

SEPTEMBER 2019

THE LEADING MAGAZINE FOR • ENDOCRINOLOGISTS

Endocrine news

INTERNATIONAL

In the **HOUSE**

**How Inpatient
Diabetes
Teams Can
Improve Patient
Outcomes and
Reduce Costs**

Becoming more common in academic institutions, diabetes management teams can play an important role in community hospitals by reducing lengths of stay and readmissions.

RACIAL BIAS:

Ethnicity and its impact on endocrine health

TRIAL & ERROR:

When a research study doesn't turn out as planned



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Hormone Science to Health

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CLINICAL PRACTICE GUIDELINES

FROM THE ENDOCRINE SOCIETY

Treatment of Diabetes in Older Adults

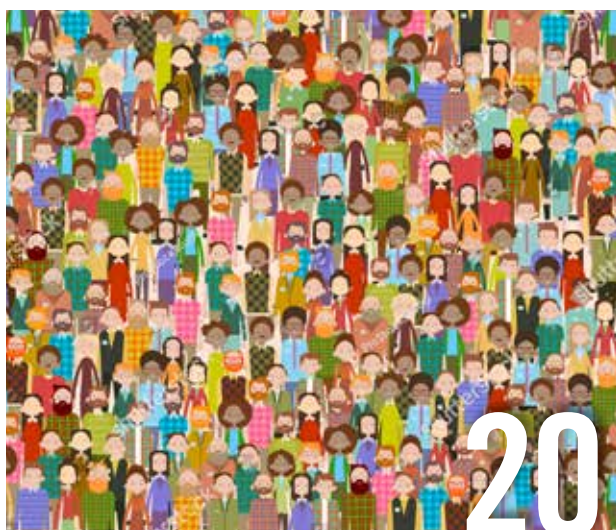
A NEW STANDARD FOR CARE

Get the latest recommendations and treatment strategies, which take into consideration the overall health and quality of life of older individuals with diabetes, defined as age 65 or older.

Recommendation Highlights:

- ▶ Simplify medication regimens and tailor glycemic targets in older adults with diabetes and cognitive impairment (i.e. dementia) to improve compliance and prevent treatment-related complications.
- ▶ Target blood pressure levels of 140/90 mmHg to decrease the risk of cardiovascular disease outcomes, stroke, and progressive chronic kidney disease.
- ▶ Establish clear blood sugar targets for older adults with diabetes in hospitals or nursing homes while avoiding hypoglycemia.

**READ THE GUIDELINE AT
[ENDOCRINE.ORG/2019DIABETES](https://www.endocrine.org/2019diabetes)**



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Women's Reproductive Health

www.endocrine.org



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Lauding the Changing of the Guard at JCEM

As we enter the remaining few months of what has been a successful 2019 for the Endocrine Society, we begin to look forward to all that lies ahead in 2020. All of our Society's journals continue to advance our mission to be the trusted source for new knowledge and perspectives in endocrine science and practice. In this letter, I note the remarkable ongoing success of our premier clinical publication, *The Journal of Clinical Endocrinology & Metabolism* (JCEM), as it undergoes a changing of the guard of the editor-in-chief.

We thank Paul Robertson, MD, and his editorial team as he completes his term as editor-in-chief at the end of 2019, for holding JCEM to the highest standards and producing consistently top-quality science, leading in overall citations among all endocrinology and metabolism journals worldwide. We welcome Paul Stewart MD, FRCP, FMedSci, as the new editor-in-chief of JCEM, accepting new submissions starting September 2019. He will lead JCEM into the future with his own distinguished editorial team.

Paul Stewart looks forward to receiving submissions from Society members. He writes that his observations and plans for the journal include the following:

"Medicine is advancing at an unprecedented pace through technology-driven increased understanding of disease pathogenesis, diagnostics, novel therapies, and improved patient outcomes. Whilst clinical practice remains relatively siloed through a largely organ-based approach (thyroid, pituitary, adrenal, pancreas, etc.), the endocrine and metabolic basis for disease is agnostic; endocrinology is all around us underpinning many of tomorrow's major health challenges — ageing and frailty, sarcopenia, cognitive decline, cancer, hypertension, and the metabolic consequences of a 21st century Western lifestyle. It has no geographical boundaries. With its established reputation, JCEM is ideally positioned to become the global lead in the ongoing development of endocrinology,

driving research quality and impact and education to new as well as existing clinical audiences, for example, oncologists, gerontologists, rheumatologists, and cardiologists.

"JCEM must remain an international journal of excellence always reaching out to new audiences. Without eroding the strong submission base from largely 'organ/disease-based' categories, the journal must do more in terms of developing new readers/potential authors in emerging areas and with tangible international outreach. We will target highly cited authors, actively seek submissions from highly cited investigators, and practice changing clinical trials with a focus on translation. Using data in the public domain, and in-house analyses, highly cited authors will be solicited for contributions from them/their research groups across the globe. Other strategies will target more junior clinical researchers, through, for example, externally funded research fellowships from UK MRC, Europe ERC, Australia NHMRC, and USA NIH, all of whom are excellent researchers establishing independent research groups in areas of contemporary science.

*"JCEM needs to be a fundamental platform across Endocrine Society activity. The annual **ENDO** meeting remains the flagship forum for state-of-the-art advances in our field, but partnership with JCEM remains limited. The world's leading scientists/clinicians delivering plenary lectures, prize winners, early-career researchers, meet the professors, late-breaking clinical trials could all be incentivized to submit content for JCEM.*

"Our Clinical Practice Guidelines are of high quality and should continue to be co-produced in partnership with JCEM.

"Enhanced synergy with Journal of the Endocrine Society will be explored in terms of defining the scope of both journals and to ensure an increased 'editorial transfer' across content categories to include case reports and letters.

"Multicenter submissions partnered with industry on average deliver a two-fold citation increase compared to single center studies. Numerous biotechnology and pharmaceutical companies are undertaking outstanding science, often in partnership with universities, that drives highly cited research. Rather than find reasons for not publishing with industry, and of course in full compliance with ethical guidelines, JCEM must forge closer relationships with key clinical research partners."

“

All of us at the Society look forward to the ongoing success of JCEM and our roles in that success, as members, authors, readers, and reviewers.

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"Finally, the journal must be progressive in exploring and implementing new media, social networking, and alternative communication platforms in order to attract and appeal to tomorrow's endocrinologists delivering future scientific agendas with a JCEM leadership that will be flexible in accommodating change. In turn, this will define its international outreach and appeal."

All of us at the Society look forward to the ongoing success of JCEM and our roles in that success, as members, authors, readers, and reviewers. ^{EN}

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



**Eunice Kennedy Shriver National Institute
of Child Health and Human Development**

Dear Colleagues,

We are writing to inform you of a new clinical trial designed to investigate the safety and efficacy of pegvisomant (Somavert), a growth hormone receptor antagonist, in children with gigantism. For this study, we seek patients 2-18 years of age with growth hormone excess and inadequate response to transsphenoidal surgery or radiation therapy, or patients deemed inappropriate candidates for these treatments.

The study involves the administration of pegvisomant for 12 months. Pegvisomant is already approved by FDA for medical therapy of acromegaly in adults and it is listed as one of the initial adjuvant medical therapies on acromegaly at the latest Endocrine Society Guidelines. The studies in adults have shown significant improvement of the IGF-1 levels after pegvisomant administration, with up to 97% of patients achieving normalization of the IGF-1 levels. However, there are currently no studies on the safety or efficacy of the medication in children.

During the study the patient will need to travel to the NIH for three visits (baseline, 6 months and 12 months). Additional blood tests and height/weight measurements are required between these visits.

NIH will cover the expenses for all the laboratory and imaging studies. Pfizer (who is one of the funding agents of the study) will provide the medication at no cost for the participant. Additional coverage of the expenses for travel to and from the NIH will be provided for the patient and one adult legal guardian.

We would be happy to discuss any further questions you may have. Please contact either of us at the email addresses below. We look forward to hearing from you.

Best wishes,

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FROM THE **EDITOR**

A Learning Curve

One of the many benefits of being the editor of *Endocrine News* is that with every issue and with every article therein, I learn something new. Thanks to the remarkable group of writers and reporters whose work appears on our pages every month, hopefully everyone reading this issue will be able to learn something new.

For example, did you know that there's no Food and Drug Administration-sanctioned pharmacological treatment for anorexia nervosa (AN)? I didn't until I read senior editor Derek Bagley's article "Trial & Error" (p. 38) that

“

Thanks to the remarkable
group of writers
and reporters whose work appears
on our pages every month, hopefully
everyone reading this issue will be able to
learn something new.

”

details a study of female AN patients where researchers were attempting to see if testosterone could be a viable treatment in this population. I won't tell you the results of their study — you'll need to discover that for yourself — but the article gives a unique perspective about the pursuit of a hypothesis.

Our cover story, "In the House" by Eric Seaborg on page 26, is another article that is chock full of interesting tidbits that I was not aware of prior to reading this story. The gist of the article is that hospitals with an endocrinologist on staff seem to have helped reduce lengths of hospital stays for patients with diabetes, as well as reduce the number of readmissions of these patients. More common in academic hospitals, these inhouse diabetes management teams could prove very useful to community hospitals.

SEPTEMBER 2019

Endocrine news

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

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www.cnjcreative.com

Prepress & Printing: **The Sheridan Group**
www.sheridan.com

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The mission of the Endocrine Society is to advance excellence in endocrinology and promote its essential and integrative role in scientific discovery, medical practice, and human health.

Endocrine News® is published 12 times a year by the Endocrine Society, 2055 L Street, NW, Suite 600, Washington, DC 20036
Phone 202-971-3636 • Fax 202-736-9708
www.endocrine.org

Print ISSN 2157-2089 Online ISSN 2157-2097
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Mihail Zilbermint, MD, director of endocrinology, diabetes, and metabolism, Suburban Hospital, Bethesda, Md., recounts his own experiences while he was moonlighting while training in endocrinology: “I noticed that patients with diabetes were getting suboptimal care at a time when diabetes management was becoming more complex.”

As many of you have probably noticed, **ENDO 2019** has proven to be “the gift that keeps on giving” in terms of late-breaking research in endocrine science from around the world and featured in *Endocrine News*. “Racial Bias” (p. 20) by Kelly Horvath combines two of the studies that were presented in New Orleans in March for an intriguing article on the effects ethnic disparities could play on certain endocrine outcomes. One study

looked at diabetes-related fracture risks in various ethnicities while the other study examined the difference in anxiety levels in Caucasian and African American women with polycystic ovary syndrome. The outcomes in both studies proved to be very interesting and, in once case, not that surprising, and gives even more credence to the impact of cultural mores in dealing with certain health issues.

My mother used to say that any day when you learn something new is not a day wasted. I’d like to think *Endocrine News* helps a lot of people have as few wasted days as possible. 

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

Letter to the Editor

In Eric Seaborg’s article, “Diabetes on a Budget” (Special CEU Issue, p. 28), it is stated that Novo Nordisk distributes human insulin to Walmart and CVS which sells it for \$25/vial. Walmart has been doing this for years, but I was surprised to see CVS listed. I checked last weekend and was told that it was \$178 per vial (without insurance). When I asked about the \$25/vial, her response was “I think that they are working on it.”

I suggest you check this out just before your next edition of *Endocrine News* and if not yet available, make such an announcement. When CVS does come through, make that announcement as well. You’ll prevent a lot of disappointed patients who might well resent their doctors for telling them that it is available for the lower price.

Mayer B. Davidson, MD
Department of Internal medicine
Charles R. Drew University of Medicine and Science, Los Angeles, Calif.

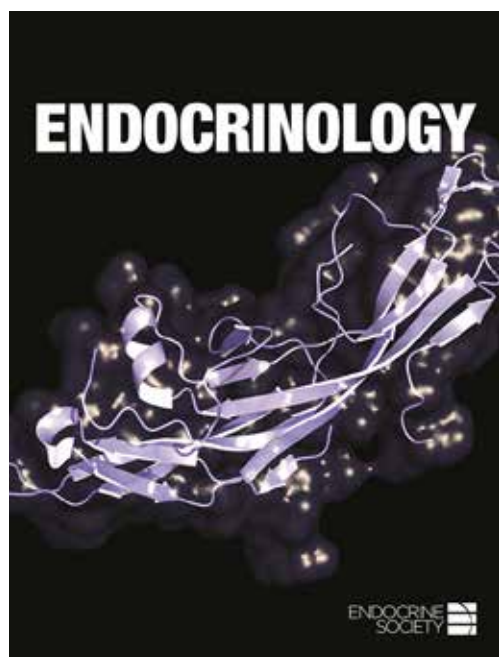
Editor’s Response:

After receiving Dr. Davidson’s email, *Endocrine News* reached out to CVSHealth to clarify. This is their response:

“In March 2017, CVS Health announced the ReducedRx Savings program. Importantly, the Reduced Rx prescription savings program lets patients purchase select medications for a reduced cost at more than 67,000 pharmacies nationwide, including but not limited to more than 9,700 CVS Pharmacy locations. Reduced Rx is offered at no cost to patients and it’s easy to use; simply present the Reduced Rx card at any participating pharmacy. The program is open to everyone, even if you have prescription coverage. It is through this program that CVS Health and Novo Nordisk offer Novolin R, Novolin N, and Novolin 70/30 human insulin at a cost of \$25 per 10-ml vial, which reflects a potential savings of as much as \$100 for cash-paying patients.”

Patients can visit **www.reducedrx.com** to learn more and enroll. 

