

OCTOBER 2019

THE LEADING MAGAZINE FOR ● ENDOCRINOLOGISTS

Endocrine news

INTERNATIONAL

Little People, **BIG DIFFERENCES**

The Quest for Age-Related Reference Ranges for Children

- Reminding clinicians that “children are not small adults” emphasizes how adult reference intervals are markedly different.
- The lack of standards poses a challenge when treating pediatric patients.
- A new coalition to establish more accurate pediatric reference intervals is gaining momentum.



WEIGHTY ISSUES:

The latest research in obesity science

IN LIVING COLOR:

Expanding your practice's reach via telehealth

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CLINICAL PRACTICE GUIDELINES

FROM THE ENDOCRINE SOCIETY

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)



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The Latest in Obesity Science

Endocrine News focuses on some of the latest obesity-related endocrine research presented at **ENDO 2019**. From the use of a CPAP machine and the impact of excess weight on migraine headaches to the causal effects of eating late in the day and weight gain, it's clear that obesity is a risk factor for a variety of comorbidities.

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The Quest for Age-Related Reference Ranges for Children

A lack of accurate reference standards can often prove challenging when it comes to treating pediatric patients. A coalition is seeking a federal effort to establish better pediatric reference intervals for medical tests that could make treating these patients less problematic.

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Advocating for Endocrinology on “The Hill”

As the calendar year begins to wind down, the legislative calendar in Washington, D.C., seems to be ramping up, and we are very busy meeting with policy makers on Capitol Hill to share our priorities and concerns. Last month was a particularly eventful month in which members from around the country participated in Hill Days focused on research and clinical issues.

▶ On September 12, we were a sponsor of a Public Health Fair on Capitol Hill. We exhibited with other medical societies, patient groups, and public health organizations to educate congressional offices about public health issues and the importance of funding health programs. Our booth focused on endocrine-disrupting chemicals (EDCs), what they are, the research our members conduct in this area, and information about the Personal Care Product Safety Act — legislation to give the Food and Drug Administration authority to regulate chemicals in personal care products. As an added draw, we gave out skin products manufactured by Beautycounter, a skin

product and cosmetic company that only uses natural ingredients.

- ▶ On September 19, we were a sponsor of the National Day of Action and Rally for Medical Research Hill Day and joined with over 300 researchers, clinicians, and patients to advocate for an increase in funding for the National Institutes of Health (NIH). The Rally for Medical Research Hill Day is in its sixth year and has been effective in influencing Congress because the entire research community shares the same message. It also has been an effective way for our members to educate policy makers about endocrine research, and it has helped increase the visibility of our Society and the research our members conduct.
- ▶ We also conducted a Virtual Hill Day, to accompany the Rally for Medical Research Hill Day, so our members who could not come to Washington and meet with Congress could still reach out to their representatives and senators through our online advocacy campaign.

▶ On September 23, we brought members from our Clinical Affairs Core Committee and our Advocacy and Public Outreach Committee to Washington to conduct a clinically focused Hill Day. Our members met with congressional offices to discuss funding for the Special Diabetes Program, insulin pricing, and increasing coverage for telehealth services to endocrinologists.

This was just in September! We have many more opportunities for you to participate in our advocacy. This includes other Hill Days throughout the year, visits to federal agencies, and online advocacy campaigns. We also have opportunities for European members to participate in our advocacy and “Hill Days” in Brussels, Belgium, when we meet with members of the European Parliament and European Union



(EU) Commission about EDCs. For more information, please contact our Government and Public Affairs Department at gov-prof@endocrine.org.


I am convinced that our advocacy does matter, influences policy, and makes a difference for our members, our diverse missions in research and patient care, and, of course, for

“

**Whether you are an
early-career investigator or
an emeritus member, I would like
to encourage all of you to participate
in Endocrine Society advocacy.**

**Together, we can
make a difference!**

”

our patients. Indeed, I recently received a letter from the President-Elect of the European Union acknowledging our relationship with the EU. I also know that many of you have heard back from your elected officials in response to our advocacy campaigns. I believe, for example, that our advocacy influenced lawmakers when they made decisions regarding levels of NIH funding, and other policy victories that we have celebrated. Therefore, whether you are an early-career investigator or an emeritus member, I would like to encourage all of you to participate in Endocrine Society advocacy. Together, we can make a difference! 

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**

Focusing on Special Patient Populations

This month's cover story gets to the root of one of the biggest problems when it comes to treating pediatric patients, namely, the lack of accurate reference ranges. "The New Normal" by Eric Seaborg on page 28 highlights the quest by the Endocrine Society and a host of other scientific organizations who have been urging Congress to provide funds to the Centers for Disease Control and Prevention (CDC) to better establish reference intervals for hormones and other analytes. As Seaborg writes, the Endocrine Society has long been leading the efforts to improve testing standards with the Partnership for Accurate Testing of Hormones (PATH) a consortium of 20 organizations that began as an "advisory group to the CDC to promote efforts to harmonize and standardize various hormone assays."

John S. Fuqua, MD, from the Indiana University School of Medicine, discusses how he often encounters misunderstandings about thyroid hormones based on the lack of accurate pediatric data: Parents are worried due to high thyroid levels in their children, not knowing that they are actually completely normal for their age. "The parents took a day off work... and had all that anxiety induced because someone told them they had an abnormal test that was really fine," he says, adding that this process is a work in progress. "It is going to take some time. But it is great that we have this effort to advocate for kids."

We are also highlighting another patient population in the article "A Biological Reality" (p. 42) by *Endocrine News* senior editor Derek Bagley, which delves into the level of care that transgender patients should expect from their primary care physicians as well as specialists. Bagley speaks with Joshua D. Safer, MD, of the Mount Sinai Health System and Icahn School of Medicine at Mount Sinai in New York, N.Y., who says that primary care providers need to get to a point where they have some comfort and sophistication to understand that the patient's story is somewhat more complicated and "not rushing to do things." Safer adds that the happy future state "is that all endocrinologists should have some minimal training in assisting with transgender hormonal care." 

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

Did You Attend CEU or EBR 2019?

If you were one of the hundreds of attendees to CEU 2019 in Miami or Seattle, or EBR 2019 in Seattle, get in touch with *Endocrine News* and be a part of our special CEU issue next summer!
Send an email to mnewman@endocrine.org today!

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Endocrine News informs and engages the global endocrine community by delivering timely, accurate, and trusted content covering the practice, research, and profession of endocrinology.



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Parallel Lives

I read with interest the article entitled “Parallel Lives” (August 2019) by Kelly Horvath on the effects of cross hormone therapy on brain connectivity.


Thank you for bringing this interesting topic to the endocrine community. In the article it is stated “many transgender women discontinue it [estradiol] post-surgery, possibly due to inconvenience, cost, or other factor.” It is not clear whether this was referring to transient or permanent cessation of estradiol post-operatively.

As an endocrinologist that treats transgender women (and men), I can say that the major reason to discontinue estradiol perioperatively is due to the increased risk of thromboembolic disease. Major surgery is a known risk factor for thromboembolic disease as is estradiol. Although there are no strong data to guide such decisions¹, many endocrinologists (including myself) typically recommend transgender women patients discontinue estradiol ~3 weeks before and for ~4 weeks after gender affirming surgery (or any other major surgery). The Endocrine Society Clinical Practice Guideline² states that “the clinician responsible for endocrine treatment and the primary care provider...collaborate with the surgeon regarding hormone use during and after surgery.” My personal experience is that these patients tolerate the transient interruption of estradiol without problems. However, the patient should be involved in this decision, given that the adverse psychosocial/quality of life effects of estradiol discontinuation in this setting have also not been well studied. It is my experience that following the transient peri-operative discontinuation of estradiol trans-female patients wish to continue estradiol treatment.

Charles Harris, MD, PhD






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1. Boskey, E. R., Taghinia, A. H., and Ganor, O. (2019) Association of Surgical Risk With Exogenous Hormone Use in Transgender Patients: A Systematic Review. *JAMA Surg* 154, 159-169

2. Hembree, W. C., Cohen-Kettenis, P. T., Gooren, L., Hannema, S. E., Meyer, W. J., Murad, M. H., Rosenthal, S. M., Safer, J. D., Tangpricha, V., and T'Sjoen, G. G. (2017) Endocrine Treatment of Gender-Dysphoric/Gender-Incongruent Persons: An Endocrine Society Clinical Practice Guideline. *J Clin Endocrinol Metab* 102, 3869-3903 

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MOST VIEWED SESSIONS FROM ENDO 2019

- 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

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Endocrine Society Honors Endocrinology Field's Leaders with 2020 Laureate Awards



The Endocrine Society has chosen 13 leading endocrinologists as winners of its prestigious 2020 Laureate Awards, the top honors in the field.

These professionals have achieved breakthroughs in scientific discoveries and clinical care benefiting people with hundreds of conditions, including diabetes, thyroid disorders, obesity, hormone-related cancers, growth problems, osteoporosis, and infertility.

Established in 1944, the Society's Laureate Awards recognize the highest achievements in the endocrinology field, including groundbreaking research and innovations in clinical care. The Endocrine Society will present the awards to the winners at **ENDO 2020**, the Society's annual meeting, March 28—31, 2020, in San Francisco, Calif.

"Our Laureate Awards celebrate the most remarkable endocrinologists in the world, whose transformative research, mentorship, public service, and translation of science to practice has earned them a place in endocrine history," says Endocrine Society President, E. Dale Abel, MD, PhD, of the University of Iowa, Carver College of Medicine, Iowa City, Iowa. "These, our highest awards, recognize endocrine scientists and clinicians at the pinnacle of the field as well as young endocrinologists who are blazing trails and emerging as our future leaders."

