trainees and early-career clinicians, respectively.

"Increasing awareness of systemic racism and its impact on the health of our communities will compel more of us to join efforts to identify and eradicate racist practices and policies," Pereira says. "Increasing the awareness of our own implicit biases can help us question our own actions and maybe stop ourselves from acting on those biases."

In Columbus, Joseph, colleagues at The Ohio State University, and the African American Male Wellness Agency led a clinical trial focused on improving Life's Simple 7 (glucose, cholesterol, blood pressure, body mass index, physical activity, diet, and smoking) among Black men that Joseph says the participants affectionately called Black Impact. The six-month study incorporated health education, physical activity, and referrals to address social needs and led to significant reductions in body weight, body mass index, cholesterol, glucose, and an overall improvement in healthy diet and cardiometabolic health.

"The key to the program was not only understanding the subpopulation through research and community engagement but inviting the subpopulation to the table as equal partners to co-develop and co-design the intervention in a process that included bi-directional trust-building," Joseph says.

Data Don't Lie

Endocrinologists are especially well-positioned to address these issues and confront these problems. After all, endocrinologists typically choose that specialty because they like solving complex problems. “The systems and pathways that we research and treat are complex, and the challenges many of our patients face are enormous,” Joseph says. “The impact of racism (internalized, interpersonal, institutional, and structural) is complex, and eradicating racism will require the same ingenuity and innovation that we use to research and treat the complex disorders that make up the field of endocrinology.”

Pereira agrees, as endocrinologists can draw on their wealth of knowledge and experience used to approach and navigate complicated, even labyrinthine, processes. “We have experience thinking about metabolic diseases that have effects throughout the body, endocrine organs that form feedback loops to regulate each other, aggressive endocrine cancers that are difficult to treat,” she says. “As endocrinology researchers, we work in interdisciplinary teams to better understand complex processes. As endocrinology educators, we make complex topics easier to understand, and we challenge trainees to go beyond our own achievements. We must use all these skills and work in partnership with others to identify and eliminate the many processes and practices that continue to support unequal treatment of minority individuals, perpetuating health disparities.”

In Denver, Pereira is the founder and director of a community-based lifestyle intervention program for Spanish-speaking Latinos. This highly successful program, implemented in partnership with the community organization Vuela for Health, has served more than 2,500 participants, supporting them in making healthy lifestyle choices to prevent obesity and diabetes. Pereira also oversees the endocrinology team at the safety-net hospital system Denver Health and leads Denver Health's diabetes quality improvement efforts. Her work has taught her that collaboration and engagement are crucial in equity work. “Equally important is the integration of equity work into existing systems and processes to ensure sustainability,” she says. “A perfect example of such integration is the Society's incorporation of diversity and equity in every Society committee's charge. This integration will allow equity work to be embedded in all aspects of the Society's work now and in the future.”

As Scott says, eradicating racism is a tall hill to climb, but with everyone coming together to sincerely and adamantly fight these injustices, maybe a metaphorical gondola can be installed on that tall hill. And sure, there may still be some out there who consider these fringe problems, but the data showing just how detrimental these racial and ethnic disparities are for healthcare are clear. The time is now to step up. The time is always now.

“We have plenty of data that show that social disparities play a fundamental role in poor health outcomes in endocrinology and medicine,” Yanes Cardozo says. “To fix racism we need a strong and sincere commitment from all members of the Society. Racism is a problem for and from all of us. Education and resources are key in generating the changes that will benefit all of us. Eliminating racism in medicine will not only improve health outcomes but will also improve the quality of life of all of us.” **EN**

Rocio Pereira, MD



As endocrinology researchers, we work in interdisciplinary teams to better understand complex processes. As endocrinology educators, we make complex topics easier to understand, and we challenge trainees to go beyond our own achievements. We must use all these skills and work in partnership with others to identify and eliminate the many processes and practices that continue to support unequal treatment of minority individuals, perpetuating health disparities.”

— **ROCIO PEREIRA, MD**, ASSOCIATE PROFESSOR OF MEDICINE, UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS, DENVER.

— BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. IN THE FEBRUARY ISSUE, HE WROTE ABOUT ADVANCES IN PEDIATRIC GROWTH HORMONE DEFICIENCY TREATMENT.



More *Questions* Than *Answers:*

Q&A with Terry J. Smith, MD

Endocrine News talks to Terry J. Smith, MD, the 2022 Gerald D. Aurbach Laureate for Outstanding Translational Research, who discusses his career focusing on Graves' disease, the pharmaceutical he helped develop, and what advice he has for young researchers.

BY GLENDA FAUNTLEROY SHAW

Early in medical school, Terry J. Smith, MD, had more questions about thyroid disease than his professors had concrete answers. When he encountered his first patient with Graves' disease, more unanswered questions sparked a curiosity that would evolve into a successful and productive career in thyroid research.

Smith has been awarded the 2022 Gerald D. Aurbach Award for Outstanding Translational Research — an award recognizing outstanding contributions to research that accelerate the transition of scientific discoveries into clinical applications. As the Frederick G.L. Huetwell Professor in Ophthalmology and Visual Sciences and professor of internal medicine at the University of Michigan Medical School in Ann Arbor, Mich., he and his team have mapped the mechanisms involved in tissue remodeling occurring in thyroid-associated ophthalmopathy (TAO), a disfiguring and potentially blinding disease. Their discoveries have led to the use of teprotumumab — the first FDA-approved drug to treat TAO.

Endocrine News spoke with Smith to learn more about his research and asked his advice for young researchers who, themselves may have more questions than answers.

Endocrine News: Dr. Gerald Aurbach was the Society's 68th president and a renowned researcher and clinician. Can you share your thoughts when you heard the news of your honor?

Terry Smith: The acknowledgement of our work by the scientific and medical communities is gratifying. It in many ways validates the entire road trip.

EN: How did the study of Graves' disease become the pinpoint of your life's work?

Smith: I was lucky enough, as a beginning freshman medical student, to be adopted by a thyroid researcher. He raised a number of important questions that got me thinking about the thyroid as an important regulator of metabolism, growth, and energy turnover. Then, later in my medical school experience, I encountered a patient with Graves' disease. I asked a few questions of my teachers and did not get what I felt at the time were satisfactory answers. For a young student, this can lead to more questions. I gleaned that our understanding of Graves' disease and other autoimmune diseases really was inadequate. Maybe that



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Many people are primarily interested in perpetuating pat notions about the way things work. We must continue preparing young minds ... **that is, individuals who are willing and able to think outside the box. It's not the loudest voice in the room that should necessarily hold sway.**”

— TERRY J. SMITH, MD, FREDERICK G.L. HUETWELL PROFESSOR IN OPHTHALMOLOGY AND VISUAL SCIENCES; PROFESSOR, INTERNAL MEDICINE, UNIVERSITY OF MICHIGAN MEDICAL SCHOOL, ANN ARBOR.

explained why there weren't particularly effective or safe treatments. The topic became quite intriguing, and I was off to the races.

EN: In January 2020, you and your team were granted FDA approval for teprotumumab, the first approved drug to treat TAO. Somewhere between 30% and 50% of people with Graves' disease show signs of TAO. How does teprotumumab help these patients?

Smith: It treats bulging eyes, double vision, pain, inflammation, and eyelid swelling. All of these manifestations are dramatically improved in many patients treated with the drug. Use of the drug in TAO grew out of our better understanding of disease mechanisms. We discovered several molecular and cellular events involving the insulin-like growth factor I receptor that appeared to be connected to TAO development. Instead of using medications that may have broad and relatively untargeted actions, we were armed with considerably more precise insights into the disease and how it develops. That information came from a couple of decades of research, both in our lab at UCLA and the University of Michigan, and from the contributions of other investigators around the world. I hasten to add that this entire success — the development of the drug and the many mechanistic insights — was a group effort. We also had a lot of luck; we guessed correctly a few times, and voila!

EN: What words of wisdom do you share with young researchers, words of advice that you have gleaned from your years of experience?