Early-Career Reviewers Are Key to the Success of *Endocrinology*



Last year, *Endocrinology* began soliciting nominations for early-career endocrinologists to review papers for the Endocrine Society's (and endocrinology's) premier journal, an effort spearheaded by *Endocrinology*'s editor-in-chief Teresa K. Woodruff, PhD, of Northwestern University Feinberg School of Medicine in Chicago, and supported by the journal's associate editors.

"Endocrinology is a field of many hormones, many organs, many diseases, and many routes back to health. *Endocrinology* as a journal has many authors, many associate editors, many expert reviewers and now, many early-career

“

You see the quality of science and writing that gets submitted to a well-respected journal like *Endocrinology*, and you can use your experience in reviewing and reading the other reviews to improve both your science and writing.

”

referees,” Woodruff says. “My goal in starting the Early-Career Reviewer (ECR) program is to enable a way for our early-career Endocrine Society members to learn how to review papers and generate formal professional credit in the process. I believe that by bringing together the breadth of endocrine science with the breadth of endocrinologists, and by publishing this work in *Endocrinology*, we will more rapidly understand the functions of the hormones, organs to limit disease, and optimize health.”

These early-career researchers understand their responsibilities in reviewing these manuscripts — that the science is not only sound and accurate, but also the basis for future research. And they're making sure they learn from more established researchers in their field. “It's been a great opportunity to review papers thus far,” says Angelina M. Hernandez-Carretero, PhD, of the City of

Hope Beckman Research Institute in Duarte, Calif. “I enjoy sharing my expertise and gaining new insight while reviewing papers.”

This program also allows for early-career endocrinologists to learn from missteps or mistakes, making course corrections in order to grow as researchers. “It has been nice to compare my critiques and comments with those of the second, more established reviewer,” says Daniel J. Tobiansky, PhD, of the University of British Columbia in Vancouver, British Columbia, Canada. “Seeing discrepancies and critiques that I have missed while reviewing the paper has been the most informative.”

Endocrinology is once again soliciting nominations for early-career reviewers (either self-nominated or nominated by a colleague) for the 2020 academic year, accepting these nominations now through November 1, 2019. To be considered, researchers must have received a PhD and have published at least three papers, with one or more as first author or co-first author. This is a great opportunity for early-career researchers, since traditionally, there is little to no opportunity to practice reviewing skills before those in the early stages of their careers are invited to formally review a submission.

Formerly, principal investigators would ask postdoctoral fellows, and even some advanced graduate students, to help them review papers on their behalf. According to Mario G. Oyola, PhD, of the Uniformed Services University of the Health Sciences in Bethesda, Md., this behavior is less observed today, as the confidentiality agreement between the reviewer and the journal in question becomes increasingly honored and enforced. “Opportunities, such as those proposed by the [early-career review program], offer a platform on which trainees can not only learn the skills required for conducting a proper review, but also distill their personal reviewing style and perhaps even approach their own science from the more critical viewpoint of a reviewer,” Oyola says.

And the opportunities provided by this program are myriad. Early-career reviewers get to see what’s at the forefront of the endocrine sciences and read manuscripts that they wouldn’t have had the chance to otherwise. It also provides a valuable network of well-respected endocrinologists from which to learn. “You see the quality of science and writing that gets submitted

to a well-respected journal like *Endocrinology*, and you can use your experience in reviewing and reading the other reviews to improve both your science and writing,” Tobiansky says. And again, as Hernandez-Carterro says, this experience can

“

By bringing together the breadth of endocrine science with the breadth of endocrinologists, and by publishing this work in *Endocrinology*, we will more rapidly understand the functions of the hormones, organs to limit disease, and optimize health.

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help early-career researchers gain valuable insight into their own skills as scientists, even overcoming any self-doubt that can creep in. “As an early career investigator, there are many times where I question myself as an expert,” she says. “There was one experience I had reviewing a paper where I thought it was not worthy to be published. I questioned whether I was being too harsh but came to realize that the other reviewers felt the same way and it was unanimously rejected. Trust yourself and your expertise.”

-Derek Bagley

If you or someone you would like to nominate meet all requirements, please send your CV to Claudia Barrett at cbarrett@endocrine.org for consideration by November 1, 2019 to be a 2020 Early-Career Reviewer. For more information: https://academic.oup.com/endo/pages/early-career_researcher.

Endocrine Society & Avalere Health Partner to Prevent Low Blood Sugar in Older Adults with Diabetes

Endocrine Society and Avalere Health have launched a first-of-its-kind quality improvement intervention study in primary care practice to address the clinical gaps in identifying and treating hypoglycemia in older adults with type 2 diabetes.

The Society and Avalere have partnered with Pottstown Medical Specialists (PMSI), a physician-owned multispecialty group



in Pottstown, Pa., as the first primary care site for the quality improvement study. PMSI began enrolling patients in June.

An estimated 33% of adults ages 65 and older have diabetes. This age group is particularly at risk for hypoglycemia associated with treatment using insulin and/or sulfonylurea medications. Hypoglycemia can cause episodes of dangerously low blood sugar that can lead to seizures, coma, and even death. The U.S. Department of Health and Human Services has identified hypoglycemia as one of the top three preventable and measurable adverse drug events.

“Hypoglycemia can harm patients with diabetes and leads to significant healthcare costs. Our new quality improvement study is designed to evaluate tools and processes in primary care that can hopefully reduce the risk of hypoglycemia in older patients with type 2 diabetes,” says Jeffrey Boord, MD, MPH, Parkview Health, Fort Wayne, Ind., and chair of the steering committee that developed the Hypoglycemia Prevention Initiative. “PMSI’s strong commitment to providing patients with diabetes with self-management training is illustrated by their accreditation from the American Association of Diabetes Educators as a Diabetes Self-Management Education and Support program, make it an ideal partner for evaluating our hypoglycemia prevention interventions in a real-world primary care setting.”

The cost and frequency of hypoglycemia is high and is often under-recognized as a public health problem. In 2009,

hypoglycemia resulted in nearly 300,000 emergency room visits of adult patients with type 1 or type 2 diabetes. For Medicare beneficiaries in 2010, hospitalization resulting from hypoglycemia was associated with 30-day readmission and 30-day mortality rates of 18% and 5%, respectively.

The quality improvement study, HypoPrevent, evaluates a two-pronged intervention in primary care practice. The first part is a screening tool that identifies older patients with diabetes at risk of treatment-related hypoglycemia. The second is a clinical decision support tool that facilitates shared decision making with patients on ways to reduce their risk of hypoglycemia through the individualization of blood sugar goals and/or changes in medication management.

“We are committed to delivering the highest-quality medical healthcare through the coordination of properly planned, managed and utilized medical services,” says Wade Brosius, DO, PMSI medical director. “Our partnership with the Society and Avalere will help us improve patient safety through a systems-based approach and make a major impact on the burden of hypoglycemia among older adults with diabetes.”

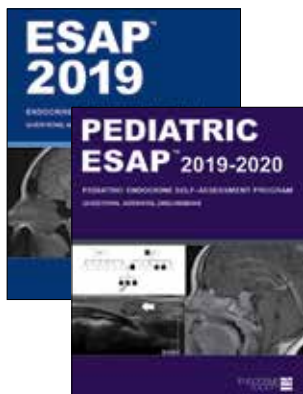
In conjunction with HypoPrevent, the Society formed a technical expert panel to develop quality measures — tools that help measure or quantify healthcare processes, outcomes, patient perceptions, and organizational structure — to reduce the risk of hypoglycemia in the outpatient setting. These measures will be designed to allow providers to identify areas for improvement and track the success of their efforts, ultimately leading to reduced hypoglycemia.

The Hypoglycemia Prevention Initiative is funded by Merck, Novo Nordisk, Lilly, Sanofi, and Abbott.

For more information: www.endocrine.org/hypoglycemia-prevention-initiative 

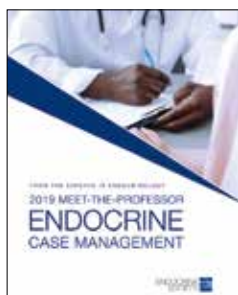
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BY DEREK BAGLEY
Senior Editor

TRENDS & INSIGHTS

Exposure to Common Chemicals in Plastics Linked to Childhood Obesity



“

Replacing BPA with similar chemicals does nothing to mitigate the harms chemical exposure has on our health.

”

Exposure to common chemicals in plastics and canned foods may play a role in childhood obesity, according to a study published in the *Journal of the Endocrine Society*.

Researchers led by Melanie Jacobson, PhD, MPH, of the NYU School of Medicine in New York, point out that bisphenol A (BPA) is already one of the best-known synthetic chemical obesogens. It enlarges adipocytes and enhances differentiation from mesenchymal cells to adipocytes; it inhibits adiponectin function, and it is a synthetic estrogen



and thereby can have sex-specific effects on body mass. And now there are two common analogues to the much-maligned BPA — bisphenol S (BPS) and bisphenol F (BPF) that have shown estrogenic activity. “Further, BPS has been shown to promote preadipocyte differentiation, raising the possibility that these BPA replacements may induce the same obesogenic effects in humans,” the authors write.

“This research is significant because exposure to these chemicals is very common in the United States. BPS and BPF use is growing because manufacturers are replacing BPA with these chemicals, so that is contributing to the frequency of exposure,” Jacobson says. “Although diet and exercise are still understood to be the main drivers of obesity, this

research suggests that common chemical exposures may also play a role, specifically among children.”

In this study, researchers used data from the U.S. National Health and Nutrition Examination Surveys to evaluate associations between BPA, BPS, and BPF and body mass outcomes among 1,831 children and adolescents ages six to 19 years. Children who had greater levels of BPS and BPF in their urine were more likely to have obesity compared to children with lower levels.

Jacobson and her team write that these results should be interpreted with caution, as with previous studies in this realm. Correlation doesn’t mean causation. “The cross-sectional design precludes our ability to infer whether exposure to bisphenols may influence weight gain or obesity, or whether obese children may have greater exposures to or excretion of bisphenol compounds,” the authors write.

Still, the authors conclude that as BPA levels have declined over the years, BPS levels have increased, which means it’s possible that the associations between BPS and body mass could change as levels increase. “In light of this,” the authors write, “the potential health effects of BPS and other BPA replacement compounds should be monitored going forward, given that human exposure to these compounds is likely to continue to increase in the future.”

Findings: “In a previous study, we found that the predecessor chemical to BPS and BPF — BPA — was associated with a higher prevalence of obesity in U.S. children, and this study found the same trend among these newer versions of that chemical. Replacing BPA with similar chemicals does nothing to mitigate the harms chemical exposure has on our health,” Jacobson says.

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[HTTPS://ACADEMIC.OUP.COM/ENDOCRINESOCIETY](https://academic.oup.com/endoctrinesociety)

Researchers Develop Model to Characterize Cancer Stem-Like Cells in Advanced Endometrial Cancer

Characterizing cancer stem-like cells (CSCs) through patient-derived cancers cells (PDCs) and patient-derived xenograft models could help develop diagnostic and therapeutic options for advanced endometrial cancer (EnC), according to a study recently published in *Endocrinology*.

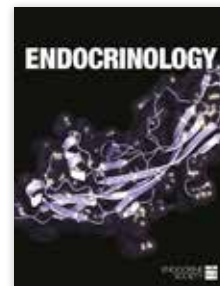
Researchers led by Satoshi Inoue, PhD, of the Tokyo Metropolitan Institute of Gerontology in Japan, point out that while low-grade and early-stage EnC usually has a favorable diagnosis, advanced EnC is difficult to cure. The authors write that the majority of EnCs are categorized as type I tumors. However, type II tumors are usually less well differentiated and include serous, clear cell, or squamous carcinomas. “The prognosis of type II tumors is poorer than that of type I tumors, as type II tumors are 10% to 20% of the cases of EnC but contribute to 40% of the deaths,” they write. “Type II tumors generally develop from atrophic endometrial tissues in older women and are mostly estrogen independent.”

In that case, molecular mechanisms underlying advanced pathophysiology remain to be elucidated, the authors continue. For this study, the researchers generated long-term culturable PDC spheroids from clinical EnC specimens and PDC-derived xenograft tumors in immunodeficient mice. “Of 21 cases of EnC, PDCs were established from surgical

specimens from three distinct patients, comprising two cases of endometrioid carcinoma (EnC-A and EnC-B) and one case of mixed carcinoma (serous and clear cell carcinomas, EnC-C),” the authors write.

They found that 17β -estradiol stimulated the growth of EnC-A PDCs with higher ER α expression along with the upregulation of inflammation- and immune-related genes, including *IL6*, *IL1B*, and *IL18*, suggesting a tumor-promoting mechanism of estrogen in estrogen-responsive EnC. However, that upregulation was suppressed by progesterone, which means that progesterone could serve an anti-inflammatory function in endometrial CSCs. “Interestingly, these inflammatory cytokines were also upregulated in secondary EnC-C PDCs prepared from liver and lung metastatic lesions compared with the primary EnC-C PDCs,” the authors write. “It is tempting to speculate that inflammatory cytokines may support metastasis of endometrial CSCs.”

Findings: Based on these findings, the authors conclude: “[O]ur PDC and PDX models established from EnCs would be useful in understanding the hormonal regulation and metastasis of CSCs and may help develop alternative diagnostic and therapeutic options for patients with advanced disease.”



“
It is tempting
to speculate
that inflammatory
cytokines
may support
metastasis
of endometrial
CSCs.

”

FDA Approves First Treatment for Severe Hypoglycemia That Can Be Administered without an Injection

“

There is no need to reconstitute it by injecting the liquid in the powder vial, shaking it, then drawing back the liquid in a hurry while the person with diabetes is passed out or suffering a very low glucose and unable to help him/herself.