Nominations are being accepted for the 2021 awards cycle until December 2019. Any submissions received after December will be considered for the following year.

The Endocrine Society's 2020 Laureate Award winners are:



Richard J. Santen, MD — Fred Conrad Koch Lifetime Achievement Award.

The Society's highest honor, this annual award recognizes lifetime achievements and exceptional contributions to the field of endocrinology. Santen is professor of medicine at the University of Virginia in Charlottesville, Va., and a past-president of the Endocrine Society. His research uncovered the role of hormones in breast cancer and pioneered the development of aromatase inhibitors, now the standard of care treatment. His expertise in estrogens led to a strong clinical interest in the treatment of menopause and to his selection by the Endocrine Society to write a definitive Scientific Statement on this topic.



Donald P. McDonnell, PhD — Gerald D. Aurbach Award for Outstanding Translational Research. This annual award recognizes outstanding contributions to research that accelerate the transition of scientific discoveries into clinical applications.

As chair of the Department of Pharmacology & Cancer Biology within the Duke University School of Medicine in Durham, N.C., McDonnell has made major contributions to the biology and pharmacology of nuclear reception (NR) ligands. His work has been foundational for the development of a new generation of drugs for the treatment of hormone-dependent cancers and metabolic disease.



Roy Shires, MBBCh, PhD, FRCP — International Excellence in Endocrinology Award. This award is presented to an endocrinologist who has made exceptional contributions to the field in geographic areas with underdeveloped resources for hormone health research, education, clinical practice,

or administration. Shires is a professor of medicine at the University of the Witwatersrand in Johannesburg, South Africa, and the first head of the Division of Endocrinology at Chris Hani Baragwanath Academic Hospital, where he served the impoverished and underprivileged population of Soweto. Despite having limited resources, he has managed to perform meaningful clinical research and most recently initiated the first program to manage transgender patients in the Soweto population.



Greet H. Van Den Berghe, MD, PhD — Outstanding Clinical Investigator Award. This annual award honors an internationally recognized clinical investigator who has contributed significantly to understanding the pathogenesis and therapy of endocrine and metabolic diseases. Van Den Berghe is

a professor at the University Hospitals Leuven and Catholic University of Leuven in Belgium, where she has become one of the most recognized scholars and clinical researchers in the world of diabetes and endocrinology of critical care. Her

contributions to understanding the role of glucose control and other endocrinological changes in critically ill patients have led to innovative programs and improved treatment.



Peter A. Singer, MD — Vigersky Outstanding Clinical Practitioner Award. This annual award recognizes extraordinary contributions by a practicing endocrinologist to the endocrine and/or medical community. Singer is a professor of clinical medicine at the Keck School of

Medicine, University of Southern California in Los Angeles, and one of the country's most dedicated and knowledgeable thyroidologists. He developed his first scientific and clinical thyroid symposium in 1978, and it continues annually to this day, after 41 years. Singer is known as an outstanding teacher and mentor to young physicians.



Alvin C. Powers, MD — Outstanding Educator Award. This annual award recognizes exceptional achievement as an educator in the discipline of endocrinology and metabolism. Powers has directed the NIH-supported Vanderbilt Medical Student Research Training Program for the past 20

years and nine years ago established the NIDDK-sponsored Medical Student Research Program in Diabetes in Nashville, Tenn. His exceptional educational efforts have had a profound influence on more than 1,000 U.S. medical students and are fostering the development of young physician-scientists with an interest in endocrinology.



Christopher B. Newgard, PhD — Outstanding Innovation Award. This award recognizes endocrinologists who have demonstrated innovation and entrepreneurship to further endocrine research or practice in support of the field of endocrinology, patients, and society at

large. Newgard is a professor in the departments of Medicine and Pharmacology & Cancer Biology at Duke University Medical Center in Durham, N.C., and has devoted his career to metabolic research. He's developed one of the most active

metabolomics laboratories in the world to gain a better understanding of pandemic metabolic disorders like obesity and diabetes. Beyond metabolism, Newgard has extensively researched pancreatic islet biology.



John C. Marshall, MD, PhD — Outstanding Leadership in Endocrinology Award.

This annual award recognizes outstanding leadership in fundamental or clinical endocrinology. Marshall is a professor at the University of Virginia and a world-renowned and highly innovative reproductive endocrinologist. He previously served as editor of *Endocrinology* and as secretary/treasurer of the Endocrine Society. His research has focused on the regulation of gonadotropin secretion in human health and disease and has contributed greatly to our understanding of complex reproductive disorders like polycystic ovary syndrome.



Ashley Grossman, BA, BSc, MD, FRCP, FMedSci — Outstanding Mentor Award.

This annual award recognizes a career commitment to mentoring and a significant positive impact on mentees' education and career. As a professor at the Universities of London and Oxford in the U.K., Grossman has leveraged his many years of patient-related experience and detailed knowledge of basic science to train hundreds of the world's leading endocrinologists. He has also provided considerable support to underprivileged fellows and physicians from Asia and Africa and set up yearly training sessions for a new generation of endocrinologists in Central Asia.



R. Michael Tuttle, MD — Outstanding Scholarly Physician Award.

This annual award recognizes outstanding contributions to the practice of clinical endocrinology in academic settings. Tuttle is an attending physician at the Memorial Sloan Kettering Cancer Center in New York, N.Y., and a leading clinician-investigator in the field of thyroid cancer. His work has shifted the paradigm in differentiated thyroid cancer treatment.



Andrew Nahum Dauber, MD, MMSc v Richard E. Weitzman Outstanding Early Career Investigator Award.

This annual award recognizes an exceptionally promising young clinical or basic investigator. Dauber is the chief of endocrinology at Children's National Hospital in Washington, D.C. He is an exceptional clinician-scientist who has successfully applied innovative genetic technologies to pediatric endocrinology and has made major contributions to our understanding of the regulation of growth and puberty.



Eleftheria Maratos-Flier, MD — Roy O. Greep Award for Outstanding Research.

This annual award recognizes meritorious contributions to research in endocrinology. Maratos-Flier is professor of medicine, emerita, at Harvard Medical School, Beth Israel Deaconess Medical Center in Boston, Mass., and director of translational medicine at Novartis Institutes of Biomedical Research. Her research on energy balance defined the role of two "new" hormones in the development of metabolic syndrome. Her work is being translated and applied to help solve the obesity problem and its complications, including type 2 diabetes and fatty liver disease.



Carol A. Lange, PhD — Sidney H. Ingbar Distinguished Service Award.

This award recognizes distinguished service to the Endocrine Society and the field of endocrinology. Lange is a professor of Medicine and Pharmacology and holds the Tickle Family Land Grant Endowed Chair of Breast Cancer Research at the University of Minnesota in Minneapolis, Minn., and a former Endocrine Society vice president, a previous leadership role on the Board of Directors. She joined the Endocrine Society in 1996 and has attended every annual meeting since. She advocated for outstanding basic science research programming in her role as Basic Science Chair of the Annual Meeting Steering Committee (2008) and was instrumental in helping to create the first basic science program track for the Annual Meeting Trainee Day, which has become an ENDO mainstay. Her support for basic scientists and trainees has inspired and given a voice to these two overlapping groups.



Endocrine Society, Partners Endorse Statement Clarifying Benefits, Risks of Testosterone Therapy

On September 3, the Endocrine Society and 10 other international medical societies issued the first Global Position Statement on the use of testosterone in the treatment of women.

The statement was published in four leading international medical journals and was authored by a diverse team of leading experts based around the world. It follows years of debate regarding testosterone therapy for women and, for the first time, provides agreement among experts and medical societies about how testosterone could be prescribed for women.

“This position statement has far reaching global consequences. It not only reassures clinicians that a trial of testosterone therapy is appropriate for women with Hypoactive Sexual Desire Dysfunction (HSDD) but very emphatically states that, at present, the available evidence does not support the use of testosterone for any other symptoms or medical condition,” says co-author Susan Ruth Davis, FRACP, PhD, MBBS, Monash University, Melbourne, Australia. “It also clearly advises that when testosterone therapy is given, the resultant blood levels should not be above those seen in healthy young women. We hope this will allow women who may benefit to be offered treatment and simultaneously protect women from receiving inappropriate testosterone therapy.”

An international task force of experts from leading medical societies, brought together by the International Menopause Society, produced the Global Position Statement to provide clear guidance regarding the prescribing and measurement of testosterone for female testosterone therapy as well as advice on

testosterone-prescribing practices that have the potential to be ineffectual or cause harm.

They concluded that testosterone can be effective at improving sexual well-being for postmenopausal women with HSDD. Recognized benefits included improved sexual desire, arousal, orgasm, and pleasure, together with reduced concerns and distress about sex.

HSDD is thought to affect around 32% of women at midlife; and, while it's common for women to lose interest in sex around the time of the menopause and after, the use of testosterone as a treatment offers women an approach that may significantly improve their sexual and related emotional well-being.

The international panel is calling on industry, researchers, and funding organizations to recognize the need for further research into testosterone therapy for women of all ages and the development and licensing of products formulated specifically for women.

The statement was developed by a multinational, multidisciplinary task force, the members of which were delegates from leading medical societies, and was peer reviewed by expert committees of endorsing societies from across the world. It has been translated into 13 languages and aims to improve the sexual well-being of women on a global scale.