Smith: I stress the importance of not being afraid of asking provocative questions that might be dismissed by others, especially by those who are more senior. It's important to identify substantial problems and to then pursue these with well-reasoned studies potentially leading to their solutions. One should always apply stringent controls and use fact-based logic in solving those problems.

Many people are primarily interested in perpetuating pat notions about the way things work. We must continue preparing young minds ... that is, individuals who are willing and able to think outside the box. It's not the loudest voice in the room that should necessarily hold sway. **EN**

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



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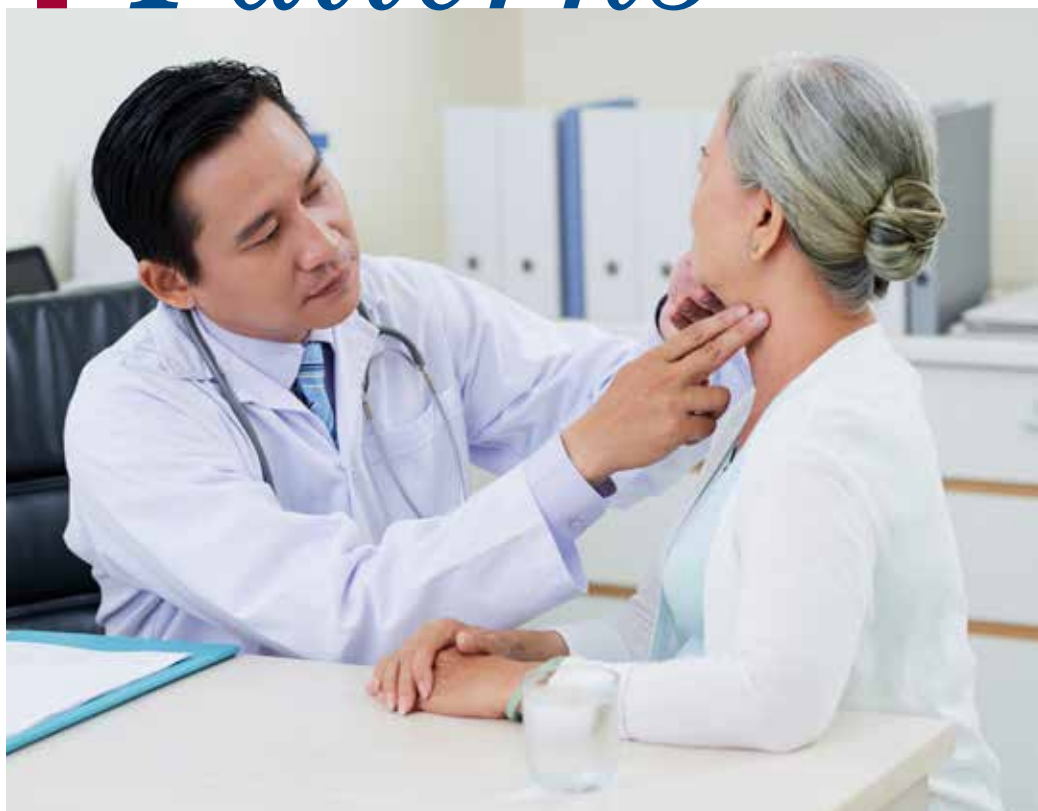
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How Thyroid Nodule Tests Can Eliminate Needless Procedures

New research of genetic testing for thyroid nodules shows that they can make a substantial difference in patient outcomes, not to mention eliminating the need for unnecessary surgeries and biopsies. Then why aren't more patients choosing to be tested?

Let's face it: No one likes taking tests. Then again, no one particularly enjoys going under the knife either. For years, thyroid nodules have confounded patients and the physicians who treat them, but here in 2022, research is showing that commercially available molecular tests have been getting better and better at helping people avoid unnecessary diagnostic surgeries to determine a thyroid nodule's malignancy. On the hierarchy of "Things People Wish to Avoid," surgery outranks taking a test.