”

In August, the U.S. Food and Drug Administration approved a nasal powder glucagon therapy for the emergency treatment of severe hypoglycemia that can be administered without an injection. Eli Lilly and Company is marketing the drug as Baqsimi. The therapy has been approved to treat severe hypoglycemia in patients with diabetes ages four and older.

Baqsimi is a powder administered into the nose and will come in a single-use dispenser that can be given to someone suffering from a severe hypoglycemic episode. “Until now, the only glucagon treatment available was a kit that required a number of steps including



reconstitution and an intramuscular injection,” says Henry Anhalt, DO, vice president of Medical Affairs at Science 37 in Los Angeles.

“There is no need to reconstitute it by injecting the liquid in the powder vial, dissolving it, then drawing back the liquid in a hurry while the person with diabetes is unconscious or suffering a very low glucose and unable to help him/herself,”

says Grazia Aleppo, MD, FACE, FACP, a professor of medicine at the Feinberg School of Medicine at Northwestern University in Chicago.

Injectable glucagon has been approved for use in the U.S. for several decades. The efficacy and safety of Baqsimi nasal powder glucagon to treat severe hypoglycemia was evaluated in two studies of 83 and 70 adults with diabetes, comparing a single dose of Baqsimi to a single dose of glucagon injection in causing a blood sugar response to insulin-induced hypoglycemia. Baqsimi adequately increased blood sugar levels. In a pediatric study of 48 patients older than the age of four with type 1 diabetes, similar results were observed.

“This is the first compact, portable, and ready-to-use rescue treatment for severe hypoglycemia,” Aleppo says. “Therefore, this treatment is groundbreaking because anyone will be able to deliver this rescue medicine; the previous injectable needed to be reconstituted and given intramuscularly, and very few people would feel comfortable giving this type of injection to a family member unless they were trained on how to give intramuscular injections. Also, potentially the patients could self-administer the nasal spray since it is a single dose and easier to administer than an injection.”

Baqsimi should not be taken by patients with pheochromocytoma or by patients who have insulinoma. Baqsimi should not be taken by patients with a known hypersensitivity to glucagon or the inactive ingredients found in Baqsimi, as allergic reactions may occur. Baqsimi also carries a warning that it should be used with caution by those who have been fasting for long periods, have adrenal insufficiency,



or have chronic hypoglycemia because these conditions result in low levels of releasable glucose in the liver. “Per the package insert, this medication is contraindicated in people who have pheochromocytoma because glucagon may stimulate release of catecholamines from the tumor and cause a rapid and dangerous increase in blood pressure,” Aleppo says. “[Baqsimi is also contraindicated] in people who are known to have an insulinoma (tumor secreting insulin) because it can transiently increase the glucose but also cause an exaggerated insulin release from an insulinoma and cause hypoglycemia afterwards.”

“People with liver disease and low glycogen stores (such as end stage liver disease) should not receive Baqsimi because glucagon would not work for them,” Aleppo continues. “Glucagon works by making the liver convert stored glycogen into glucose, which is released into the bloodstream to raise glucose levels; in severe liver disease the glycogen stores are very low and therefore not likely sufficient to convert to glucose and raise glucose effectively after glucagon.”

The most common adverse reactions associated with Baqsimi are nausea, vomiting, headache,

upper respiratory tract irritation, watery eyes, redness of eyes, and itchiness. Side effects of Baqsimi are similar to injectable glucagon, with the addition of nasal and eye-related symptoms, such as watery eyes and nasal congestion, because of the way the drug is administered. “People who are having a hypoglycemic episode should consume glucose orally if they are conscious. If the patient is unconscious or unable to safely eat, glucagon treatment is in order. In the event that glucagon is indicated, either injectable or nasal is administered. If administered when not indicated gastro-intestinal distress and vomiting may ensue,” Anhalt says.

“A new formulation of glucagon, much easier to use and less intimidating than an injection, is now available,” Aleppo says. “Endocrinology practices should stock it for patients in the event of severe hypoglycemic episodes taking place in their offices, patients should carry it with them when they are engaging in physical activity together with rapidly acting glucose sources (i.e., juice, glucose tablets, etc.), and it should be stocked in schools (where school nurses may need to administer it to children with diabetes).”

“

People who are having low blood sugar measurements but are capable of consuming glucose do not need to take the treatment, but no harm done if administered, although gastro-intestinal distress and vomiting may ensue.

”



“
Early
menarche
increases
the risk of
[type 2 diabetes],
whereas later
menarche
decreases
the risk.
”


Early Onset of Menstruation Associated with Higher Risk of Type 2 Diabetes

Early menarche is associated with a higher risk of type 2 diabetes, but body mass index (BMI) may mediate this association, according to a study recently published in *Menopause*.

Researchers led by Linlin Li, MD, PhD, of Zhengzhou University in Zhengzhou, Henan, China, analyzed more than 15,346 postmenopausal women in rural China, performing logistic regression and restricted cubic spline analysis to estimate the relationship between age at menarche and type 2 diabetes. “Mediation analysis was used to investigate whether the association was mediated by body mass index,” the authors write.

The researchers found that women who begin menstruating at an earlier age have a higher risk of developing type 2 diabetes. More specifically, each year of delay in menarche age correlated with a 6% lower risk of type 2 diabetes.

Although this is not the first study to suggest the association between menarche and diabetes, it provides added evidence regarding the increased risk, as well as the fact that BMI can partially mediate the association, and the proportion of that effect is 28%. “Early menarche increases the risk of [type 2 diabetes], whereas later menarche decreases the risk. The association seems to be partially mediated by BMI,” the authors conclude.

Findings: “This study of rural Chinese women indicates that the average age of menarche is delayed relative to Western countries at 16.1 years and is linked with lower risk of type 2 diabetes. Earlier onset of menses (14 years) was associated with diabetes in later life, likely driven by adult BMI. Other factors such as nutrition and BMI in childhood may also play a role in this association,” says Stephanie Faubion, MD, MBA, the North American Menopause Society medical director. 





**2019 Clinical
Endocrinology
Update/
Endocrine Board
Review**

**CEU East:
Miami, Florida,
Sept. 5 – 7, 2019**

**CEU West/
EBR: Seattle,
Washington, Sept.
17 – 21, 2019**

Once again this year, endocrine clinicians from around the world will have a choice about which Clinical Endocrinology Update (CEU) they choose. CEU East will take place in Miami while CEU West/Endocrine Board Review (EBR) will land on the West Coast in Seattle.

Miami's Intercontinental Hotel will be the location of the 2019 CEU East on September 5 – 7, and the Hyatt Regency Seattle will be where the joint meeting of the EBR and CEU West take place on September 17 – 21. Each year CEU brings together hundreds of endocrine clinicians for a unique learning experience and opportunities to network with expert faculty and colleagues. Attend the 71st CEU to receive the most trusted and clinically relevant information about recent advances in the field of endocrinology. The educational programming at CEU appeals to clinicians at all levels of practice, as well as fellows and other members of the clinical practice team.

Unlike other board preparation meetings, the Endocrine Society's EBR offers a comprehensive mock-exam format with case-based American Board of Internal Medicine-style questions forming the bulk of the presentations. Each section follows the ABIM blueprint for the board exam, covering the breadth and depth of the certification/recertification examination. Each case will be discussed in detail, with the correct and incorrect answer options reviewed. The mock exam appeals to endocrine fellows who have completed or are nearing completion of their fellowship and are preparing to take the board certification exam. Practicing endocrinologists may appreciate the EBR's comprehensive self-assessment of endocrinology either to prepare for recertification or to update their practice.

www.endocrine.org/ceu
www.endocrine.org/eb/2019

**The American Society for Bone
and Mineral Research (ASBMR)
2019 Annual Meeting**

**Orlando, Florida
September 20 – 23, 2019**

The ASBMR Annual Meeting boasts nearly 100 education sessions and 1,100 poster presentations in four information-filled days. The conference includes hands-on workshops focused on the latest technologies and research tools using model datasets, meet-the-professor sessions, the ASBMR Discovery Hall, an

exhibition hall that provides attendees with a truly immersive experience, with access to new science, new knowledge, new tools, and new contacts all in one location.

www.asbmr.org

**Assisted Reproductive
Technology (ART) World
Congress 2019**

**New York, New York
October 10 – 11, 2019**

The New Hope Fertility Center in New York will host the Assisted Reproductive

Technology World Congress bringing together researchers, physicians, clinicians, and specialists to discuss cutting-edge research and procedures in reproduction assistance. Topics of this year's conference will include oocyte and embryo cryopreservation — a critical view, the assessment of embryo ploidy using time-lapse imaging system and conventional morphological grading, automated and semi-automated vitrification and rewarming, and awakening follicles in POI women.

art2019.cme-congresses.com



The 37th Annual Meeting of The Obesity Society

Las Vegas, Nevada, November 3 – 7, 2019

The Obesity Society (TOS) will hold its 37th Annual Meeting at ObesityWeekSM—a unique, international event focused on the basic science, clinical application, surgical intervention, and prevention of obesity. ObesityWeek brings together world-renowned experts in obesity to share innovation and breakthroughs in science unmatched around the globe. This year, the international conference will focus on diabetes. Attendees will enjoy the diverse educational opportunities, networking events, and scientific synergies offered in sessions, and joint symposia with numerous peer-related organizations.

<https://obesityweek.com/>

Cardiometabolic Health Congress

Chicago, Illinois

October 11 – 13, 2019

CMHC is the largest, U.S.-based, multidisciplinary conference that is solely focused on the management of cardiometabolic risk and the prevention of cardiovascular and metabolic disease. This event allows today's busy healthcare professionals a uniquely exclusive opportunity to learn, internalize, and integrate real-world solutions into their toolboxes, and ultimately, their clinical practices and patient care.

www.cardiometabolicehealth.org/2019/chicago-14th-annual-cmhc.html

INTERNATIONAL ITINERARY

Pisa International Diabetic Foot Courses

Pisa, Italy, October 2 – 5, 2019

The Pisa International Diabetic Foot Courses are based on the knowledge and structure of treatment offered by the specialized diabetic foot clinic at the University Hospital of Pisa. The courses are used as a basis for building up an international educational network and for raising political awareness of the challenges related to treatment and prevention of the diabetic foot. By combining lectures from different specialists and individual training in the clinic, the courses offer insight into both the theory of the field and the practical methods used in the clinic.

www.diabeticfootcourses.org

EndoBridge 2019

Ayatall, Turkey, October 24 – 27, 2019

Jointly organized by the Endocrine Society, European Society of Endocrinology, and the Society of Endocrinology and Metabolism of Turkey, EndoBridge focuses on “bridging the world of endocrinology” and will provide a comprehensive update in the field of endocrinology. This meeting is designed for the clinical endocrinologist. The official language of the meeting is English, but simultaneous translation will be available in Russian, Arabic, and Turkish.

<http://endobridge.org>

International Prader-Willi Syndrome Conference

Havana, Cuba, November 13 – 17, 2019

The 10th international meeting of the International Prader-Willi Syndrome Organisation (IPWSO) is a unique event focused solely on Prader-Willi Syndrome. The event is a multi-disciplinary event for networking, sharing knowledge, and collaboration opportunities for a vast audience including scientists, caregivers, physicians, policymakers, and more.

www.ipwsoconference.org

ASEAN Federation of Endocrine Societies Congress (AFES 2019)

Manilla, Philippines, November 21 – 23, 2019

AFES 2019, taking place at the Philippine International Convention Center, will focus on “Actualizing the Future Endocrine Science.” Conference highlights include “The Rice That Binds Us,” a discussion by Frank Hu, MD, on the impact of the Asian diet in endocrine disorders; “Precision Medicine,” which focuses on the role of Asian genomics in diabetes management by Juliana Chan, MD; and “Obesity Amidst Poverty” as Vivien Lim, MD, discusses tackling this ASEAN predicament, just to name a few. Additional opportunities include the Reproductive Endocrinology and Calcium Metabolism Symposia and Thyroid Simultaneous Symposia.

www.afes2019.org

ENDOCRINE ITINERARY

Lab Manager Safety Summit

Philadelphia, Pennsylvania

October 29 – 30, 2019

Having a strong set of overall laboratory safety rules is essential to avoiding disasters in the lab, and the Lab Manager Safety Summit aims to equip attendees with the knowledge and skills needed to ensure a safe working space. Topics to be covered include preparing for laboratory safety inspections with overviews of requirements and best practices, disaster planning and recovery for research operations, and creating mentally healthy workspaces, just to name a few. This summit is catered to lab professionals in a variety of scientific industries and invites everyone who plays a role in ensuring a safe working environment is maintained in the lab.

<https://summit.labmanager.com/safety/home>

89th Annual Meeting of the American Thyroid Association

Chicago, Illinois

October 30 – November 3, 2019

The ATA Annual meeting is open to the community of endocrinologists, internists, surgeons, basic scientists, nurse practitioners, and other healthcare professionals who wish to broaden and update their knowledge of the thyroid and thyroid cancer.

www.thyroid.org/89th-annual-meeting-ata/

Diabetes and Its Complications

Boston, Massachusetts

November 8 – 10, 2019

This Harvard Medical School CME program aims to provide comprehensive updates, practice recommendations, and the newest evidence-based strategies for the treatment and care of the person with or at risk for diabetes. Topics will include recent advancements in diabetes screening, the pharmacological management of diabetes focusing on insulin and non-insulin treatments, and diabetic complications and comorbidities including dyslipidemia, hypertension, and cardiovascular disease.

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

CLINICAL PRACTICE GUIDELINES

FROM THE ENDOCRINE SOCIETY

Pharmacological Management of Osteoporosis in Postmenopausal Women

A NEW STANDARD FOR CARE

Get the latest recommendations on how to promptly diagnose, treat, and provide ongoing care for postmenopausal women to help prevent osteoporosis and reduce the likelihood of fractures.