The statement is available at:

www.endocrine.org/TestosteroneWomen. 



BY DEREK BAGLEY
Senior Editor



“
Severe hypoglycemia is a terrifying and dangerous diabetes complication. This new option will make treatment easier and faster in the event of an emergency.
”

TRENDS & INSIGHTS

FDA Approves First Ready-to-Use Stable Liquid Glucagon for Severe Hypoglycemia

The U.S. Food and Drug Administration (FDA) recently approved a ready-to-use, room-temperature stable liquid glucagon for the treatment of severe hypoglycemia in pediatric and adult patients with diabetes ages 2 years and above. Xeris Pharmaceuticals is marketing this new glucagon injection as GVOKE.

GVOKE is the first glucagon product approved that can be administered via a prefilled syringe (GVOKE PFS) or auto-injector (GVOKE HypoPen) reducing the steps to prepare and administer glucagon in the event of severe hypoglycemia or dangerously low blood sugar levels. These formats are designed to provide the reliability of a ready-to-use liquid glucagon while making it easier for patients or caregivers to administer quickly and simply. GVOKE will be available in two doses: a 0.5 mg/0.1 mL dose for pediatric patients and a 1 mg/0.2 mL dose for adolescent and adult patients.

“The advantage of this injection over the other injections is the other injections really required mixing, reconstituting during a period of tremendous anxiety when a loved one is unconscious and unable to recover from hypoglycemia without any intervention,” says Henry Anhalt, DO, vice president of Medical Affairs at Science 37 in Los Angeles. “When you’re in a state of an emergency situation, it’s really hard to expect people to be able to mix it, administer it, and do all of that in the face of a very anxiety-provoking episode.”

The FDA’s approval is based on positive results from three Phase 3 clinical trials evaluating the efficacy, safety, and utility of GVOKE in treating severe hypoglycemia when compared with conventional glucagon emergency kits among adults and children with type 1 diabetes (NCT02656069, NCT03091673, NCT03439072). The studies demonstrated 100% treatment success in children

and 99% treatment success in adults. Usability research evaluating the GVOKE PFS and GVOKE HypoPen demonstrated nearly 100% success rates in administering a full dose of glucagon using the simple 2-step administration process.

“Here you have something that’s already mixed in a syringe, so you don’t have to mix it,” Anhalt says. “It’s stable in a mixture. And up until now, we were unable to be able to figure out how to keep glucagon stable in a liquid solution. So if you would reconstitute glucagon, you would have to use it in short order.”

The most common adverse reactions in adults were nausea, vomiting, injection site edema, and headache. In pediatric and adolescent patients, the most common adverse reactions were nausea, hypoglycemia, vomiting, headache, abdominal pain, hyperglycemia, injection site reactions and discomfort, and urticaria. Approximately 80% of side effects seen were mild. GVOKE is contraindicated in patients with pheochromocytoma, insulinoma, and patients with a known hypersensitivity to glucagon or to any of the excipients in GVOKE.

“The approval of GVOKE is an important step forward for people with diabetes. Severe hypoglycemia is a terrifying and dangerous diabetes complication. This new option will make treatment easier and faster in the event of an emergency,” says Aaron J. Kowalski, PhD, president and CEO of JDRE.

“What we’ve seen over the last two months represents a tremendous advance in the care of people living with diabetes,” Anhalt says. “We have the nasal glucagon [Baqsimi], and now we have this stable liquid glucagon, so all of these things I think really represents significant advances, and that the members should be aware that there are options out there that go beyond what they’ve traditionally been using.”

FDA Approves First Oral GLP-1 Treatment for Type 2 Diabetes

The U.S. Food and Drug Administration (FDA) last month approved semaglutide oral tablets to improve control of blood sugar in adult patients with type 2 diabetes, along with diet and exercise. This is the first glucagon-like peptide (GLP-1) receptor protein treatment approved for use in the United States that does not need to be injected. GLP-1 drugs are non-insulin treatments for people with type 2 diabetes. The approval was granted to Novo Nordisk, which is marketing the drug as Rybelsus.

“Patients want effective treatment options for diabetes that are as minimally intrusive on their lives as possible, and the FDA welcomes the advancement of new therapeutic options that can make it easier for patients to control their condition,” says Lisa Yanoff, MD, acting director of the Division of Metabolism and Endocrinology Products in the FDA’s Center for Drug Evaluation and Research. “Before this approval, patients did not have an oral GLP-1 option to treat their type 2 diabetes, and now patients will have a new option for treating type 2 diabetes without injections.”

The efficacy and safety of Rybelsus in reducing blood sugar in patients with type 2 diabetes were studied in several clinical trials, two of which were placebo-controlled and several of which were compared to other GLP-1 injection treatments. Rybelsus was studied as a stand-alone therapy and in combination with other diabetes treatments, including metformin, sulfonylureas (insulin secretagogues), sodium-glucose co-transporter-2 (SGLT-2) inhibitors, insulins, and thiazolidinediones, all in patients with type 2 diabetes.

In the placebo-controlled studies, Rybelsus as a stand-alone therapy resulted in a significant reduction in blood sugar (hemoglobin A1c)

compared with placebo, as determined through HbA1c tests, which measure average levels of blood sugar over time. After 26 weeks, 69% of those taking 7 mg once daily and 77% of those taking 14 mg once daily of Rybelsus decreased their HbA1c to lower than 7%, compared with 31% of patients on placebo.

The prescribing information for Rybelsus includes a boxed warning to advise health care professionals and patients about the potential increased risk of thyroid c-cell tumors, and that Rybelsus is not recommended as the first choice of medicine for treating diabetes. Patients who have ever had medullary thyroid carcinoma (MTC) or who have a family member who has ever had MTC are advised not to use Rybelsus. Additionally, patients who have ever had an endocrine system condition called multiple endocrine neoplasia syndrome type 2 (MEN 2) are advised not to use Rybelsus. Rybelsus is not for use in patients with type 1 diabetes and people with diabetic ketoacidosis.

Rybelsus also has warnings about pancreatitis (inflammation of the pancreas), diabetic retinopathy (damage to the eye’s retina), hypoglycemia (low blood sugar), acute kidney injury and hypersensitivity reactions. It is not known whether Rybelsus can be used by patients who have had pancreatitis. The risk of hypoglycemia increased when Rybelsus was used in combination with sulfonylureas or insulin.

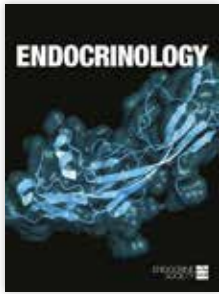
Rybelsus should be taken at least 30 minutes before the first food, beverage, or other oral medication of the day, with no more than 4 ounces of plain water. Rybelsus slows digestion, so patients should discuss other medications they are taking with their health care provider before starting Rybelsus. The most common side effects are nausea, diarrhea, vomiting, decreased appetite, indigestion, and constipation.



“
This is the first glucagon-like peptide (GLP-1) receptor protein treatment approved for use in the United States that does not need to be injected.

”

Researchers Identify Role of ATP-Binding Cassette Transporters in Anaplastic Thyroid Cancer Resistance to Chemotherapy



“

By identifying these transporters, we can tailor the best treatment approach for patients with ATC.

”

ATP-binding cassette (ABC) transporters are the major determinants of anaplastic thyroid cancer (ATC) resistance to chemotherapy, and these transporters could be the key to tailoring treatments for patients with ATC, according to a paper recently published in *Endocrinology*.

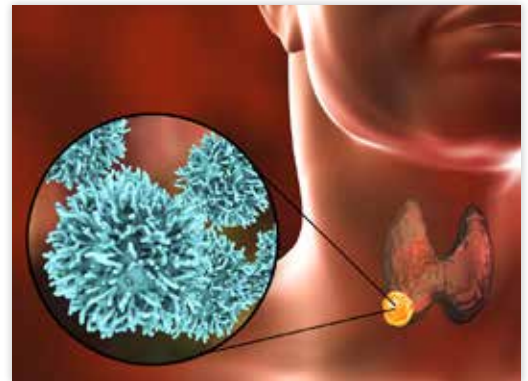
Researchers led by Vahid Haghpanah, MD, MPH, PhD, of the Endocrinology and Metabolism Research Center at the Tehran University of Medical Sciences in Tehran, Iran, point out that ATC has one of the worst prognoses of all types of cancer because it's so aggressive and resistant to treatment. “Current treatment approaches for ATC including surgery, external beam radiotherapy, and chemotherapy are not efficient and have not shown a considerable improvement in survival,” the authors write.

The researchers also write that the FDA recently approved a combination therapy with dabrafenib (BRAF inhibitor) and trametinib (MEK inhibitor) for treatment of patients with unresectable or metastatic ATC with BRAFV600E mutation, leading to an overall response rate of 61% (95% CI, 39% to 80%). “This new treatment option for ATC highlights the importance of knowing the underlying mutation and mechanism of drug resistance in ATC” they write.

However, as the authors note, there are several mechanisms that limit the efficacy of current treatments for cancer — normal tissue toxicity and pharmacokinetic parameters of drugs restrict the recommended dosage of each drug and the amount of drug reaching cancer cells, for example.