About 65% of people will be diagnosed with a thyroid nodule by the time they're 60 years old. Each year, around 565,000 people with thyroid nodules undergo fine-needle aspiration (FNA) biopsies to determine whether those nodules are malignant. About a third of those biopsy results are indeterminate, and most of the patients with indeterminate nodules are directed to undergo diagnostic surgery, even though those surgeries reveal a benign nodule 70% to 80% of the time.

Toward the end of last year, a paper appeared in the *Journal of the Endocrine Society* (JES), in which researchers looked at two genetic tests used to evaluate indeterminate thyroid nodules — Veracyte, Inc.’s Afirma Gene Expression Classifier (GEC) and the next-generation Afirma Genomic Sequencing Classifier (GSC). The GSC replaced the GEC in 2017, as it was able to perform all the functions of its predecessor, as well as test for gene mutations and more accurately identify benign Hurthle cells, which can be difficult to discern from cancer.

The researchers, led by Whitney Goldner, MD, a professor in the Department of Internal Medicine, Division of Diabetes, Endocrinology, and Metabolism, at the University of Nebraska Medical Center in Omaha, write that the implementation of the GEC and subsequently the GSC resulted in higher benign call rates (BCR) and improved positive predictive value (PPV). However, not all patients undergo molecular testing to help them make the decision whether to have surgery.

“We started this study to evaluate the performance of molecular testing in the indeterminate thyroid nodules in our institution and compare it to previously published institutional studies,” Goldner and the study’s first author, Preethi Polavarapu, MBBS, a clinical fellow at the University

“Our analysis showed a significant improvement in the benign call rate with the Afirma GSC as compared to no molecular testing, as well as a significant increase in confirmed malignancies among those patients who did go to surgery when utilizing the test.”

— WHITNEY GOLDNER, MD, PROFESSOR, DEPARTMENT OF INTERNAL MEDICINE, DIVISION OF DIABETES, ENDOCRINOLOGY, AND METABOLISM, UNIVERSITY OF NEBRASKA MEDICAL CENTER, OMAHA.

of Nebraska Medical Center, tell *Endocrine News*. “Initially, we used Afirma GEC for testing, and then switched to GSC when it became available. We wanted to compare these two tests to each other as well as compare them to those that did not have molecular testing.”

Patient Hesitation to Testing?

For this study, Goldner and her team at the University of Nebraska Medical Center and researchers at the VA Nebraska — Western Iowa Health System retrospectively analyzed 468 cytologically indeterminate thyroid nodules from January 2013 to December 2019 to assess and compare how use of the Afirma GSC (n=124) and the original Afirma GEC (n=71) impacted patient care. The teams also evaluated patient and nodule characteristics of those who did not undergo molecular testing (n=273) to determine the impact of other variables on the evaluation and management of indeterminate thyroid nodules.

They found that the Afirma GSC identified 30% more nodules as benign compared to the GEC, and that use of the Afirma GSC resulted in 41% fewer surgeries compared to patients with no molecular testing (40% vs. 68%, respectively). Additionally, when surgery was performed, patients deemed



“suspicious for cancer” by the Afirma GSC were 95% more likely to have cancer compared to those who had no molecular testing (39% vs. 20%, respectively).

Goldner and Polavarapu say they were surprised by the number of people who did not undergo genetic testing to aid in their decision making. “When we evaluated this further, we found that factors such as larger nodule size and constructive symptoms were more common in the ‘no molecular testing’ group and this group had higher rates of surgery,” they say. “It is possible that patients who already were planning to have surgery for these reasons declined molecular testing as it would not change clinical management.”

The teams also found that time to surgery was longest with the GEC and lowest with no molecular testing. Goldner and Polavarapu explain that patients who chose not to get tested had already made the decision to have surgery, so they’re able to proceed directly to the operating room. “When GEC was initially offered, it was only offered at our institution AFTER someone had already had an indeterminate thyroid nodule biopsy,” they say. “This required a second clinical visit and repeat biopsy, usually at least one month after the first biopsy. In the later years of GEC and with all of GSC, we collected samples for reflex molecular testing in the event of an indeterminate thyroid nodule biopsy, which eliminated the need for a second biopsy, which shortened the decision-making time and allowed patients to go to surgery sooner.”