Recommendation Highlights:

- ▶ Treat postmenopausal women at high risk of fractures with pharmacological therapies, as the benefits outweigh the risks.
- ▶ Prescribe initial treatment with bisphosphonates to reduce fracture risk.
- ▶ Reexamine fracture risk after three to five years in women taking bisphosphonates. Women who remain at high risk of fractures should continue therapy, while those who are at low-to-moderate risk should be considered for a “bisphosphonate holiday.”

**READ THE GUIDELINE AT
ENDOCRINE.ORG/2019OSTEOPOROSIS**

“

Physicians also are highly involved in educating the next generation of medical doctors. It is important to encourage physicians to promote education and consideration about the importance of sleep and circadian biology throughout medical school, especially as students today often get very limited information about how sleep and circadian rhythms can modulate mental and somatic health.”

— JONATHAN CEDERNAES, PHD, of Uppsala University in Uppsala, Sweden, discussing the impacts of sleep — or lack thereof — on the endocrine system and what it means to patients and the clinicians who treat them in “Slumber Party: How Acute Sleep Loss Affects the Endocrine System” at endocrine.org/slumberparty.

HALL OF PRESIDENTS

Hans Lisser

Endocrine Society President
(1927–1928)

Hans Lisser, MD (1888 – 1964) served as chief of endocrinology at the University of California for more than 40 years, and he was a remarkable clinician and teacher. While at Johns Hopkins, he came under the influence of great teachers like Osler, Barker, Halsted, and Welch. In addition, he studied with Harvey Cushing. It was not until 1914 that Lisser shifted his primary



field of interest to the field of endocrinology. While at the University of California, he organized the Endocrine Clinic and remained chief until his retirement in 1956.



Shopping For Insulin

\$385

Average Retail Price in Paris

\$1,938

Average Retail Price in the U.S.

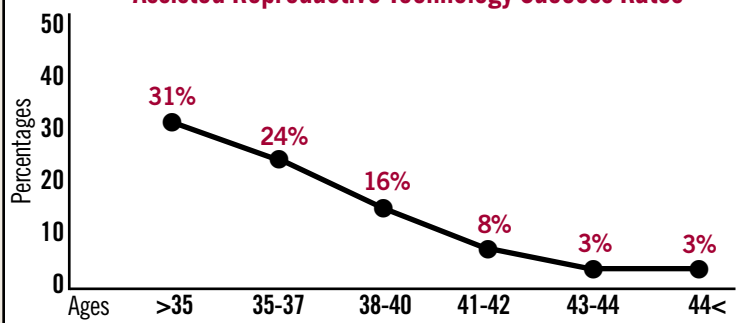
— SOURCE: AMERICAN DIABETES ASSOCIATION

**5%–10%**

The percentage of pregnancies estimated to be affected by the rise in gestational diabetes.

— SOURCE: OXFORD ACADEMIC

Assisted Reproductive Technology Success Rates



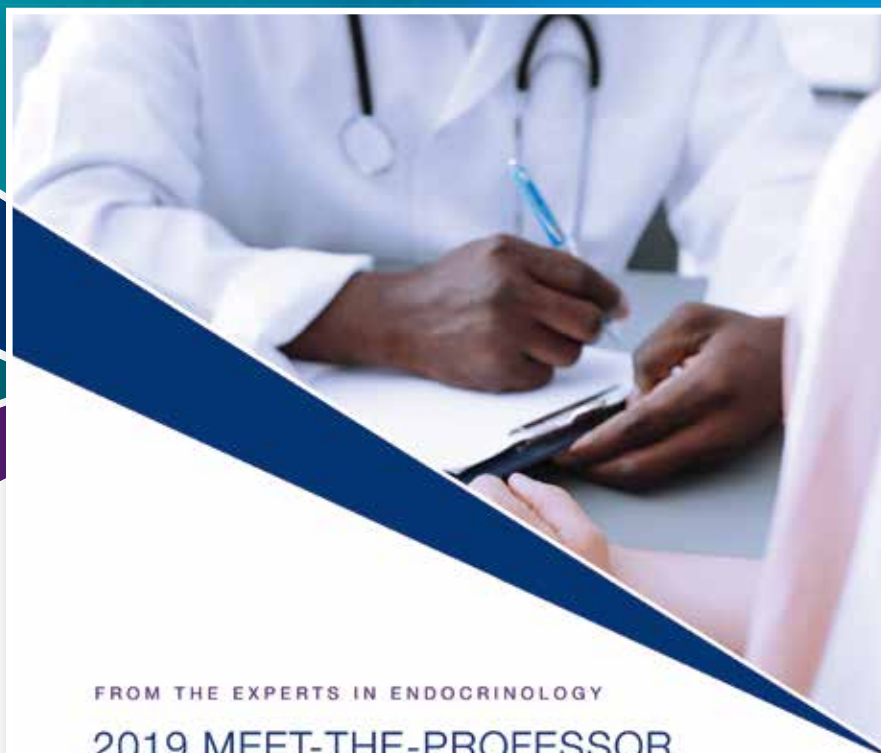
— SOURCE: CENTERS FOR DISEASE CONTROL & PREVENTION

**76%**

Percentage of Caucasian women with polycystic ovary syndrome (PCOS) who experienced anxiety symptoms, compared to

61%

of African American women with PCOS.
From "Racial Bias" on page 20.



FROM THE EXPERTS IN ENDOCRINOLOGY

2019 MEET-THE-PROFESSOR

ENDOCRINE CASE MANAGEMENT

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SOCIETY 



Two studies presented at **ENDO 2019** highlight the impact race has on certain endocrinopathies. In one study, ethnicity clearly influences fracture risk in patients with diabetes, while a second study shows that anxiety levels differ by race in women with PCOS, although mental health screening is recommended regardless of race.

Racial Ethnicity & Endocrine Health **BIAS**

BY KELLY HORVATH

We are, by now, well aware that race and ethnicity have enormous implications for health. From predisposing to particular diseases to disparities in healthcare, an individual's racial makeup matters.

Two studies out of Philadelphia recently presented at **ENDO 2019** narrow the focus a bit to examine how racial and ethnic differences come into play in sequelae of diabetes and polycystic ovary syndrome (PCOS).

A Break for African Americans with Diabetes

In "Racial-Ethnic Differences in Diabetes-Related Fracture Risk," lead researcher Rajesh Jain, MD, of the Lewis Katz School of Medicine at Temple University in Philadelphia, Penn., and team compared fracture risk among Caucasian, Hispanic, and African American patients with diabetes. Somewhat surprisingly, although fracture risk is known to be increased in the setting of diabetes, the additional risk had not, until now, been studied specifically in Hispanics and African Americans, despite these U.S. ethnic minorities having the highest prevalence of diabetes. Moreover, other

studies have indicated that these groups have a higher risk of other types of diabetes complications like neuropathy and proteinuria, so Jain and team felt it was time for a more comprehensive look at fracture risk.

"In this study, we were hoping to examine whether there were racial-ethnic differences in diabetes-related fracture risk. We specifically wanted to look at osteoporotic fractures — such as hip, wrist, and humerus fractures. These are termed 'major osteoporotic fractures' and are the ones that cause the most morbidity and that we think would be most responsive to treatment," Jain says.

The team conducted a retrospective cohort study of six groups comprising a total of more than 40,000 subjects ages 40 years and older to stratify risk by ethnicity. Using electronic medical records from the Temple Health System from late 2010 to mid 2017, they identified 19,173 people (7,618 Caucasians, 7,456 African Americans, and 4,079 Hispanics) with diabetes and then compared them with 26,217 subjects in parallel reference groups (15,138, 8,301, and 2,778, respectively) diagnosed with hypertension but who were diabetes free. This design was deliberate to avoid



We were hoping to examine whether there were racial-ethnic differences in diabetes-related fracture risk. We specifically wanted to look at osteoporotic fractures — such as hip, wrist, and humerus fractures. **These are termed ‘major osteoporotic fractures’ and are the ones that cause the most morbidity and that we think would be most responsive to treatment.**

— RAJESH JAIN, MD, LEWIS KATZ SCHOOL OF MEDICINE, TEMPLE UNIVERSITY, PHILADELPHIA, PENN.

skewing the data. “African Americans, in general, have a much lower risk of fracture,” Jain says, “so we did not want to compare African Americans with diabetes directly to Caucasians with diabetes. We wanted to use control subjects within the same ethnic group; we chose patients with hypertension as the controls because we felt they would have a similar comorbidity pattern as those with diabetes.”

Their findings are both unexpected and represent a new understanding of fracture risk among African Americans: The risk of fracture in Caucasians and Hispanics with diabetes was 23% higher than in those without diabetes. However, the risk of fracture in African Americans with diabetes was not significantly different than those without

diabetes — in other words, diabetes apparently conferred no additional risk of fracture in African Americans. The bigger surprise was the strong association between prior fracture and new fractures in African Americans; African Americans with prior fracture had over 10 times the risk of another fracture as compared to about twofold in Caucasians and Hispanics. “That association had not been shown previously,” Jain explains. “The numbers are relatively small, but it’s an interesting finding that needs to be examined further.”

Currently, the American Diabetes Association does not recommend fracture screening for patients with diabetes, although this may change in the future. “It is not yet clear what the optimal screening strategy is,” Jain says. “If this study



African Americans with diabetes had no greater fracture risk than in African Americans without diabetes. However, African Americans with prior fractures had more than 10 times the risk of another fracture compared to about two times the risk in Caucasians and Hispanics.

could be replicated and confirmed, it may suggest that African Americans do not require different screening than someone without diabetes, while Caucasians and Hispanics do. This may mean that clinicians need to target patients with diabetes at risk of fracture in a racial-/ethnic-specific manner. However, more work needs to be done.”

The full results of the study will be published in *The Journal of Clinical Endocrinology & Metabolism*. Future studies will tap into the same Temple Health database to zoom in on what the specific risk factors are among patients with diabetes, such as hemoglobin A1c levels and kidney function.

PCOS and Mental Health: It's Not Just Black and White

In “Racial Differences in Anxiety, Depression, and Quality of Life between White and Black Women with PCOS and Controls,” senior author Anuja Dokras, MD, PhD, of the Hospital of the University of Pennsylvania in Philadelphia, and team undertook a study to determine whether the known racial differences in prevalence of anxiety and depression among ethnic groups that have been described in the general population would also be evident in patients with PCOS.

“Racial differences have been identified in phenotypes of PCOS and in PCOS-associated comorbidities such as metabolic risk,” Dokras explains. “Women with PCOS are also at an increased risk of anxiety and depressive symptoms. But racial differences in anxiety and depression had not been studied specifically in PCOS.”

Affecting as many as 10% of women, PCOS causes hirsutism and metabolic problems including weight gain and increased risks for diabetes and high cholesterol. Putting this together with the known association between anxiety and depressive symptoms and PCOS as well as the known association between obesity and diabetes in the general population, the team wondered how the mental health symptoms linked to PCOS might vary depending on race.

“We also have a recent study showing that body image distress may be a mediator for these symptoms in PCOS,” Dokras says. “We conducted that study to better understand the drivers for the increased prevalence of anxiety and depressive symptoms in this population. Body image distress is increased in women with PCOS.”

The team screened more than 500 women either with or without PCOS ages 18 to 50 years from November 2015 to November 2018 using the Hospital Anxiety and Depression Scale (HADS) and PCOS quality of life survey (PCOSQ). Of



AT A GLANCE

- ▶ In a study by a team of researchers from Temple University, race and ethnicity appear to influence diabetes-related fracture risk, with Hispanics and Caucasians facing similar increased risk levels, whereas African Americans have lower or possibly no additional risk.
- ▶ Although diabetes did not confer additional risk of fracture in African Americans, having a prior fracture increased their risk of experiencing another, an association significantly stronger than in Caucasians and Hispanics, which represents a novel finding.
- ▶ African American women with PCOS experience lower rates of anxiety than do Caucasian women with PCOS (61% versus 76%), but due to the high prevalence of both anxiety and depression in both groups, screening for mental health symptoms is recommended for all women regardless of race/ethnicity at diagnosis.




Racial differences have been identified in phenotypes of PCOS and in PCOS-associated comorbidities such as metabolic risk. **Women with PCOS are also at an increased risk of anxiety and depressive symptoms. But racial differences in anxiety and depression had not been studied specifically in PCOS.**

— ANUJA DOKRAS, MD, PHD, HOSPITAL OF THE UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA, PENN.