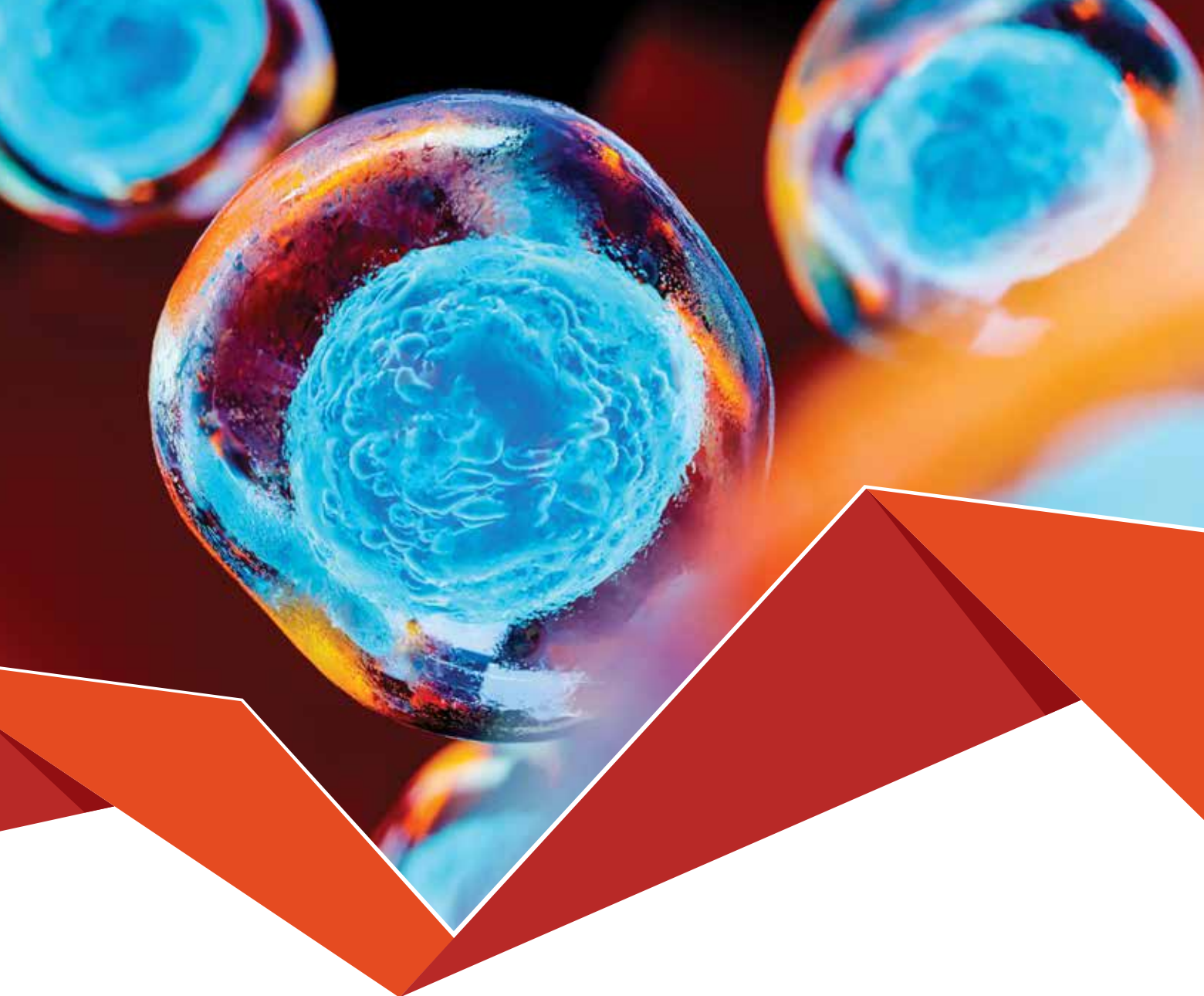
But several studies have looked at defining the role of ABC transporters in ATC, since ABC

transporters are involved in several physiological processes. Until now, there has been no systematic approach to assess the results of the previous studies. “Thus, this systematic review was designed to evaluate the possible roles of ABC transporters in ATC chemotherapy resistance,” the authors write.



The authors searched numerous databases, including Scopus, Web of Science, PubMed, Cochrane Library, Ovid, ProQuest, and EBSCO, for papers published since 1990, with predefined keywords. “In the eligible studies, the roles of 10 out of 49 ABC transporters were evaluated; among them, three pumps (ABCB1, ABCC1, and ABCG2) were the most studied transporters in ATC samples. ABCC1 and ABCG2 had the highest expression rates in ATC, and ABCB1 ranked second among the inspected transporters,” they write.

Findings: “In conclusion,” the authors write, “ABC transporters are the major determinants of ATC resistance to chemotherapy. By identifying these transporters, we can tailor the best treatment approach for patients with ATC. Additional studies are needed to define the exact role of each ABC transporter and other mechanisms in ATC drug resistance.” ^{EN}



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Dogs, Cats, and the Pituitary

BY ROB FOWKES BSc, PhD, PGCAP, FHEA, ASSOCIATE DEAN FOR POST-GRADUATE TEACHING & LEARNING, Endocrine Signalling Group, Department of Comparative Biomedical Sciences, Royal Veterinary College, London, U.K.

I wasn't really very aware of my own... *hormones*, that is. But by the time I was studying human biology at Oxford Brookes University, I knew that hormones were what I found most interesting, probably because of a combination of having a gun-toting cell physiology professor and a Chilean pharmacologist with a wonderful voice who mesmerized me with talk of catecholamine signaling.

The first bit of endocrine knowledge that I genuinely remember retaining was during an oral exam for my

that I work on the potential interaction between GnRH and C-type natriuretic peptide (CNP) in the pituitary. At my interview, he asked me if I knew what CNP was, and I promptly showed my ignorance by confusing it for one of the ribonucleotides rather than the peptide hormone that it is. Fortunately, Craig was very tolerant and supportive, and my three years in his group were extremely productive and a lot of fun. Being situated within Prof. Stafford Lightman's Department of Medicine meant I was in daily contact with lots of brilliant endocrine researchers, so I was constantly being bombarded with updates on stress physiology, IGF signaling, pituitary adenoma formation, and glucocorticoid action. And being the poor graduate student that I was, volunteering for clinical trials was a great way to supplement income and experience the amazing capacity of insulin to lower blood glucose. To 1 mmol/L...which was not so nice.

Having finished my PhD, I then migrated geographically to London and anatomically to below the waist to spend a year working with Prof. Tony Michael at the Royal Free Hospital on ovarian prostaglandin production in IVF patients. Tony taught me the basics of steroid biochemistry and gave me my first opportunity to work with patient samples. But it was clear that I was missing the pituitary too much, and I subsequently applied for a post-doctoral position with Prof. Jacky Burrin at Barts Health NHS Trust and the Royal London Hospital. Jacky had learned her molecular biology with Larry Jameson while in Boston, and it was her I have to thank for teaching me not to digest my ligations or ligate my digestions. We spent four productive years examining the mechanisms by which Steroidogenic Factor-1 (SF-1)

#IAMENDOCRINOLOGY

NAME: Rob Fowkes BSc, PhD, PGCAP, FHEA.

AFFILIATION: Royal Veterinary College, London, U.K.

MENTORS: Craig McArdle, PhD; Tony Michael, PhD; Jacky Burrin, PhD; Holly Ingraham, PhD

HOW HAS THE ENDOCRINE SOCIETY SUPPORTED YOU IN YOUR CAREER? They welcomed and nurtured me through my in-training years, were the source of my first international collaborations as a new faculty member, and are now my fail-safe source for endocrine updates as senior faculty.

undergraduate dissertation (on oocyte maturation); that was the moment I learned (and subsequently remembered) that GnRH is a decapeptide. That afternoon I also (sneakily) learned that I had already passed all my final exams well enough to get the PhD project I had been offered at the University of Bristol, which was nice.

My PhD advisor, Prof. Craig McArdle, was already an established authority in GnRH signaling, and he suggested

If you would like to share your story with our readers around the world, contact Editor Mark A. Newman at mnewman@endocrine.org.
EDITOR'S NOTE: The opinions and views of the author do not necessarily represent those of *Endocrine News* or the Endocrine Society.
 Share your stories, photos, and experiences on social media using the hashtag **#IAMEndocrinology**.
 Don't forget to tag **@Endocrine_News** and **@TheEndoSociety** on Twitter.


It was at this point that Jacky and the wonderful Prof. John Monson, suggested I leave the country; I like to think they were thinking of my career development rather than

My love for endocrinology only becomes stronger; I start each endocrine course that I teach by telling the students that whether they realize it, they *will* have an endocrine response to my lectures (love, hate, boredom, nausea).

”

finals of the World Cup — this was during **ENDO 2002** in San Francisco, and the time difference meant the kick-off was 11 p.m. I would like to say that I sensibly chose not to watch the game with 300 British endocrinologists and 10 Brazilian endocrinologists in Johnny Foley's Irish bar, and instead had an early night to prepare for my interview. But I would be lying (and I lost my voice as England lost 2–1 to Brazil, which made my interview presentation somewhat challenging).

Working with Holly and her extremely talented group of grad students and post-docs on SF-1 was an amazing experience; I learned from Holly to ask far more adventurous scientific questions and to use multiple models to answer them. My brief time with her group generated two *Molecular Endocrinology* papers and a faculty job offer at the Royal Veterinary College (RVC), University of London.