Surgeons Versus Endocrinologists

The authors of the JES paper also looked at other factors that might have played into whether a patient would opt for diagnostic surgery, evaluating the differences between those in the “no molecular testing” cohort who did and did not have surgery. “Unlike the comparison between groups for or against molecular testing, among those who did not undergo molecular testing, there was a difference between those who underwent surgery and those who did not regarding ultrasound TIRADS score and cytology,” the authors write. “Those who underwent surgery had higher TIRADS scores and were more likely to have Bethesda IV (FN or HCN) cytologic diagnosis.”

“The [Afirma GSC] test demonstrated high sensitivity and [negative predictive value], and we saw enhanced specificity and PPV with the GSC test as compared to the GEC, which is all consistent with prior studies. **Overall, these results demonstrate the value and accuracy of GSC testing in the diagnostic management of cytologically indeterminate thyroid nodules.**”

— WHITNEY GOLDNER, MD, PROFESSOR, DEPARTMENT OF INTERNAL MEDICINE, DIVISION OF DIABETES, ENDOCRINOLOGY, AND METABOLISM, UNIVERSITY OF NEBRASKA MEDICAL CENTER, OMAHA.

Polavarapu, et al., also point out that type of provider predicted whether someone would choose the surgical route. Forty-one percent of patients who saw an endocrinologist did not undergo surgery, while 62% of patients who saw a surgeon chose to have surgery. Patients who saw a provider other than an endocrinologist or surgeon were more likely to avoid surgery, the authors write.

And while those numbers may speak to a provider’s level of expertise either way, Goldner and Polavarapu say they did not look at those reasons specifically, and that’s a topic that warrants further exploration. “It is possible that patients who already had an indication for surgery presented to the surgeons directly, instead of starting with the endocrinologists,” the authors say.

A Decade of Upgrades

Progressive improvements have been made to these commercially available tests over the past 10 years; the GEC had already demonstrated reduced rates of unnecessary

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surgeries and its replacement, the GSC, improved on those numbers. Goldner and Polavarapu say they are happy to see that their results were in line with previously published data and that patients appreciate that molecular tests are improving and reducing the need for unnecessary surgeries. “Thyroid nodules are extremely common and to send everyone with indeterminate thyroid nodules to surgeries will lead to unnecessary surgeries,” they say. “Hence, it is very important to predict accurate malignancy risk to guide long-term management.”

Goldner and Polavarapu say that the differences between groups with and without molecular testing proved interesting, and those differences may require further study. “Further studies are needed to understand the practical application of these molecular markers preoperatively in cytologically indeterminate thyroid nodules as not all patients opt for the use molecular testing for further evaluation in this clinical scenario,” say the authors in the JES paper’s conclusion.

For Goldner and Polavarapu, it will be important to evaluate which patients need molecular testing to guide clinical decision making. “Is molecular testing needed for every individual,” they ask, “or is there any subset of individuals who are best suitable for molecular testing?”

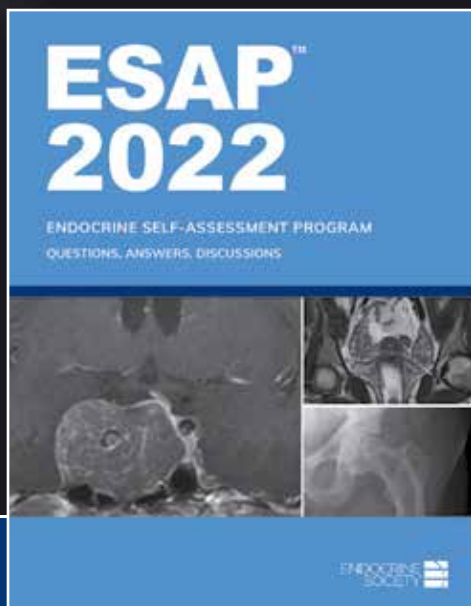
Indeed, future studies may speak to the need for personalized care but for now, this study reinforces the clinical utility of molecular testing to reduce unnecessary surgeries in patients with indeterminate thyroid nodule cytology, as compared to the use of no molecular testing.