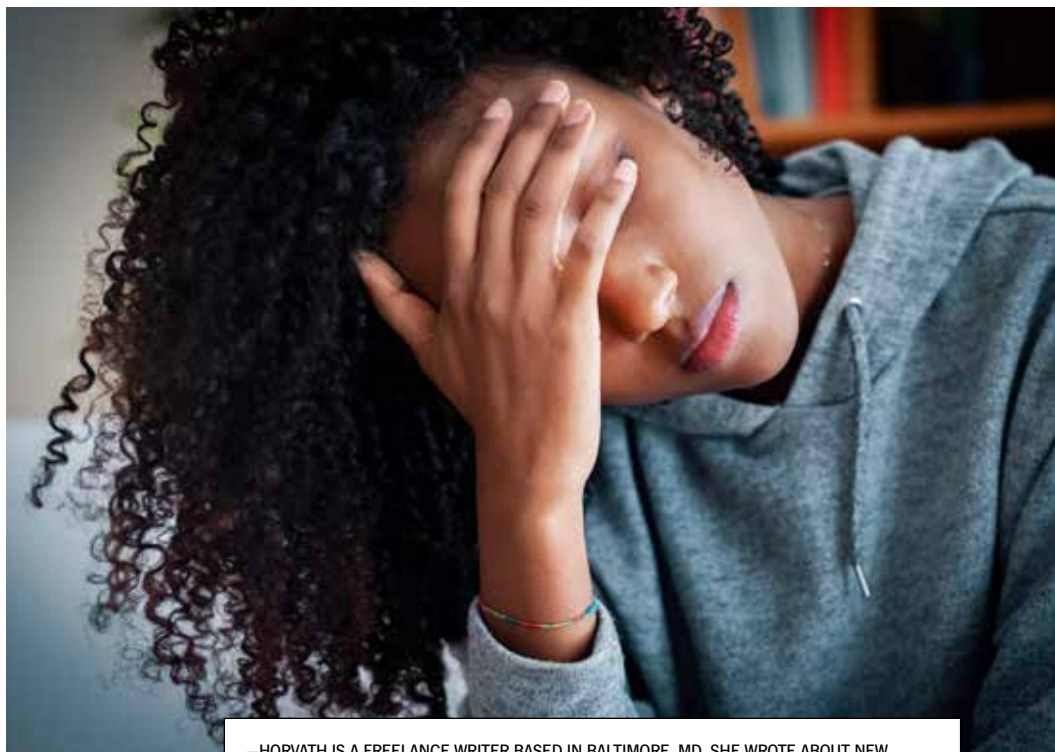
the 272 women with PCOS, 70 were African American and 202 were Caucasian. Of the other 295 women representing the control group, 186 were African American and 109 were Caucasian. Not surprisingly, 72% of women with PCOS had anxiety symptoms on screening tests, compared with 52% of women without PCOS.

Perhaps more surprisingly, though, when researchers broke the groups out by race, differences began to emerge: 76% of Caucasian women with PCOS experienced anxiety symptoms, compared with 61% percent of African American women with PCOS. Relatedly, body mass index was correlated with anxiety scores in Caucasian women but not African American women in the overall population. Depression scores did not differ nor did depression and anxiety scores among the control group.

Although African American women with PCOS exhibited a lower rate of anxiety than Caucasian women, the majority nevertheless experienced this debilitating symptom, underscoring the need for clinicians to intervene early. “New international PCOS guidelines recommend screening all women with PCOS for depression and anxiety at their initial visit,” Dokras says. “There are brief four to nine question screens that are validated and widely used. No specific screen is recommended for this population. If the screen is positive, the patient needs further evaluation.”

The new guidelines appeared in *Fertility and Sterility* in May 2018. Interventions aimed at weight loss and management may also be beneficial. 

A study that looked at racial differences in women with PCOS found that African American women had a lower rate of anxiety than Caucasian women.



—HORVATH IS A FREELANCE WRITER BASED IN BALTIMORE, MD. SHE WROTE ABOUT NEW TRANS GENDER RESEARCH IN THE AUGUST ISSUE OF *ENDOCRINE NEWS*.



Primary Prevention of ASCVD and T2DM in Patients at Metabolic Risk

A NEW STANDARD FOR CARE

Improve patient care with our newly updated metabolic risk guideline, which recommends a screening model for detecting heart disease and diabetes earlier and emphasizes treatment with lifestyle changes.

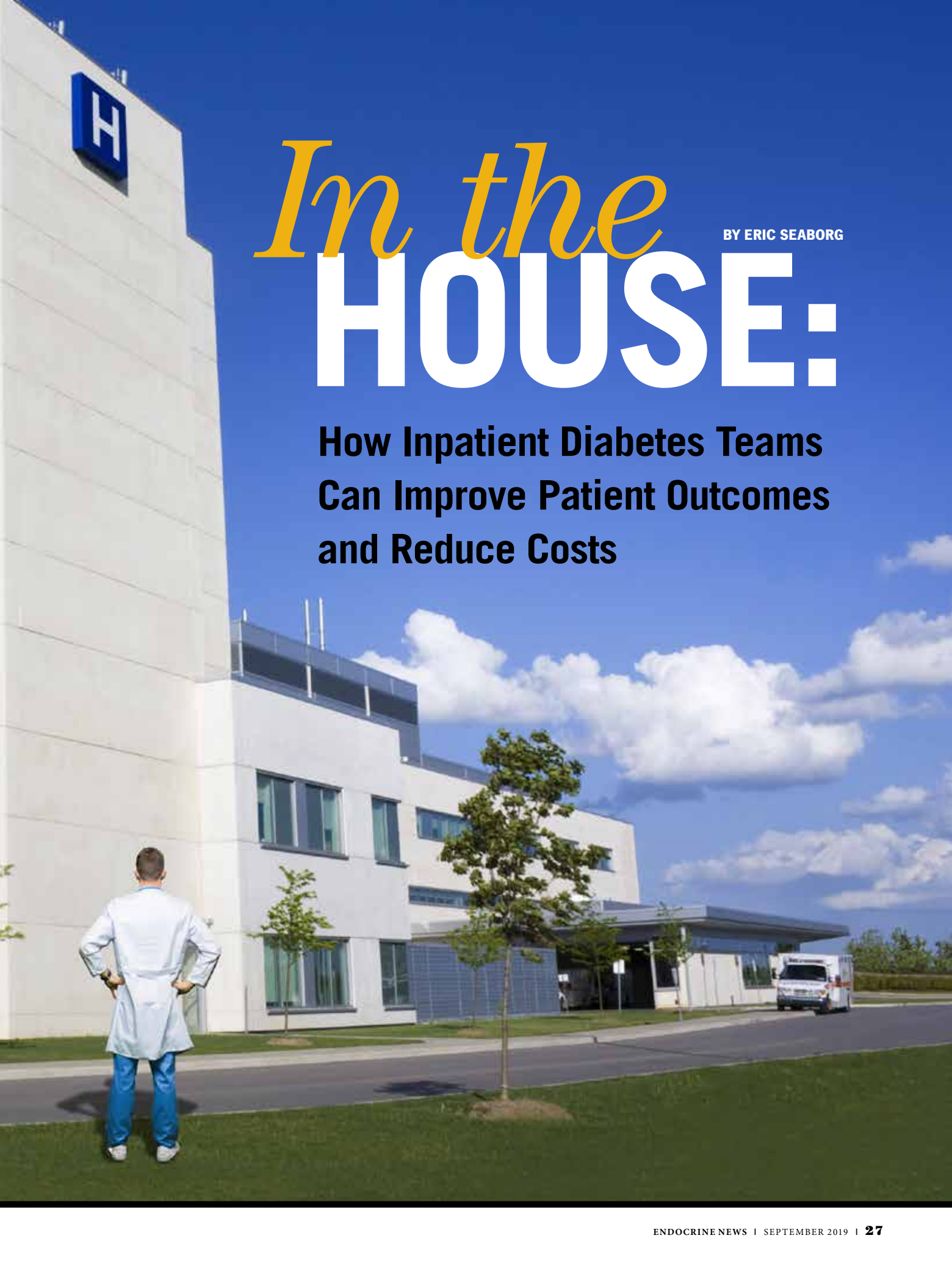
Recommendation Highlights:

- ▶ Prescribe lifestyle modification before drug therapy in patients with metabolic risk.
- ▶ Measure waist circumference as a routine part of the clinical exam.
- ▶ Set a minimum target of 5% loss of body weight over 12 months in those at metabolic risk who are overweight.

READ THE GUIDELINE AT [ENDOCRINE.ORG/2019METABOLICRISK](https://www.endocrine.org/2019metabolicrisk)







In the **HOUSE:**

BY ERIC SEABORG

**How Inpatient Diabetes Teams
Can Improve Patient Outcomes
and Reduce Costs**

Becoming more common in academic institutions, diabetes management teams can play an important role in community hospitals by reducing lengths of stay and readmissions.



Evidence continues to mount that focusing on patients' diabetes through inpatient management services when they are in the hospital for other conditions pays dividends in lowering re-admissions and short-term mortality — a model that can be adapted to community hospitals. Two new studies show the success of these programs, while a third highlights the risks of discharging patients without attention to their glucose levels.

Inpatient diabetes management teams have become more common in large academic hospitals, and a study published last year in *BMJ Open Diabetes Research & Care* compared the outcomes in diabetes patients at a tertiary referral medical center in Boston, Mass. Some patients were cared for by a standard primary service team and others received care from a specialized diabetes team (SDT) that included an endocrinologist, diabetes nurse practitioner, certified diabetes nurse educator, and discharge/transition coordinators.

"Inpatient diabetes management by an SDT significantly reduces 30-day readmission rate to medical services, reduces inpatient diabetes cost, and improves transition of care and adherence to follow-up. SDT consultation during the first 24 hours of admission was associated with a significantly

shorter hospital [length of stay]," concluded the study team, led by Osama Hamdy, MD, an endocrinologist at the Joslin Diabetes Center in Boston.

Treatment by the team reduced the 30-day readmission rate to non-critical medical units by around 30% compared with standard care by the primary service team.

"Although the number of hospitals in the nation is four times higher than the number of practicing endocrinologists, the best investment that any hospital can do is to utilize a specialized diabetes team to manage patients with diabetes," Hamdy says.

Small-Hospital Endocrinology

Mihail Zilbermint, MD, sought to replicate the large-hospital results at his community hospital. Zilbermint is director of endocrinology, diabetes, and metabolism at Suburban Hospital, a 240-bed facility in Bethesda, Md., that is part of Johns Hopkins Medicine.

Zilbermint says endocrinologist involvement in community hospitals has waned in recent years due to changes in care



and payment models. “When I was moonlighting at Suburban Hospital as a hospitalist while training in endocrinology, I noticed that patients with diabetes were getting suboptimal care at a time when diabetes management was becoming more complex,” Zilbermint says. He was shocked to learn that for many of his colleagues, the only endocrinology consult available was to log on to UpToDate.

After Zilbermint joined the staff, he created an inpatient diabetes management service similar in make-up to the one at the Boston hospital, modeled on a successful program at Johns Hopkins Hospital in Baltimore. His team recently published its results in the *Journal of Community Hospital Internal Medicine Perspectives*.

Community Hospital Tests Model

The Suburban Hospital study tracked 4,700 patients with diabetes admitted to Suburban Hospital over a 16-month period. About 18% of the patients, mostly with higher severity of illness scores than the comparison group, were co-managed by the diabetes service.

Patients cared for by the diabetes team actually had a longer median

AT A GLANCE

- ▶ Inpatient diabetes management teams have proven their worth in reducing lengths of stay and hospital readmissions.
- ▶ Although these teams are spreading first to large academic centers, community hospitals can implement them as well.
- ▶ The position of “hospitalist endocrinologist” could offer a new approach to improving patient care, especially in smaller hospitals.



“No patient with diabetes should leave the hospital without knowing where and when to go for diabetes follow-up. We found that managing patients by a diabetes team increased the adherence to follow-up with primary care physicians and diabetes specialists.”

— OSAMA HAMDY, MD, ENDOCRINOLOGIST, JOSLIN DIABETES CENTER, BOSTON, MASS.

length of stay than the control group, probably because they were sicker on admission. However, over time there was a statistically significant decline in the length of stay of the diabetes team group, and no significant change in the length of stay of the control group.

Over the study period, 30-day readmissions in the treated group declined by 11%, with no change seen in the control group. There was a 27% decrease in the length of stay for co-managed patients, which the hospital estimated represented a potential savings of nearly \$1 million.

Zilbermint tells *Endocrine News* that many of these patients were being managed outside of the hospital by their primary care physicians, with no contact with endocrinologists, and that endocrine expertise could have long-term benefits for their care. For example, many patients in the hospital for cardiovascular problems had never been introduced to diabetes drugs such as SGLT2 inhibitors and GLP-1 receptor agonists, which provide cardiovascular health benefits. “We assess the patients and start them on those newer medications if needed. We’ve established a close collaboration with the cardiothoracic team,” Zilbermint says.

Zilbermint sees an opportunity for “a brand new field of the ‘hospitalist endocrinologist’ that I hope will gain popularity.” He has brought in an endocrinologist to fill this role in another community hospital in the Johns Hopkins system, in Columbia, Md.

Glucose Levels on Discharge

The danger of not focusing on diabetes was made clear by a study in *The Journal of Clinical Endocrinology & Metabolism* from a team led by Elias Spanakis, MD, an assistant professor of medicine in the Division of Endocrinology, Diabetes, and Nutrition at the University of Maryland School of Medicine and a staff physician at the Baltimore Veterans Affairs (VA) hospital.

This nationwide study of more than 800,000 patients with diabetes admitted to Veterans Affairs hospitals over a 14-year period examined the association between the patients’ glucose values during their last day of hospitalization and several measures: 30-day readmission rate; 30-day, 90-day, and 180-day mortality rates; and combined 30-day readmission/mortality rate.

It concluded that “patients with diabetes who had hypoglycemia or near normal glucose values during the last day of hospitalization had higher rates of 30-day readmission and post-discharge mortality.” The rate for all five negative outcomes increased progressively as patients’ minimum glucose concentrations decreased below the 100 mg/dl range, compared to those above 100 mg/dl. Spanakis says that he expected bad outcomes associated with hypoglycemia but was surprised that even patients whose glucose values were in the low normal range experienced a higher rate of adverse outcomes.



“Although future studies are needed, physicians should avoid discharging patients with diabetes from the hospital until glucose values above 100 mg/dl are achieved during the last day of the hospitalization,” Spanakis says. The study recommends that endocrinologists could reduce the risk in these patients by modifying their outpatient diabetes medications and advising them on performing frequent glucose monitoring or using continuous glucose monitoring devices.