And so I left my spiritual home of San Francisco to move back to London, and the RVC, where I have been ever since. I was fortunate with grant funding early on and established my Endocrine Signalling Group to examine the developmental and functional effects of CNP. Over the years, I have realized how to appreciate the humbling brilliance of the veterinary scientists and clinicians that I work with, and now my research has moved further toward translational comparative endocrinology; there is so much to learn from our dog and cat patients with pituitary disorders! My love for endocrinology only becomes stronger; I start each endocrine course that I teach by telling the students that whether they realize it, they will have an endocrine response to my lectures (love, hate, boredom, nausea). Endocrinology is the one clinical discipline with over-arching control over all health and disease — and I am privileged and proud to still be working in this field. 





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San Francisco, California

March 28 – 31, 2020

KEY DATES

ADVANCE REGISTRATION:

through December 12, 2019

ABSTRACT DEADLINE:

November 4, 2019

HOUSING DEADLINE:

March 3, 2020

With over 7,000 attendees, over 2,000 abstracts, and more than 200 sessions, **ENDO 2020** is the leading global meeting for endocrinology research and clinical care. Join us for the most well attended and valued translational endocrinology meeting in the world. Bringing together leading experts, researchers, and the most respected clinicians in the field, **ENDO 2020** represents a convergence of science and practice that highlights and facilitates breakthrough discoveries in the field of endocrinology. Spend time connecting with peers and colleagues, exchanging ideas and information, and getting out in front of the latest trends and advancements in hormone health. The meeting also hosts other satellite and pre-conference events.

www.endocrine.org/endo2020

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 that 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/

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, policy makers, 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

ThyroAlex 10

Alexandria, Egypt, December 19 – 20, 2019

ThyroAlex 10 is the regular semiannual thyroid-themed conference organized by the Alexandria Thyroid Association and Endocrinology Unit, and the Alexandria faculty of Medicine. The conference will be held over two days; the first will include small group, interactive workshops by thyroid experts. The second day is a full-day conference with lecturers from Egyptian national universities handling thyroid patients in their daily practices.

www.med.alexu.edu.eg/endounit/alexandria-thyroid-association/



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/>

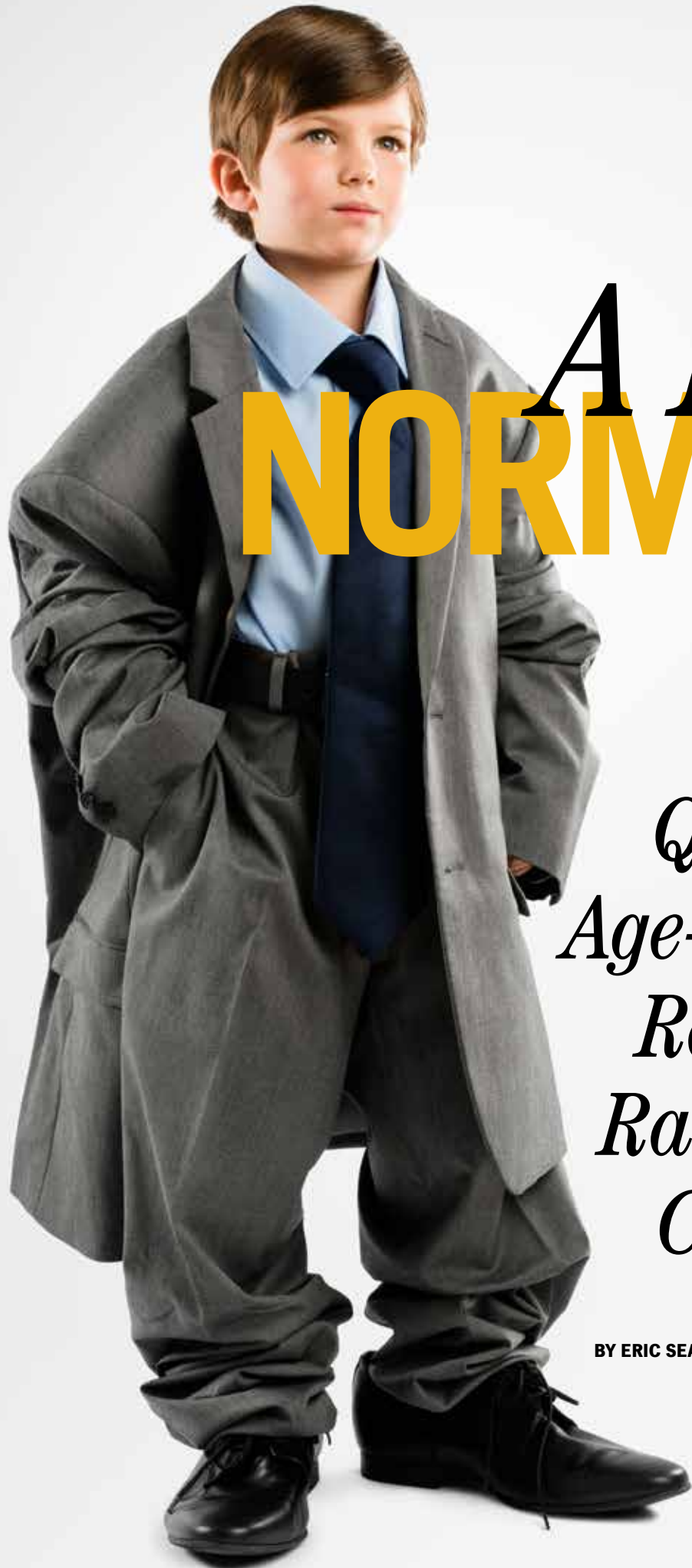
Diabetes and Its Complications

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/>



A New **NORMAL:**

*The
Quest for
Age-Related
Reference
Ranges for
Children*

BY ERIC SEABORG

A lack of accurate reference standards can often prove challenging when it comes to treating pediatric patients. Better pediatric reference intervals for medical tests are needed to make treating these patients less problematic.

Children are not small adults is an admonition to remind clinicians that they should not rely on adult reference intervals of diagnostic tests for treating pediatric patients. The problem is that adequate age-related reference intervals do not exist for a wide range of hormones and other analytes.

The need for this information has led the Endocrine Society to join a coalition urging Congress to provide funds to the Centers for Disease Control and Prevention (CDC) for a major program to better establish these intervals.

The Endocrine Society has long been active in efforts to improve testing through the consortium it developed and leads, the Partnership for Accurate Testing of Hormones (PATH), an alliance of some 20 organizations that started as an advisory group to the CDC to promote efforts to harmonize and standardize various hormone assays.

“The Endocrine Society believes there is a need to develop accurate reference ranges for children as well as adults,” says Mila Becker, chief policy officer at the Endocrine Society.

To that end, the Society joined with other organizations to recommend that “Congress provide the CDC Environmental Health Laboratory with an additional \$10 million in fiscal year 2020 to initiate and coordinate” the work of improving pediatric reference intervals. The American Association for Clinical Chemistry (AACC) organized the effort to develop the recommendations and to send them to Congress.

At press time, 23 organizations had added their names to the effort, including the Pediatric Endocrine Society, College of American Pathologists, and American Society for Bone and Mineral Research.

The long-term goal would be to create “a national repository to collect and store pediatric samples from healthy children that can be used to develop more precise age, developmental, ethnic, and gender-specific reference intervals. The repository should also maintain a comprehensive database of existing pediatric reference intervals and make them readily accessible by healthcare providers and patients,” according to an AACC position paper.

The Problem with Children

“To establish reference intervals, you have to analyze a large number of specimens from a ‘healthy’ population,” says Dennis Dietzen, AACC past-president and professor of pathology and immunology as well as pediatrics at Washington University in St. Louis. “It is relatively easy to do that with adults because they don’t mind when you stick a needle in their arm, and you can draw relatively large amounts of blood.”

“You rarely see age-specific reference intervals provided for thyroid hormones, even though newborns, babies, and toddlers commonly have higher thyroid hormone levels than adults.”

— JOHN S. FUQUA, MD, PROFESSOR OF CLINICAL PEDIATRICS, INDIANA UNIVERSITY SCHOOL OF MEDICINE, INDIANAPOLIS, INDIANA, AND A MEMBER OF THE ENDOCRINE SOCIETY, PATH, AND PES



“Children are not small adults” continues to be the mantra for clinicians treating pediatric patients and further emphasizes the need for more accurate hormone reference ranges for children.

“ This is a work in progress. It is going to take some time. But it is great that we have this effort to advocate for kids.”

— JOHN S. FUQUA, MD, PROFESSOR OF CLINICAL PEDIATRICS, INDIANA UNIVERSITY SCHOOL OF MEDICINE, INDIANAPOLIS, INDIANA, AND A MEMBER OF THE ENDOCRINE SOCIETY, PATH, AND PES

It's a different story with children because parental permission can be difficult to obtain, and the smallest have a limited blood volume. Historically, most pediatric data have come from samples taken during clinic or hospital visits, which suggests they are not from a healthy population, Dietzen says.

In addition, as children grow through various developmental stages, their normal concentrations can change quickly, requiring a series of age- or developmentally matched ranges. That has led to “considerable inconsistency and large gaps in the ranges provided for children,” he says.

Markers Change with Age

The marker of renal function, creatinine, exemplifies how concentrations can change with age. “The circulating concentration of creatinine is a function of muscle mass,” Dietzen says. “When babies are born, they have high water content compared to lean muscle mass, so their creatinine concentrations are very low. As they get older, their creatinine concentrations tend to rise. When puberty hits, male muscle mass becomes larger than female muscle mass, so then you have a gender difference in addition. So the major challenge is rapid developmental change, and to be able to collect and analyze enough data to define biochemically each one of those developmental changes,” Dietzen says.