“Our analysis showed a significant improvement in the benign call rate with the Afirma GSC as compared to no molecular testing, as well as a significant increase in confirmed malignancies among those patients who did go to surgery when utilizing the test,” Goldner says. “Additionally, the test demonstrated high sensitivity and [negative predictive value], and we saw enhanced specificity and PPV with the GSC test as compared to the GEC, which is all consistent with prior studies. Overall, these results demonstrate the value and accuracy of GSC testing in the diagnostic management of cytologically indeterminate thyroid nodules.” 

— BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. HE RESEARCHED, COMPILED, AND WROTE THE 2021 PROGRESS REPORT IN THE DECEMBER ISSUE.

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Endocrine Society Advocates for Increased Funding for NIH Research, CDC

In another political nailbiter, with less than 24 hours remaining before all federal government funding would expire and cause a government shutdown, the U.S. Senate cleared legislation last month to continue funding the federal government through March 11.

The temporary spending bill is the third such short-term funding bill for fiscal year (FY) 2022, which officially began on October 1, 2021, and keeps the government operating at current funding levels. This time, however, the chairs and ranking members of the powerful House and Senate Appropriations Committees announced that they have struck an agreement on a large framework to start writing actual funding legislation for the rest of the fiscal year and expect to have an omnibus legislative package containing all 12 appropriations bills before the new March 11 deadline.

As this issue of *Endocrine News* went to press, no specific details on funding levels were available, but Senate Appropriations Committee Chair Patrick Leahy (D-VT) indicated that the deal will pave the way for “the biggest increase in nondefense programs in four years.” Congressional staff familiar with the negotiations also leaked that the agreement is to have “parity” or equal increases for defense and nondefense spending. This is very hopeful news for Endocrine Society health-related programs, which all fall into the nondefense category not favored by Republicans.

Throughout the appropriations cycle, the Endocrine Society has been a vocal advocate for increased federal funding for the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC). The NIH provides the largest source of federal funding for biomedical research, and the CDC

houses several diabetes and obesity prevention programs as well as bone and women’s health programs. The Society has met with congressional offices, testified before Congress, and conducted several grassroots campaigns educating Congress about the value of endocrine research and urging increases in endocrine-

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related programs. Most recently, the Society also coordinated efforts with other diabetes and research organizations to argue the importance of finalizing a final appropriations bill rather than rely on short-term measures. We also met with directors of individual NIH institutes to discuss priority areas for research support.

The next step after passage of a final omnibus appropriations process will be to start over with advocacy for FY 2023 appropriations, which the Society also plans to take a major role. For the latest details on federal funding, please visit: endocrine.org/advocacy.

Biden Continues Focus on ARPA-H, Cancer Moonshot as Francis Collins Takes on New Role



Francis S. Collins, MD, PhD, the former director of the National Institutes of Health, delivers the Presidential Plenary speech, "Translating Whole Genome Data to Disease" at ENDO 2019 in New Orleans, La.

President Joe Biden has named retired National Institutes of Health director Francis Collins to be the president's top science adviser until permanent leadership is nominated and confirmed. Eric Lander who formerly led the Office of Science and Technology Programs (OSTP) and held the cabinet-level position of science adviser resigned after it became public that an internal investigation had found that he had bullied and demeaned staff.

The White House says the selection of Collins would help the administration double down on the president's cancer moonshot project and the creation of a new scientific agency to support research, the Advanced Research Projects Agency for Health (ARPA-H).

Biden also promoted Alondra Nelson, the current deputy director for science and society at OSTP as the temporary director of the office of science and technology

In his new role, Collins will serve as acting science adviser to the president and acting co-chair of the President's Council of Advisors on Science and Technology. Even with his appointment, Collins will continue to run a research lab at the NIH, which he has been involved with since 1993.

Meanwhile, the Biden administration still has not selected anyone to take Collins' top spot at the NIH.