Benefits of Education

The Boston study recommends that consultations with the diabetes team should be initiated as soon as possible after admission, and preferably within the first 24 hours of admission, to improve results and reduce the patient’s length of stay.

“That is why the new standards of diabetes care of the American Diabetes Association recommend utilization of specialized diabetes teams,” Hamdy says. “Education on the floor, especially on meters and insulin injections, was shown to be extremely helpful to our patients. No patient with diabetes should leave the hospital without knowing where and when to go for diabetes follow-up. We found that managing patients by a diabetes team increased the adherence to follow-up with primary care physicians and diabetes specialists.”

With payment models moving toward penalizing hospitals for early patient readmissions, these kinds of efforts could pay dividends for institutions that implement them. **EN**

SEABORG IS A FREELANCE WRITER BASED IN CHARLOTTESVILLE, VA, AND A FREQUENT CONTRIBUTOR TO *ENDOCRINE NEWS*. HE WROTE ABOUT THE ENDOCRINE SOCIETY CLINICAL PRACTICE GUIDELINE ON TREATING OLDER PATIENTS WITH DIABETES IN THE JULY ISSUE.

RESOURCES

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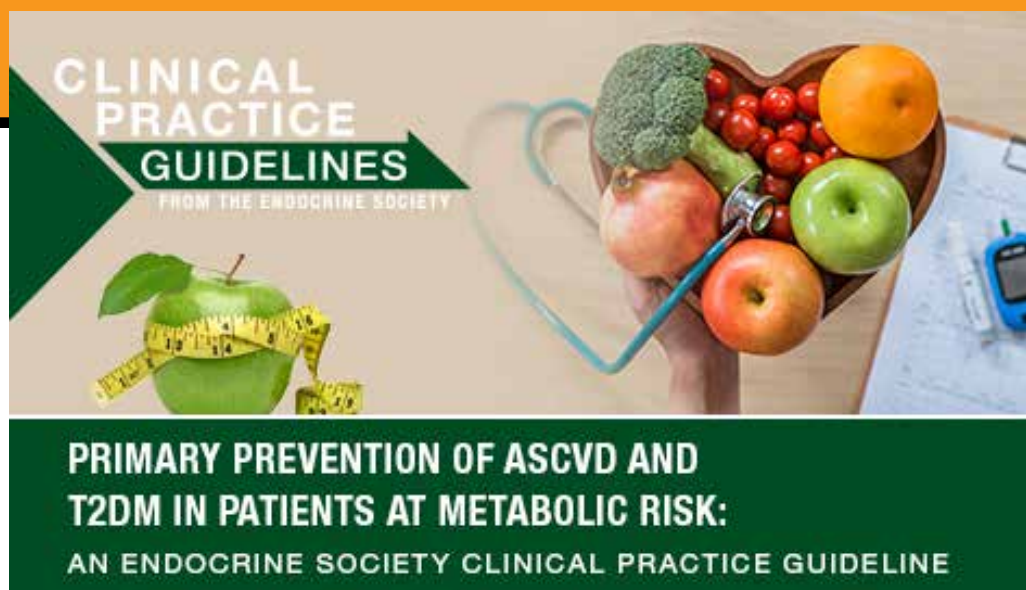
A close-up photograph of a hand placing a light-colored wooden block on top of a stack of similar blocks. The blocks are arranged in a staggered pattern, creating a sense of depth and balance. The hand is positioned on the right side of the frame, with the thumb and index finger visible, carefully placing the block. The background is a soft, out-of-focus grey.

DANGER *Ahead:*

New Guideline Stresses Prevention

The Endocrine Society's latest clinical practice guideline calls for regular monitoring of key metabolic measures at routine appointments. These initial steps can alert clinicians and patients alike to any potential metabolic threats that might be lurking.

BY ERIC SEABORG



Better screening to detect the metabolic risk factors for cardiovascular disease and type 2 diabetes can lead to earlier intervention using lifestyle modifications — changes that could prevent patients from progressing to these conditions, according to a new Endocrine Society clinical practice guideline.

The five key components of metabolic risk that should be monitored regularly are elevated blood pressure, increased waist circumference, elevated fasting triglycerides, low high-density lipoprotein cholesterol, and elevated glycemia.

The finding of three or more of these components should identify the patient as being at metabolic risk for developing atherosclerotic cardiovascular disease (ASCVD) and type 2 diabetes mellitus (T2DM).

“Primary Prevention of ASCVD and T2DM in Patients at Metabolic Risk: An Endocrine Society Clinical Practice Guideline” is an update of a guideline published in 2008. “The guideline needed to be updated because of new data in the past 10 years,” says James L. Rosenzweig, MD, of Hebrew Rehabilitation Hospital in Boston, Mass., who chaired the writing committees for both documents.

“The term ‘metabolic syndrome’ has been used to describe a set of clustered risk factors,” Rosenzweig says. The concept and definition of metabolic syndrome has been dogged by controversy, but there is no doubt that it increases the risks of developing cardiovascular disease and diabetes — hence the guideline refers to “metabolic risk” in individuals who do not yet have either condition and highlights the importance of overall risk assessment. The guideline also points users to risk engines for specific conditions such as heart disease to guide treatment targets.

First-Line Therapy

One approach that hasn’t changed since the first edition of the guideline is that the first-line therapy for those found to be at metabolic risk is lifestyle

“Doctors haven’t been doing enough to measure waist circumference, but it is an important aid to identifying patients at metabolic risk earlier and preventing more cases of heart disease and diabetes. We would like to encourage the primary care doctor or internist to put waist circumference in as one of the measures when they first see a patient.”

— JAMES L. ROSENZWEIG, MD, HEBREW REHABILITATION HOSPITAL, BOSTON, MASS.; CHAIR, GUIDELINE WRITING COMMITTEE

Changes from Previous Guideline

There are many areas where the approach and recommendations have changed, including:

► The new guideline focuses on adults between the ages of 40 and 75 because the evidence is the best — and because intervention is the most critical — for this age group. Many of the recommendations can be used to guide decision making in patients of other ages, however.

► The guideline incorporates the use of hemoglobin A1c as a measure of glycemic control.

► For individuals with prediabetes, the guideline has increased the frequency of screening for diabetes to at least yearly. It recommends that these individuals should be “referred to intensive diet and physical activity behavioral counseling programs.”

► Since the last guideline, the American Heart Association/College of American Cardiology equation for estimating cardiovascular risk was published, so the guideline recommends using it to calculate 10-year atherosclerotic cardiovascular disease risk.

► The new guideline tightens the risk levels that call for drug intervention. The previous guideline defined moderate risk as a 10-year ASCVD risk of less than 10%. The new guideline considers any level greater than 7.5% to be high, and moderate risk to be 5% to 7.5%.



► In the same vein, the recommendations call for more intensive use of lipid-lowering agents. For example, individuals with low-density lipoprotein (LDL) cholesterol concentrations of 190 mg/dL or greater should receive high-intensity statin therapy to reduce their levels by 50% or more. In individuals at metabolic risk who are taking statins and the therapy is controlling their LDL cholesterol but their triglyceride levels are high and their high-density lipoprotein levels are low, the guideline suggests adding fenofibrate as adjunct therapy.

► In keeping with newer data and recommendations from other organizations, the new edition calls for more intensive blood pressure treatment, with the target lowered from 140/90 mm Hg to 130/80 mm Hg.

► The guideline drops the recommendation for the use of low-dose aspirin as a preventive because of a lack of evidence of a benefit in the face of risks of bleeding and other complications.

modification, including a healthier diet, more physical activity, and weight loss. The guideline says that providers “should encourage individuals to join comprehensive programs led by trained health professionals that support the adoption of healthy lifestyles.”

Specific components of the healthy lifestyle should include daily physical activity such as brisk walking and reduction in sedentary time; weight loss of at least 5% in the first year that is sustained over time; and a cardiovascular-healthy diet. “There are lots of changes in the dietary and exercise recommendations that are updated in the current guideline,” Rosenzweig says. “We didn’t talk much about Mediterranean diets and various other aspects of healthy diets the last time, but in this one we did much more.”



Another piece of advice that hasn’t changed is the recommendation that clinicians measure waist circumference as a routine part of the clinical examination. The guideline emphasizes waist circumference over simple reliance on BMI because abdominal fat is a more sensitive indicator of the risk of developing cardiovascular disease and diabetes.

“Doctors haven’t been doing enough to measure waist circumference, but it is an important aid to identifying patients at metabolic risk earlier and preventing more cases of heart disease and diabetes,” Rosenzweig says. “We would like to encourage the primary care doctor or internist to put waist circumference in as one of the measures when they first see a patient.”

The guideline drops the recommendation for the use of low-dose aspirin as a preventive because of a lack of evidence of a benefit in the face of risks of bleeding and other complications.



AT A GLANCE

- ▶ A new practice guideline urges healthcare providers to incorporate screening of key indicators to identify patients at metabolic risk of developing atherosclerotic cardiovascular disease and type 2 diabetes.
- ▶ The five key factors for assessing metabolic risk are abdominal body fat, HDL cholesterol, triglycerides, blood pressure, and glycemic control.
- ▶ For patients identified as being at metabolic risk, first-line therapy is prevention through lifestyle and behavioral interventions such as healthier diet, increased exercise, and weight loss.

“ We didn’t have much in the way of recommendations for the prevention of type 2 diabetes last time around, but now there are several drugs that show promise. **The one that we most specifically recommend is metformin.** Although not for all patients, **it can clearly aid in the reduction of the risk of diabetes.**”

— JAMES L. ROSENZWEIG, MD, HEBREW REHABILITATION HOSPITAL, BOSTON, MASS.;
CHAIR, GUIDELINE WRITING COMMITTEE



Beyond Lifestyle Changes

“We emphasize the importance of lifestyle, dietary, and behavioral changes as the first-line treatment,” Rosenzweig says. “However, treatment with medication is appropriate if goals are not met with lifestyle changes alone. We didn’t have much in the way of recommendations for the prevention of type 2 diabetes last time around, but now there are several drugs that show promise. The one that we most specifically recommend is metformin. Although not for all patients, it can clearly aid in the reduction of the risk of diabetes.”

Making Prevention Routine

To head off the need for medications, the guideline writers would like to see prevention by monitoring for potential problems and providing support for lifestyle changes woven into routine care.

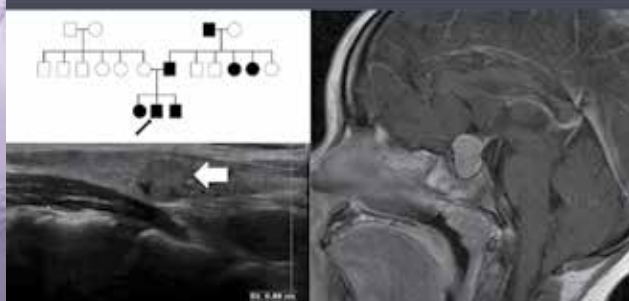
“Physicians can screen for the key risk factors for ASCVD and T2DM at routine clinical visits when they obtain a patient’s history and perform physical examinations,” the guideline says. “Behavior changes should be supported by a comprehensive program led by trained interventionists and reinforced by primary care providers. Structured activity programs may be added with the help of an exercise specialist for appropriate individuals.” ^{EN}

*Co-sponsored by the American Diabetes Association and the European Society for Endocrinology, the guideline appeared in the September print issue of **The Journal of Clinical Endocrinology & Metabolism** and is available online at www.endocrine.org/2019MetabolicRisk.*

— SEABORG IS A FREELANCE WRITER BASED IN CHARLOTTESVILLE, VA. HE WROTE ABOUT THE ENDOCRINE SOCIETY’S CLINICAL PRACTICE GUIDELINE ON TREATING OLDER PATIENTS WITH DIABETES IN THE JULY ISSUE.

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Trial & **ERROR:**

**When
Study
Results
Disappoint**



Anorexia nervosa (AN), a serious and potentially fatal eating disorder, affects up to 2% of women and carries with it a number of dangerous comorbidities, including a prevalence of up to 75% of major depressive disorders and anxiety, equally serious and potentially fatal psychiatric illnesses. Treatment for AN involves psychotherapeutic approaches, and severe cases require hospitalization in order to attempt to restore the patient to a healthy weight. However, there are currently no FDA-approved pharmaceutical treatments for AN.

Testosterone therapy has been shown to improve depressive symptoms in men suffering from hypogonadism, and male rats treated with testosterone after orchiectomy increased their food intake and gained weight. Researchers in Boston hypothesized that women with AN may benefit from testosterone therapy as well, since previous studies of women with severe androgen deficiency secondary to hypopituitarism and bilateral oophorectomy demonstrated antidepressant effects of low-dose testosterone therapy. The group, led by Karen K. Miller, MD, and Anne Klibanski, MD, both of Harvard Medical School and the Neuroendocrine Unit at Massachusetts General Hospital, designed a three-week, randomized, placebo-controlled pilot study in which they saw that testosterone therapy improved depression severity in women, compared to placebo.

So the team continued the work with a follow-up study, now testing the effects of low-dose testosterone therapy in women with AN over 24 weeks. “Given the results of our three-week pilot study, we were hopeful that low-dose testosterone therapy to correct a relative testosterone deficiency in women with anorexia nervosa would be an effective endocrine-targeted treatment,” says the study’s first author, Allison Kimball, MD, also of Harvard Medical School and Massachusetts General Hospital’s Neuroendocrine Unit.

Treating AN can be challenging, and while this disorder might not always be in an endocrinologist’s wheelhouse, it’s still worth looking at whether an endocrinological solution to caring for patients with AN and its comorbidities is indicated.