Alkaline phosphatase is another example — a high level in an adult can indicate bone or liver disease, whereas the same level in young children and infants may be normal and simply represent growth and development.

John S. Fuqua, MD, professor of clinical pediatrics at the Indiana University School of Medicine in Indianapolis, and a member of the Endocrine Society, PATH, and PES, says that he commonly encounters misunderstandings about thyroid hormones: “You rarely see age-specific reference intervals provided for thyroid hormones, even though newborns, babies, and toddlers commonly have higher thyroid hormone levels than adults.”

He often has children referred to him because of “high” thyroid hormone levels that are completely normal for their age. “The parents are worried, the patient has to come to the appointment, which in our area sometimes requires a three-hour drive, and then



they hear it is normal. The parents took a day off work, incurred the expense of getting here, and had all that anxiety induced because someone told them they had an abnormal test that really was fine.”

Why the CDC?

The groups are asking Congress to fund a program in which the CDC would gather large numbers of samples from a diverse population to establish pediatric reference intervals for a wide variety of analytes because the task would be an extension of work the agency is already doing.

“The CDC has experience measuring disease biomarkers and collecting reliable health data from people,” says Hubert W. Vesper, PhD, director of the clinical standardization programs at the CDC National Center for Environmental Health, and PATH co-chair. “CDC currently works to improve the accuracy and reliability of laboratory tests, assists with generating generally accepted reference intervals for adults, and provides the intervals to laboratories, physicians, and researchers. CDC also conducts the National Health and Nutrition Examination Survey (NHANES), which collects blood, urine, and comprehensive health status information from its participants. This expertise in recruiting participants, collecting health information, and generating data could be useful in creating reference intervals for other populations,” including children.

The CDC has led harmonization programs for cholesterol, triglyceride, vitamin D, testosterone, and estradiol assays.

Dietzen says that NHANES has the capability to “go out into every geographic corner of the U.S. and find kids who fit our inclusion/exclusion criteria and draw samples from them. They can annotate physical characteristics and developmental characteristics of these kids, to create a very good clinically annotated data set. The CDC has a rich concentration of different analytic platforms, so it will be the central analytic outfit that will measure the analytes that we want to measure and begin to do the data analysis that we need.”

The groups are working to persuade members of Congress to include the funding for the effort, but given the current climate in Washington, there are no assurances of success.

“This is a work in progress,” Fuqua says. “It is going to take some time. But it is great that we have this effort to advocate for kids.” ^{EN}

AT A GLANCE

- ▶ Although reliable reference intervals for medical tests have been established for adults, there are large gaps and considerable inconsistency in the ranges provided for children.
- ▶ A coalition of healthcare groups is seeking to have the CDC take the lead in establishing better pediatric reference intervals for a wide range of analytes.
- ▶ The CDC already has the programs and infrastructure in place to obtain and analyze a large number of clinical samples from healthy children to spearhead this process.

— SEABORG IS A FREELANCE WRITER BASED IN CHARLOTTESVILLE, VA. HE WROTE ABOUT HOW IN-HOUSE DIABETES TREATMENT TEAMS COULD BE HELPFUL IN IMPROVING PATIENT OUTCOMES IN HOSPITAL SETTINGS IN THE SEPTEMBER ISSUE.

IN LIVING COLOR:

Extending Your Practice's Reach Via Telehealth

BY CHERYL ALKON



The advent of smartphones has enabled patients to make lengthy travel and languishing in waiting rooms a thing of the past as telehealth has become more and more common in endocrinology practices.

Telehealth can help manage the kind of chronic conditions, such as hypothyroidism or diabetes, that are considered hallmarks of endocrinology. Such visits help make education and ongoing medical care easier to administer.

Several recent studies have shown that telehealth is growing in the medical field as more practitioners are using technology, such as videoconferencing visits, to see their patients. Payers are reimbursing for such visits through CPT medical coding implemented in early 2019, which cover both physician-to-patient visits as well as physician-to-physician consults via the Internet, telephone, and/or electronic health record referral services.

In a July 2019 study of doctors' interest in telemedicine published by physician medical network Doximity, more than 21,000 physicians said they were interested in telemedicine job opportunities; of 15 medical specialties, endocrinology ranked number 11 of specialties most engaged in such positions. A white paper published by nonprofit Fair Health in April 2019 that analyzed insurance claims found that the number of claims that were submitted using telehealth increased by 53% from 2016 to 2017 — a bigger jump than claims submitted via retail clinics, urgent care centers, ambulatory surgery centers, or emergency rooms.

Telehealth lends itself to endocrinology, says Nisha Jayani, MD, an endocrinologist with Paloma Health, an online medical practice focused on treating hypothyroidism in newly diagnosed patients as well as those who have lived with the condition for some time. "Technology helps us guide patients through their care so that they don't have to be on top of it," she says. "We exclusively see patients via online video calls, and we use technology to automate as much as we can, such as forms,





intake questions, and reminders, so that we can offer the best experience possible without compromising care.”

How Endocrinologists Can Use Telehealth

If endocrine patients who see their physicians for ongoing care use telehealth visits instead, the patients can avoid paying for parking and gas and can save time normally spent on traveling to the medical office. For patients who live far from the doctor’s office, telehealth helps bridge a gap. “It allows us to reach patients, such as those who live in rural areas we wouldn’t normally be able to reach,” says Peter Alperin, vice president at Doximity.

It’s a two-way street, as telehealth also extends endocrinologists’ reach, Jayani says. “There is a huge shortage of endocrinologists in the U.S., especially in some rural areas, and using telehealth is an amazing way to improve access to care,” she says.

Endocrinologists who see patients through telehealth can provide specialist care to patients who may otherwise have been

followed by their primary care physicians for diabetes or thyroid conditions. The lack of travel time can help make the visit more productive, Alperin says.

Using telehealth for people with diabetes, endocrinologists “can check a patient’s feet, do a visual physical exam, and spend a good amount of educational time with a patient to discuss what the patient needs to do to maintain their care,” Alperin says. “The physician can also go over lab values, which don’t necessarily need to be done in person.” For patients with hypothyroidism who don’t want to or cannot be seen in person, “there is still much that can be done with a live video visit,” Jayani says. “We can see the thyroid, have the patient do a thyroid check and swallow to see any protrusions, get a reading of symptoms, see the patient’s constitution, and talk to the patient with a comprehensive history.”

According to Jayani, her patients say that telehealth’s convenience allows them to speak with the doctor without forgetting details. “Patients have remarked that when they’re not in the exam room in a gown, they are more relaxed,” she says. “They are more likely

“There is a huge shortage of endocrinologists in the U.S., especially in some rural areas, and using telehealth is an amazing way to improve access to care.”

— NISHA JAYANI, MD, ENDOCRINOLOGIST, PALOMA HEALTH, GARDENA, CALIF.



If you can find a place for telehealth in your practice, it can be very satisfying. You can do a tremendous amount of good to be able to reach populations that otherwise wouldn't have access."

— PETER ALPERIN, VICE PRESIDENT, DOXIMITY, SAN FRANCISCO, CALIF.

to remember all their questions." They also aren't wasting time in waiting rooms or filling out paperwork during the visit. "The online intake questionnaire patients fill out before a consultation helps us to do a better job without wasting time during the visit," she adds.

Saving time is a bonus for patients, too. "They don't have to take as much time away from work for visits or waste time sitting in waiting rooms," Jayani says.

Besides collecting details like a patient's preferred pharmacy ahead of time, Paloma Health's online intake "asks patients more than 40 questions on hypothyroidism, with logical steps between them," she says. "Someone diagnosed with Hashimoto's does not answer the same question as someone with congenital hypothyroidism. It really helps us offer a personalized approach and makes sure that, as doctors, we have the information we need to treat patients efficiently."

Handling Telehealth's Challenges

Technology always comes with its own learning curves, and telehealth is no exception. "Patients and doctors have to make sure they have the proper tech set up," Alperin says. Learning how to work it properly also takes time. But, he says, "I think today, most patients and doctors are very comfortable with conducting video calls."

Jayani agrees. "The upside is that once you get it right, you still need to make some adjustments here and there, but most of it will work for quite some time," she says.

Alperin adds that seeing a doctor through a video visit could make it more challenging to develop a patient/doctor rapport. "There's something very human and trust-building about seeing someone in person, and developing that trust means people are more willing to follow the advice you give them, and what they

are willing to tell you," he says. "It's very possible to do that in telehealth, but it might take a little longer."


Telehealth visits aren't for every patient. It's important to use clinical judgement in cases where patients should be directed to in-person care, Jayani says. "At Paloma, we have a treatment protocol that excludes patients from our care if we believe they would be better treated with regular traditional visits, such as, for example, patients with a history of thyroid cancer or those with COPD and a history of recent MIs."

Making Telehealth Work

Jayani suggested physicians who want to implement telehealth learn all they can about the technology as well as whatever specific training is recommended for the visits. "Technology should improve patient experience, not the contrary," she says. "Make sure that you are at least a bit tech savvy; otherwise, you and your patients will not enjoy the experience. Also, train yourself with mock consultations before your first consultation."

Making the experience a positive one can go a long way toward reaching more patients, Alperin says. "If you can find a place for telehealth in your practice, it can be very satisfying," he says. "You can do a tremendous amount of good to be able to reach populations that otherwise wouldn't have access."

Jayani says that physicians are likely to benefit as well.