The Endocrine Society has contributed to discussions about the development of the new health agency and testified twice last year about how endocrinology and endocrinologists could play critical roles at ARPA-H. The Society also has met with the administration about the cancer moonshot and the importance of including endocrine science, endocrine cancers, and endocrine researchers in the program. ^{EN}

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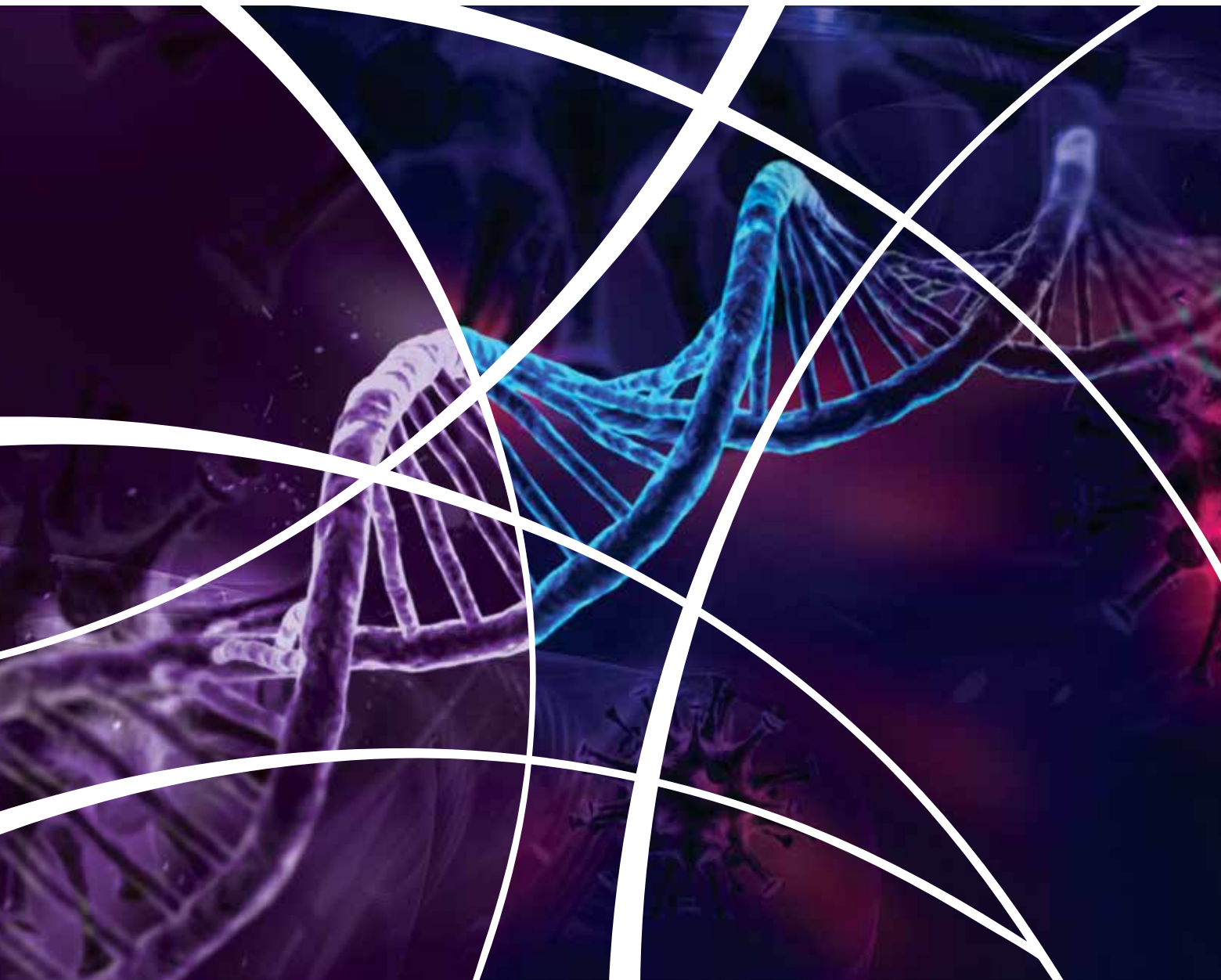
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