Researchers studied female anorexia nervosa patients to see if testosterone could be a potential treatment. Despite promising results in previous trials, the current study’s outcomes were not as hoped.

BY DEREK BAGLEY

“

The attractiveness of testosterone therapy was that we were positing that the correction of a relative androgen deficiency might be effective and have few side effects. **We did see few side effects, but we did not see that it was powerful enough to be effective for the treatment of this serious disease.”**

— KAREN K. MILLER, MD, HARVARD MEDICAL SCHOOL; NEUROENDOCRINE UNIT, MASSACHUSETTS GENERAL HOSPITAL, BOSTON



Impact of Psychiatric Meds

For this current study, Kimball, Miller, and their team recruited 90 women with AN, ages 18 to 45 years old, through collaborating clinicians and through advertisements, and the researchers treated the participants with either a transdermal testosterone patch at 300 micrograms daily for 24 weeks or a transdermal placebo patch for 24 weeks. They published their results recently in *The Journal of Clinical Endocrinology & Metabolism*.

The researchers saw a trend toward greater improvement in depression symptom severity in the testosterone group compared to the placebo group at four weeks, which was consistent with the results of their three-week pilot study. “However, no difference in depression symptom severity between groups was seen at 24 weeks,” Kimball says. “Many factors may have contributed to the lack of sustained antidepressant effect of testosterone, including the high number of psychiatric medication changes or inefficacy of low-dose testosterone treatment in this population. Additionally, testosterone therapy was associated with less weight gain and did not lead to improvements in disordered eating symptoms compared to placebo.”

While it seems that these external factors may have influenced the effects Kimball, Miller, and their team observed, they didn’t have a say in which psychiatric medications their trial participants were taking, for obvious reasons. “As untreated anorexia nervosa can be life-threatening, subjects were required to be followed by a treatment team, and usual medical and psychiatric care was continued during the study,” Kimball says. “This resulted in initiation or discontinuation of psychiatric medications in nearly half of all subjects and psychiatric medication dose changes in nearly one-third of subjects. While the frequency of these medication changes

was not different between the testosterone and placebo groups, the sheer number may have attenuated any effects of testosterone that could have been seen if psychiatric medications were held constant. For safety reasons, we allowed psychiatric medication changes at the discretion of the treatment team.”

Testosterone is considered a promising medication, and the researchers felt that it would be able to withstand whatever other medications these patients were prescribed. “We didn’t feel that it would be ethical to prohibit patients in the study from receiving whatever treatments that their healthcare providers felt was important for their health, which may have interfered with our ability to see an effect with our treatment,” Miller says. “That having been said, if there had been a large effect, I think we would have seen it through these [medication] changes, and we didn’t see it. It clearly doesn’t have a strong enough effect for us to be able to say we recommend it.”

Disappointing Study Results

Anorexia nervosa, especially if left untreated, has a high mortality rate. According to a 2011 meta-analysis in *JAMA Psychiatry* by Jon Arcelus, LMS, MSc, FRCPsych, PhD, et al., AN had a standard mortality rate of 5.86, and one in five people with AN who had died had committed suicide. “Individuals with eating disorders have significantly elevated mortality rates, with the highest rates occurring in those with AN,” Arcelus and his team wrote in their conclusion.

And again, treating AN has proven to be difficult. By the very nature of the disorder, patients are afraid to gain weight, and this serious psychiatric illness itself is only compounded by its comorbidities. Further studies are absolutely needed to identify effective pharmacological therapies. For now, however, testosterone has to be added to the very long list of medications that are unable to treat AN. “It is very possible that testosterone is simply an ineffective treatment in this population,” Kimball says. “Another consideration is that anorexia nervosa and its comorbidities are very difficult to treat, so a ‘stronger’ medication may be necessary.”

Kimball goes on to say that the results of this study were disappointing, especially with the need for effective medications to treat AN. “Given the results of this study, testosterone therapy cannot be recommended to treat depression, anxiety, or eating disorder symptoms in women with anorexia nervosa,” she says.

Such is the nature of science and medicine: The results don’t always support the hypothesis. Things are ruled out, lessons are learned, ideas are formed, and new avenues are revealed.

“The attractiveness of testosterone therapy was that we were positing that the correction of a relative androgen deficiency might be effective and have few side effects,” Miller says. “We did see few side effects, but we did not see that it was powerful enough to be effective for the treatment of this serious disease.” ^{EN}



AT A GLANCE

- ▶ **Anorexia nervosa is a serious — and potentially fatal — psychiatric illness with equally serious comorbidities like anxiety and depression.**
- ▶ **Currently, there is no FDA-approved medication to treat anorexia nervosa, but testosterone has shown promise in previous trials.**
- ▶ **In this current study, testosterone did not lessen depression severity or lead to improvements in disordered eating symptoms, so the researchers cannot recommend testosterone to treat anorexia nervosa.**

BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. HE WROTE THE AUGUST COVER STORY LINKING BPA EXPOSURE IN PREGNANCY TO THE POTENTIAL FOR HYPERACTIVE OFFSPRING.

KNOW HYPO

PREVENTION AND TREATMENT OF HYPOGLYCEMIA

Q&A: Leonor Corsino, MD, MHS, FACE



As the Endocrine Society's Hormone Health Network launches KNOW HYPO to increase awareness of severe hypoglycemia, *Endocrine News* speaks with Leonor Corsino, MD, MHS, FACE, who helped create this campaign that could start saving lives immediately.

This month, the Endocrine Society's Hormone Health Network (HHN) is launching a new public awareness campaign to help with the prevention of severe hypoglycemia and its consequences.

Called KNOW HYPO, this new campaign was created by HHN, the Society's public education arm, so that anyone can be able to help someone who may be suffering from a dangerous drop in blood sugar. Symptoms of severe hypoglycemia include shaking or weakness and a quick response by a friend, loved one, co-worker, or even a stranger could save a life.

According to the Centers for Disease Control and Prevention, hypoglycemia is the cause of almost 300,000 emergency room visits each year, so a greater awareness of this complication is vital for successful disease management. If hypoglycemia is not quickly corrected, it can quickly worsen and even lead to death.

To help people recognize the signs of hypoglycemia before blood glucose levels drop to the severe point, HHN created informational materials to help the public understand what severe hypoglycemia is and how to intervene when a person is in danger. An infographic, video, poster for use in medical offices, web resources, and social media posts will all help raise awareness of this important issue.

“Most patients with diabetes are aware that hypoglycemia has negative consequences. However, many patients are surprised to learn how serious severe hypoglycemia can be, especially since it can be fatal.”

Leonor Corsino, MD, MHS, FACE, associate professor, Department of Medicine, Division of Endocrinology, Metabolism, and Nutrition, Duke University School of Medicine, Durham, N.C., and Deena Adimoolam, MD, assistant professor, Division of Endocrinology, Diabetes, and Bone Disease, Icahn School of Medicine at Mount Sinai, New York, N.Y., were on the committee that developed these materials.

Corsino participates as a Sub-I in a study looking at hypoglycemia and developed much of the content to support the patient education resources for this campaign. She spoke to *Endocrine News* about KNOW HYPO and why it's so important for everyone to know the warning signs of severe hypoglycemia, as well as why this was such an important priority for the Endocrine Society.

ENDOCRINE NEWS: Why was it important to develop educational resources for the KNOW HYPO campaign?

LEONOR CORSINO: As we continue to learn more about the detrimental effects of hypoglycemia in patients with diabetes, it is important to develop materials that provide patients with much-needed resources to better understand how things are changing in this field and how they can proactively work with their healthcare providers in identifying and developing skills that will help them prevent and successfully treat hypoglycemia. Because diabetes management requires a significant partnership between those engaged in patient care, it was important to give patients the tools they need to increase their knowledge so they have the confidence to engage with their providers.

EN: Why is raising awareness of severe hypoglycemia deemed a priority by the Endocrine Society now?

LC: There are many reasons why raising awareness of severe hypoglycemia is important. First, with the increasing number of patients diagnosed with diabetes comes a large number of patients treated to achieve glycemic control. Second, data shows that a large proportion of patients with diabetes are treated too intensively, increasing their risk for hypoglycemia. Third, current and emerging data show that severe hypoglycemia has detrimental outcomes in patients with diabetes including preventable visits to the emergency room, hospital admissions, and even death. Fourth, with appropriate education and awareness, severe episodes of hypoglycemia are preventable.

EN: Did you use any of your personal experiences in treating patients with severe hypoglycemia in crafting these materials for the public?

LC: Definitely! All of us have had the unfortunate experience caring for patients who have experienced a severe episode of hypoglycemia that, in one form or another, changed their lives. For example, we all have patients that, after experiencing a severe episode of hypoglycemia, developed a severe fear of it, thus making it very hard to make changes to their regimens that could allow them to achieve their personal glycemic control goal. Further, some of us had patients that, while being treated with insulin, experienced severe hypoglycemia while driving or exercising, putting their lives or the lives of others at risk.


“All of us have had the unfortunate experience caring for patients who have experienced a severe episode of hypoglycemia that, in one form or another, changed their lives.”

EN: What is something that the average person would be surprised to know about hypoglycemia?

LC: Most patients with diabetes are aware that hypoglycemia has negative consequences. However, many patients are surprised to learn how serious severe hypoglycemia can be, especially since it can be fatal.

EN: What is your hope that the KNOW HYPO campaign will accomplish going forward?

LC: My main hope is that we will further enhance the patients' and general public's awareness of the negative impact of hypoglycemia. We also hope that KNOW HYPO will equip patients with the tools they need to engage in proactive conversations with their healthcare providers to better understand how to prevent these incidents. Further, I would like for us to continue engaging in conversations that will allow us to ameliorate the impact of preventable hypoglycemia.

Xeris Pharmaceuticals, Inc. supported the development of KNOW HYPO. More information can be found at hormone.org/knowhypo. 

WHAT IS SEVERE HYPOGLYCEMIA?

If blood glucose drops really low, the person is not able to function because physical and mental changes occur causing severe hypoglycemia. If severe hypoglycemia does occur, quick action is needed. Here's what you need to **KNOW**.



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WHEN DISASTER STRIKES

Most laboratories are prepared for accidental spills or exposure to chemicals, but what about when the unthinkable happens? Having a plan in place is the first step to preserving your research in the event of a major mishap.

BY GLENDA FAUNTLEROY SHAW

One thing that has been made clear in recent years is that disaster can strike anywhere and at any time. While most labs may have a plan to handle accidental spills or minor chemical exposures, many other emergencies can devastate a laboratory, such as fire, flood, or severe weather. It is imperative that your laboratory has a plan to handle the outcomes.

Severe weather and flooding were the fate of labs at the University of Houston Medical School that were devastated by Tropical Storm Allison in June 2001. As the lab manager for one of the school's large research labs at the time, Tracy Wieder wrote about her experience in *Lab Manager*, detailing what happened when the storm dumped 32 trillion gallons of water on the city. The Medical Center suffered about \$1.5 billion in damages when the basement of the medical school building was completely filled with water as well as halfway up to the first floor.

The flood caused massive loss of research animals that were housed in the basement, and destroyed backup generators, which were also housed in the basement. This led to enormous loss of valuable, irreplaceable research samples, reagents, and cell lines, according to Wieder, who is now a senior manager of Facilities Operations and Lab Support at UHealth Sylvester Comprehensive Cancer Center at the University of Miami.

She shared her lessons learned with *Endocrine News*, starting with how laboratory staff must cope with disasters that impact both their work and personal lives.

"It is a very stressful time for lab staff who are trying to protect valuable, irreplaceable samples in their labs while also worrying about the safety of their own families and homes," Wieder says. "Thankfully, when it comes to storms, we have plenty of advanced warning."

"If advanced planning has been done, there should be no need to grab anything quickly before evacuating] except possibly lab notebooks," she adds.

Plan for the Worst

Every institution, department, and individual laboratory should have an emergency preparedness plan, according to *Prudent Practices in the Laboratory*, published by the National Research Council. To determine the type and level of planning needed, laboratory staff need to perform a vulnerability assessment, the report says. What kinds of emergencies are most likely and how could they impact the lab's operations? Some things to consider, include:

- ▶ Places where flammable liquids and oxidizers are stored or used are at high risk for fire. Are smoke detectors and detectors for hazardous vapors and gas in place? Has staff been trained to use the fire extinguishers?
- ▶ If severe weather restricts travel, would anyone be able to reach the laboratory? What possible problems could arise if no one is able to come for a day, a few days, or longer?
- ▶ Floods could be due to rain, water pipe breaks, or accidental acts. Does the lab contain equipment very sensitive to water damage?

“These losses caused by natural disasters and fires could be mitigated with proper advanced planning and it’s been my experience that most institutions don’t bother to prepare until they have already experienced significant loss.”

— TRACY WIEDER, SENIOR MANAGER, FACILITIES OPERATIONS AND LAB SUPPORT, UHEALTH SYLVESTER COMPREHENSIVE CANCER CENTER, UNIVERSITY OF MIAMI, FLORIDA

After the floods caused by Tropical Storm Allison in 2001, Wieder had her hands full cleaning up her lab and saving her research.
Photo: Tracy Wieder



LABORATORY NOTES

Houston's MD Anderson Cancer Center after Tropical Storm Allison's deluge.
Photo: Tracy Wieder



Learn How to Plan for the Worst

Tracy Wieder will be speaking at the Lab Manager Safety Summit 2019 taking place in Philadelphia October 29 – 30. Wieder will discuss:

- The need for preparedness activities for research labs;
- Steps to prepare research labs, as well as clinical research activities, for disasters; and
- What to expect during post-disaster recovery efforts.