"Telehealth is the future of medicine, and we should embrace it and work with other constituents in the healthcare system to support this level of care," she says. "We are doctors, but we are first and foremost humans. I see so many of my friends working from home with all the benefits of being close to their families. Why should we not enjoy this as doctors?" 

— ALKON IS A MASSACHUSETTS-BASED FREELANCE WRITER WHO IS THE AUTHOR OF THE BOOK, *BALANCING PREGNANCY WITH PRE-EXISTING DIABETES: HEALTHY MOM, HEALTHY BABY*. SHE WROTE ABOUT PLANNING FOR MEDICAL LEAVE IN THE JUNE ISSUE.



WEIGHTY *Issues:*

BY KELLY HORVATH

Endocrine News

focuses on some of the latest obesity-related endocrine research presented at **ENDO 2019**. From the use of a CPAP machine and the impact of excess weight on migraine headaches to the causal effects of eating late in the day and weight gain, it's clear that obesity is a risk factor for a variety of comorbidities.

The Latest in Obesity Science

We are, by now, well aware that obesity has extremely deleterious effects on overall health. From causing direct harm on the body to worsening or predisposing to comorbidities, obesity is a serious danger, making weight management counseling an important clinical priority.

Two studies initially presented at **ENDO 2019** examine some of the ways that losing weight can improve certain comorbidities; a third, also presented at **ENDO 2019**, looks at a new risk factor for developing obesity and offers a solution for circumventing it.

Obesity: A Real Headache

In “Effects of Bariatric and Non-Bariatric Weight Loss on Migraine Headache in Obesity. A Systematic Review and Meta-Analysis,” published in the *Journal of the Endocrine Society* in April, lead study author Claudio Pagano, MD, PhD, an associate professor of internal medicine at the University of Padova in Padova, Italy, and team aimed to tease out whether weight loss improves migraine characteristics like frequency per month, pain severity, duration of attacks, and disability related to headache such as diminished productivity.

“Obesity is associated with a variety of comorbidities, such as cardiovascular disease, diabetes, respiratory complications, and cancer,” Pagano says. “However, mechanisms underlying obesity complications, in particular, chronic low-grade inflammation, are also linked to the development of migraine. Several studies reported that weight excess is associated with increased prevalence of migraine headache and, in addition, with an increased risk of progression to a worse form of headache called chronic migraine.”

The team was also aware that patients with obesity have a greater incidence of migraine than non-obese individuals. “The most striking link is between obesity and migraine characteristics,” Pagano explains. “People with obesity have worse manifestations of migraine such as more days in a month with headache attacks, longer duration, and a deeper impact on their quality of life.”



In their meta-analysis of 473 pediatric and adult patients with migraine from 10 international studies that reported a behavioral or surgical approach to treat obesity, the team found that weight loss significantly improved all parameters of migraine, regardless of both weight at baseline and amount of weight lost. The improvements were also not correlated with how the weight was lost, whether through lifestyle changes or bariatric surgery, and they were seen in both adult and pediatric patients.

This finding makes clear that losing even a little bit of weight will have a big impact on the quality of life of a patient with obesity and migraine, but how and why this is so has not yet been established. “The mechanisms linking obesity, weight loss, and

migraine headache remain unclear,” Pagano says. “They may include alterations in chronic inflammation that characterizes both obesity and migraine, adipocytokines (namely, resistin, tumor necrosis factor alpha, c-reactive protein, interleukin-6, and adiponectin), obesity comorbidities such as obstructive sleep apnea, and other sleep disturbances often affecting obese patients, and behavioral and psychological risk factors.”

Putting Obesity to Bed

Speaking of obstructive sleep apnea (OSA), Yuanjie Mao, MD, PhD, assistant clinical professor, Ohio University Heritage College of Osteopathic Medicine and medical director, Ohio University Diabetes Institute in Athens, and his team derived

“Evidence suggests that a number of metabolic systems are entrained to circadian rhythms, including hormone, lipid and glucose concentrations, intestinal lipid absorption, and autonomic nervous system activity. Restriction of energy intake to a window of time and, by necessity, the extension of the fasting period may alter diurnal patterns and circadian rhythms in glucose and lipid metabolism in a manner that favors decreased obesity risk.”

— ADNIN ZAMAN, MD, UNIVERSITY OF COLORADO, DENVER, COLO.

“ This is the first study that actually showed that simultaneous CPAP treatment and dietary management enhances weight loss. Based on these data, in my approach, I will tell patients to start CPAP treatment immediately because it can actually help your weight loss. Once you have lost weight successfully, then we can reevaluate you to see if you still need CPAP treatment or not.”

— YUANJIE MAO, MD, PHD, ASSISTANT CLINICAL PROFESSOR, OHIO UNIVERSITY HERITAGE COLLEGE OF OSTEOPATHIC MEDICINE; MEDICAL DIRECTOR, OHIO UNIVERSITY DIABETES INSTITUTE, ATHENS, OHIO

their cross-sectional study from their patients themselves. “In patients with obesity, two-thirds will have sleep apnea,” Mao says. “Sometimes, we refer these patients to a sleep study and also tell them they might need sleep apnea treatment. The patients always ask us, ‘Do I need to start right now, or can I wait to see if losing weight will help my sleep apnea?’ This was a very common question, so I looked back through the literature to see if I could find an answer for my patients who wanted to avoid the burden of additional treatment.”

The literature, however, was wildly inconsistent. According to a small study and some animal studies, for example, participants with OSA gained weight due to lack of activity during the day as a result of being tired from lack of sleep the previous night. There were also hormonal changes, such as leptin resistance and secretion of ghrelin, both of which cause weight gain, as well as secretion of catecholamines and cortisol. Treating patients with continuous positive airway pressure (CPAP), however, reversed the decreased activity level and the hormonal disruption. On the other hand, a large-scale study demonstrated the opposite — that CPAP caused minor weight gain of a couple of pounds over the course of six months, possibly because, prior to CPAP treatment, they expended more energy in struggling to breathe. Notably, participants in the large-scale study were not on any kind of weight management program.

“There was no data on what happens when a patient is on both a dietary management program and CPAP treatment, so this is why we chose to look at that to see if CPAP treatment would cause weight loss or weight gain,” Mao explains. At



AT A GLANCE

- ▶ In patients with obesity and comorbid migraine attacks, weight loss reduces pain severity and frequency and duration of attack and improves quality of life independently of both the type of weight loss intervention and the amount of weight loss.
- ▶ When a patient with obesity is on dietary management and CPAP treatment, CPAP treatment can contribute to further weight loss, but when a patient is on CPAP treatment but not on dietary management, CPAP treatment may contribute to weight gain, which suggests that CPAP treatment should be implemented in tandem with weight loss interventions in a patient with OSA and obesity.
- ▶ Because “late-day eating” is associated with obesity regardless of caloric intake, restricting the feeding window by shifting it earlier into the day might be a future potential weight-loss method.

“Obesity is associated with a variety of comorbidities, such as cardiovascular disease, diabetes, respiratory complications, and cancer. However, mechanisms underlying obesity complications, in particular, chronic low-grade inflammation, are also linked to the development of migraine.”

— CLAUDIO PAGANO, MD, PHD, ASSOCIATE PROFESSOR OF INTERNAL MEDICINE, UNIVERSITY OF PADOVA, PADOVA, ITALY

their weight loss clinic in Athens, Mao and team started a very strict 16-week weight-loss program for 501 adults with body mass index (BMI) ≥ 30 but under 50. The diet consisted of a low-calorie (800 kilocalorie/day) meal replacement plus exercise and counseling with nutritionists. They excluded patients with uncontrolled diabetes, thyroid dysfunction, acute or chronic active infection, active malignancy, end-organ damage, and those requiring supplemental oxygen. The participants were broken down into three groups based on self-reported OSA symptoms: One asymptomatic group, one group with symptoms but not on treatment, and the third group with symptoms and also on CPAP treatment.

“After the 16-week program, we found that the group on CPAP treatment lost more weight than the other two groups, about 12 kg/26.5 lbs, and the groups not on CPAP lost 8 kg/17.5 lbs to 9 kg 19.8 lbs,” Mao says. “This is the first study that actually showed that simultaneous CPAP treatment and dietary management enhances weight loss. Based on these data, in my approach, I will tell patients to start CPAP treatment immediately because it can actually help your weight loss. Once you have lost weight successfully, then we can reevaluate you to see if you still need CPAP treatment or not.”

Mao says it makes sense to treat both conditions simultaneously as good current practice and also because of the potential for synergistic enhanced effects. In fact, the American Thoracic Society has issued “The Role of Weight Management in the Treatment of Adult Obstructive Sleep Apnea” in 2018, a guideline stating that: “Weight-loss interventions, especially comprehensive lifestyle interventions, are associated with

improvements in OSA severity, cardiometabolic comorbidities, and quality of life. The American Thoracic Society recommends that clinicians regularly assess weight and incorporate weight management strategies that are tailored to individual patient preferences into the routine treatment of adult patients with OSA who are overweight or obese.”

The team hopes to do an interventional study as a next step that will have larger statistical power. “For example, we could include one group for whom we start CPAP treatment and weight management right away, and, for another group, we wait until weight loss has occurred to see whether CPAP treatment is still warranted. It’s a very simple, practical question that lots of patients ask and doing this kind of study could help a lot of people,” Mao says.