For more information or to register, go to:
<https://summit.labmanager.com/safety/home>

Despite these warnings, most institutions are “woefully under-prepared,” says Wieder. “I believe this is a huge crisis for our scientific community at the moment. These losses caused by natural disasters and fires could be mitigated with proper advanced planning and it’s been my experience that most institutions don’t bother to prepare until they have already experienced significant loss.” ^{EN}



Back up all electronic data onto a shared computer drive or thumb drive.

LAB DISASTER PLANNING 101

As lab manager during Houston's Tropical Storm Allison, Tracy Wieder offers advice on how to best prepare your laboratory to lessen the impact of a disaster:

- Back up all electronic data onto a shared computer drive or thumb drive that will be with you when you evacuate the lab.
- Keep backup liquid nitrogen on hand so that liquid nitrogen storage tanks can be refilled in the event of a natural disaster evacuation. Before evacuating, fill your liquid nitrogen storage tanks to the limit allowed by your equipment. After a disaster has passed, electricity could still be out for days, even weeks. Without electricity, elevators do not work and liquid nitrogen tanks cannot be moved up to floors above ground level.
- Avoid placing animal rooms in basements or at ground level.
- Photograph your equipment and lab facilities for insurance company records.
- Store critical research samples off-site — either with companies that specialize in long-term sample storage or send samples to a collaborator in a different region if possible.

Keep backup liquid nitrogen on hand so that liquid nitrogen storage tanks can be refilled in the event of a natural disaster evacuation.



Source: *Lab Manager*, www.labmanager.com.

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

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1	Pharmacological Management of Osteoporosis in Post-Menopausal Women: An Endocrine Society Clinical Practice Guideline	
2	Presidential Plenary: Whole Genome Approaches to Unraveling Diseases	
3	Update on Clinical Assay Issues: What Clinicians Should Know	
4	Treatment of Diabetes in Older Adults: An Endocrine Society Clinical Practice Guideline	
5	Congenital Adrenal Hyperplasia Due to Steroid 21-hydroxylase Deficiency: An Endocrine Society Clinical Practice Guideline	
6	HbA1c Target in Diabetes: A Debate	
7	Utilizing Big Data in Science and Clinical Care	
8	Managing the Post-Bariatric Patient: Hypoglycemia, Changes in Beta-Cell Function, and Beyond	
9	Fracture Risk Assessment Beyond BMD and FRAX	
10	Pheochromocytoma and Paraganglioma: Perioperative, Management, Surveillance, and New Imaging Modalities	

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Medicare Payment to Endocrinologists Could Increase 16% by 2021

Medicare is proposing significant changes to the way physicians will be reimbursed in 2021. Last year, Medicare proposed changes to redefine and revalue evaluation and management codes (E/M) beginning in 2021 that we believed would result in steep cuts to endocrinologists. Consequently, over the past year, we worked with key stakeholders, including the American Medical Association (AMA), to ensure that these changes would not be detrimental to our members. As a result of these efforts, the Centers for Medicare and Medicaid Services (CMS) announced it is redefining and revaluing E/M services in a different way, which will result in an anticipated 16% payment increase for endocrinologists.

What's changing?

CMS proposes to implement revised E/M code definitions developed by the AMA CPT Editorial Panel with an effective date of January 1, 2021. A comprehensive overview of the new definitions can be found at <https://www.ama-assn.org/practice-management/cpt/cpt-evaluation-and-management>. Notably, CPT code 99201 will be eliminated, and a new prolonged service add-on code for a level 5 visit when it is exceeded by 15 minutes or more on the service date. The add-on code can be billed multiple times for each additional 15-minute increment beyond the level 5 visit time.

CMS is also proposing a new complexity add-on code for work associated with ongoing, comprehensive primary care and/or visits that are part of ongoing care related to a patient's single, serious, or complex chronic condition. The code could be billed with any level of outpatient E/M service with an RVU of 0.33 and a physician time of 11 minutes. A chart of the E/M payment comparison can be found below.

Besides addressing the outpatient E/M code valuations and documentation requirements, CMS separately addresses care management services. The agency outlines policies to improve the existing transitional care management, chronic care management, and chronic care remote physiologic monitoring services. The agency also proposes new codes for principal care management services, which are for the care management of patients having a single, serious, or complex chronic condition.

We are working to respond to the CMS proposal, which should be finalized in November. A summary of the proposed changes can be found at: <https://www.endocrine.org/guidelines-and-clinical-practice/macra>. We are also providing an in-depth analysis of the rule at CEU Miami on September 7 at 7 a.m. We thank all Endocrine Society members who worked with us to successfully advocate for E/M payment, which helped influence CMS's decisions.

E/M Payment Comparison			
Visit Level	Current Payment*	Proposed Work RVUs	Proposed Payment**
99201	\$45	N/A – Code would be eliminated	N/A – Code would be eliminated
99202	\$76	0.93	\$77
99203	\$110	1.60	\$119
99204	\$167	2.60	\$177
99205	\$211	3.50	\$232
99211	\$22	0.18	\$24
99212	\$45	0.70	\$60
99213	\$74	1.30	\$96
99214	\$109	1.92	\$136
99215	\$148	2.80	\$190
99XXX (New prolonged service)	N/A	0.61	\$34.60
GPC1X (New Complexity Add-on)	N/A	0.33	\$18.02

*Current payment for CY 2019

** Proposed payment based on the proposed relative value units and the CY 2019 payment rates.



September Advocacy Efforts


When lawmakers return to Capitol Hill from their August recess September 9, they will have just 15 legislative days to reach bicameral agreement on the fiscal year 2020 appropriations bills before the September 30 end of fiscal year 2019, and the Senate still needs to move its bill through subcommittees and the full committee before negotiating with House appropriators in conference.

Congressional analysts have noted that there is still a risk of a government shutdown this fall, even as Congress works to reach a bicameral compromise. Several reasons contribute to the risk of government shutdown:

1. The aforementioned serious time crunch once the summer break comes to an end;
2. Border wall funding continues to be a sticking point — as you will recall, funding for the border wall was the cause of the last shutdown; and
3. The so-called “poison pill” riders, a series of controversial, partisan policies ranging from abortion to tariffs that could be attached to the appropriations bill.

In addition to fiscal year 2020 appropriations, Congress will also be down to the wire to complete reauthorization of the Special Diabetes Program by its September 30 deadline, and working on drug pricing legislation before the 2020 election year gets underway.

Consequently, the Endocrine Society has several advocacy efforts planned for September:

- ▶ **Online Advocacy Campaigns** — We have online advocacy campaigns for members to join to contact Congress and urge support for biomedical research funding, access to women’s health, and renewal of the Special Diabetes Program. If you have not done so already, please join our campaigns today at www.endocrine.org/takeaction.
- ▶ **Physician Payment** — We will be presenting at CEU Miami on September 7 at 7 a.m. about the latest proposed changes to Medicare physician payment, including E/M codes and the Quality Payment Program.
- ▶ **Congressional Public Health Fair** — We will be participating in the 5th annual Congressional Public Health Fair September 12 to help educate Congress about various public health policy opportunities. Our booth will focus on endocrine-disrupting chemicals and encourage support for new cosmetic safety legislation to allow the Food and Drug Administration to regulate the ingredients in personal care products.
- ▶ **Rally for Medical Research Hill Day** — We are a sponsor of the Rally for Medical Research Hill Day on September 19 and will be joining hundreds of researchers to call on Congress to increase funding for the National Institutes of Health.
- ▶ **Clinical Hill Day** — We are planning a Clinical Hill Day on September 23 to advocate to Congress about renewing the Special Diabetes Program, addressing the insulin pricing situation, and creating new opportunities for endocrinology in telehealth. 

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Endocrinologist

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WOMEN'S REPRODUCTIVE HEALTH

HOW THE ENDOCRINE SYSTEM PLAYS A ROLE



GLANDS

Ovaries are glands that produce eggs and sex hormones—including estrogen, testosterone, and progesterone—which are vital to reproductive organ development, breast development, bone health, pregnancy, and fertility.

Hirsutism affects **5-10%** of all women. It refers to excess dark, thick hair in areas (such as the arms) where women usually don't have much hair. It is usually a sign of an underlying endocrine disorder, most commonly, **polycystic ovary syndrome (PCOS)**.

As women approach mid-life, estrogen levels start to fluctuate and then drop. During **menopause**, a woman's ovaries stop producing eggs and produce fewer female hormones. This condition is a normal part of the aging process that women undergo, and symptoms vary greatly from woman to woman.

HORMONES

Estrogen

Estrogen is one of two main sex hormones that women have. The other one is progesterone. Estrogen is responsible for women's physical features and reproduction.

Progesterone

Progesterone is a hormone released by the ovaries. Changing progesterone levels can contribute to abnormal menstrual periods and menopausal symptoms. Progesterone is also a crucial part of the menstrual cycle and maintenance of pregnancy. Progesterone helps to regulate women's cycles.

Testosterone

Testosterone helps with the growth, maintenance, and repair of women's reproductive tissues. When this hormone is not in balance, a lowered sex drive and health problems can occur.

PREGNANCY AND FERTILITY

40%

About **35-40%** of infertility cases are due to female infertility.

25%

About **25%** of women with infertility have infrequent or absent ovulation. These women usually have irregular periods or no periods at all.

AGE
35

LH and follicle-stimulating hormone, FSH, signal an egg to develop and be released from the ovary. A woman's ability to get pregnant can also be affected by her age, since the number and quality of her eggs gradually decrease beginning around **age 35**.



1 in 8 Breast Cancer

Breast cancer is one of the most common cancers affecting **1 in 8** women. Estrogen and progestin can cause breast tissue to grow faster than normal. Women who have been treated for breast cancer may experience fertility issues.



5-6 Million PCOS

PCOS affects an estimated **5 to 6 million** women in the U.S. and is the most common cause of infertility. PCOS is also associated with an increased risk of several endocrine disorders, including:



Type 2
Diabetes



Cardiovascular
Disease

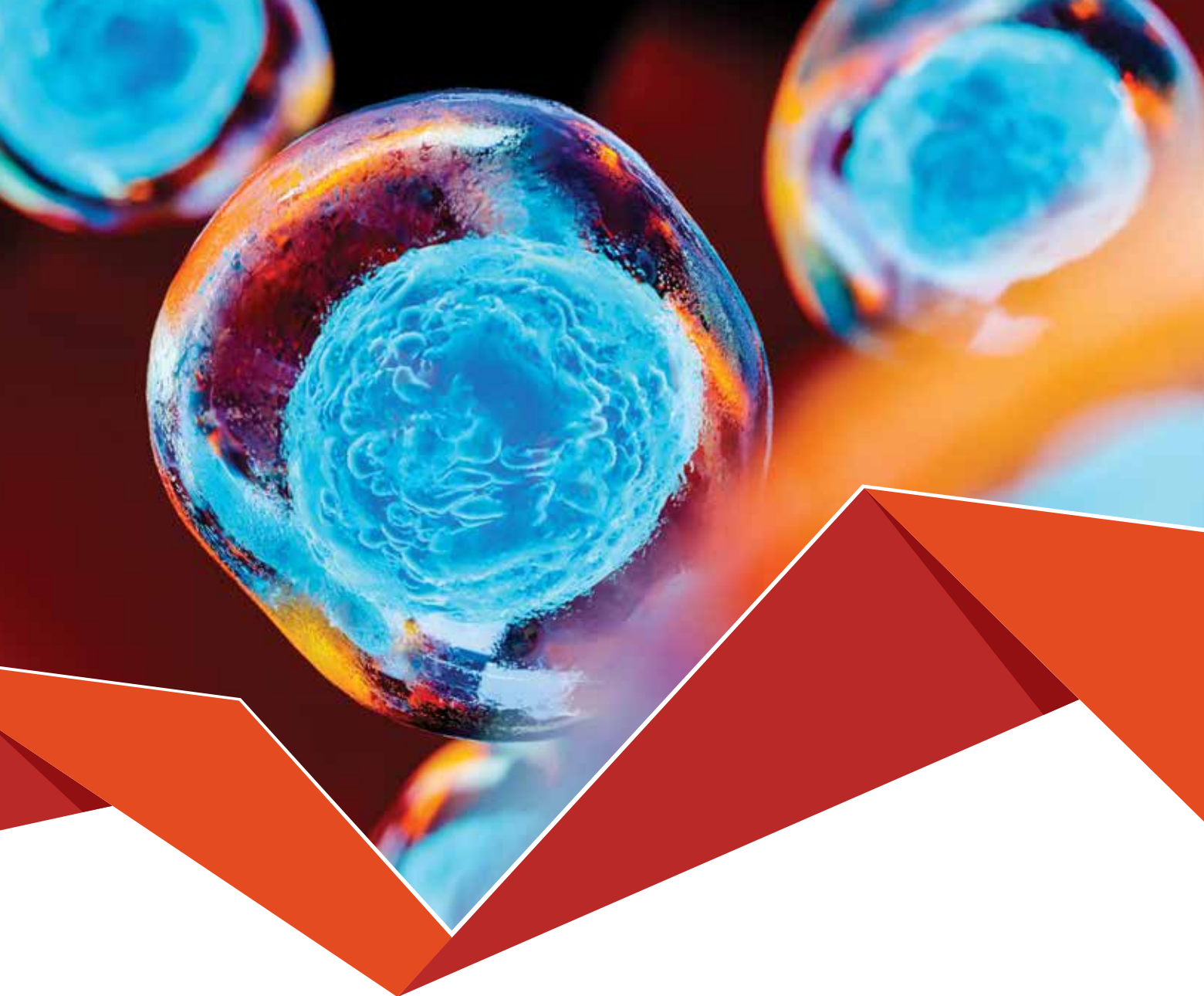


Obesity

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