Early Birds Get the (Leaner) Worms

Adnin Zaman, MD, of the University of Colorado in Denver, Colo., and team wanted to look more closely at the association between delayed eating, sleep timing, and body mass index (BMI) that has been established for at least the past decade. “Few studies have assessed both meal and sleep timing in adults with obesity. We wanted to understand whether temporal feeding and sleep patterns are associated with body composition to help us potentially design novel weight loss interventions,” Zaman explains. “It has been challenging to apply sleep and circadian science to medicine due to a lack of methods for measuring daily, free-living patterns of human behavior. We used a novel set of methods for simultaneous measurement of daily sleep, physical activity, and meal-timing

Results from a new study show that simultaneous CPAP treatment and dietary management played a role in weight loss.



patterns in order to evaluate relationships between these daily behaviors and body weight and fat mass.”

Zaman and team studied 31 healthy adults ages 18–50 years with a BMI of 27–45 kg/m² who were participating in a weight-loss trial either in a group on a reduced-calorie diet (RCD) or on RCD plus time-restricted feeding (TRF). Participants used wearable devices and apps for one week to collect baseline measures of activity, sleep, and energy intake: An accelerometer worn on the thigh monitored physical activity and sedentary behavior (time spent sitting/lying, standing, and stepping); a watch worn on the non-dominant wrist documented free-living sleep/wake patterns by measuring activity and light exposure; an app logged all mealtimes, energy-intake events, and feeding duration; and a continuous glucose monitor on the back of the upper arm measured plasma glucose levels. They also measured body composition, including fat mass, via dual-energy x-ray absorptiometry.

The results the team presented at **ENDO 2019** were based on baseline data, but that cohort has now completed the intervention, and a second cohort is underway. “We do not yet have findings to report on the success of the intervention since the study is ongoing,” Zaman says. “However, from this baseline data of cohort 1, we found that those who ate meals later into

the day — meaning that the midpoint of their duration of eating was later — also had a later bedtime (though they generally slept for the same amount of time as those who finished eating earlier on). Eating later into the day was also associated with a higher BMI and greater body fat.”

Prior studies have circled around the underlying mechanism for why eating earlier in the day may contribute to leaner body composition. For instance, a few studies have shown that consuming more calories in the morning instead of at night supports weight loss, even if the overall caloric intake and physical activity level is the same. Likewise, food intake at night is linked to obesity regardless of calories consumed. More recently, explains Zaman, “evidence suggests that a number of metabolic systems are entrained to circadian rhythms, including hormone, lipid and glucose concentrations, intestinal lipid absorption, and autonomic nervous system activity. Restriction of energy intake to a window of time and, by necessity, the extension of the fasting period may alter diurnal patterns and circadian rhythms in glucose and lipid metabolism in a manner that favors decreased obesity risk.” **EN**

— HORVATH IS A FREELANCE WRITER BASED IN BALTIMORE, MD. SHE WROTE ABOUT THE EFFECTS OF ETHNICITY ON WOMEN'S HEALTH IN THE SEPTEMBER ISSUE.

A BIOLOGICAL REALITY:

Caring for Transgender Patients

BY DEREK BAGLEY



While endocrinologists are fairly well versed in caring for transgender patients, primary care physicians need to better understand their roles and know when to seek the counsel and support of specialists.

Studies estimate that 1.4 million adults in the U.S. — 0.6% of the population — identify as transgender, and as that number continues to grow, so too does the number of hurdles and barriers that transgender individuals face when it comes to receiving optimal healthcare.

Endocrinologists should already be well versed in the healthcare challenges transgender patients must endure (the Endocrine Society published a Clinical Practice Guideline on the treatment of gender dysphoric/gender incongruent persons in 2017), but as transgender care expands and evolves, primary care physicians will need to be clear about their roles and when to seek the support of specialists.





“ I have people who want to be transformed overnight. Even if that’s not realistic, that’s what they would hope for.”

— JOSHUA D. SAFER, MD, MOUNT SINAI HEALTH SYSTEM AND ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI, NEW YORK, N.Y.

This past July, Joshua D. Safer, MD, and Vin Tangpricha, MD, PhD, of the Mount Sinai Health System and Icahn School of Medicine at Mount Sinai in New York, N.Y., and the Emory University School of Medicine and Atlanta VA Medical Center in Atlanta, Ga., respectively, published a review in *Annals of Internal Medicine* titled “Care of the Transgender Patient,” which details the specific medical issues this population faces.

Research shows that the biggest barrier to care reported by transgender people is lack of knowledgeable providers, and among the places that’s most evident is the primary care clinic. “The future state should be like for anything else medical where you go to your primary care provider,” Safer says. “If they have expertise, they help you directly. If they have less expertise, they have consultants that they use. So, the question is, how do we get to that situation? Because we’re dealing with a relatively straightforward hormone regimen for many of these transgender individuals, how do we get to a place where primary care providers recognize that that’s so?”

Indeed, primary care physicians are already experienced in prescribing hormone therapies, and hormone therapy for a transgender patient is probably less complicated than a sophisticated insulin or diabetes regimen. They should be able to handle treating a transgender patient, at least until

things get complicated enough for an endocrine referral — just like a patient with diabetes or a thyroid condition — but things aren't always that simple.

Skiping Out on Primary Care

In the introduction to “Care of the Transgender Patient,” Safer and Tangpricha write, “Historically, care was largely limited to select facilities. Improving access to medically and culturally competent care requires involvement of primary care providers outside such specialized settings.” Safer practices in New York City, where he sees transgender patients sent over from their primary care practices or even “skipping out” on their primary care physicians to go directly to the known areas where Safer’s transgender program is based. Or these patients are visiting other labeled LGBT programs in New York. “They should really be seen by their primary care provider who then calls for help as needed,” Safer says. “People shouldn’t have to ride for an hour on the train to get to a provider. They should be able to go to somebody close to home.”

But not all transgender patients live within an hour of New York City or some other select facility. For those living elsewhere in the country, the above dynamic is more extreme. “If you are coming from a small town in Alabama, you need your primary care provider to be able to step up and get consultation as needed,” Safer says. “You can’t have that person direct you to a so-called select facility and whatever might be nearby, like a Tulane [in New Orleans] or an Emory [in Atlanta]. That won’t be very convenient for you to be receiving your primary care.”

“A Biological Reality”

And even when transgender people present to the clinic, they can present in various ways, from being confident and clear about what they want out of treatment to being unsure about their gender identity. He says that in the past (and even up to now), the framework had been to consider identifying as transgender to be a mental health concern that required a significant amount of time investment from the provider, and to make certain that there wasn’t some other mental health concern at play. “The state where we should really be is that transgender is just a biological reality,” he says.

Safer says that some patients do come to the clinic and express their uncertainty about whether they are transgender, and he refers them to mental health professionals to help them work through this complex situation. But the overwhelming majority of patients come in and say, “I’m transgender. I’ve known it for X number of years. It took me X number of years to kind of even think about it and it makes total sense. It took me X amount of time to decide to do anything about it. I decided to do hormones. Here I am, what do I do next?”



AT A GLANCE

- ▶ **As the transgender population continues to grow, so too do the hurdles these patients face in receiving optimal healthcare.**
- ▶ **Endocrinologists should already be well versed in the healthcare challenges transgender patients must endure, but primary care physicians need to know when to seek the support of specialists.**
- ▶ **Transgender surgical plans shift over time, so providers should revisit surgical options with transgender patients periodically.**



“For people who can say it clearly and plainly like that, that’s pretty much is what it is,” Safer says. “Where we need to get to is primary care providers having some comfort that that’s pretty much the whole story, and having enough sophistication to understand that if the story is a little bit more nebulous, not rushing to do things.”

From “Extreme” to “Right”

One of the topics Safer’s and Tangpricha’s review covers is understanding surgical options for transgender individuals with consideration of the unique post-operative concerns associated with each. Safer and Tangpricha write that surgical plans shift over time, so providers should revisit surgical options with transgender patients periodically. About half of

medically treated transgender persons seek gender-affirming surgeries, with varying degrees of haste. “I have people who want to be transformed overnight,” Safer says. “Even if that’s not realistic, that’s what they would hope for.”

Not rushing to do things. Surgical procedures are, of course, often irreversible and require follow-ups specific to each surgery, so it’s important for providers to exercise caution and restraint here. In Safer’s experience, patients have come in adamant about surgery, but during the course of treatment their thinking evolved, and they decided to try hormones and they were happy with the results. A transgender woman may want facial feminization surgery, but then she’s prescribed hormones and follows that regimen and decides she doesn’t want someone cutting into her face after all.


“If you are coming from a small town in Alabama, you need your primary care provider to be able to step up and get consultation as needed. **You can’t have that person direct you to a so-called select facility and whatever might be nearby, like a Tulane [in New Orleans] or an Emory [in Atlanta].** That won’t be very convenient for you to be receiving your primary care.”

— JOSHUA D. SAFER, MD, MOUNT SINAI HEALTH SYSTEM AND ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI, NEW YORK, N.Y.

Still, there are transgender people who opt for genital surgeries and never look back. They've been on their hormone treatments for years, they've been living as a man or a woman for years, and they finally tell Safer: "You know what? [Genital surgery] seemed kind of extreme at the time, but now it seems kind of right."

An Evolution of Care

Earlier this year, the Trump administration announced its plans to roll back the part of the Affordable Care Act that protects transgender people from healthcare discrimination. The first rule of medicine is "Do no harm," so it's incumbent on healthcare professionals to stand up and recognize that transgender patients are worthy of the same care as everyone else. The challenge of accessing culturally competent care contributes to health disparities experienced by transgender individuals, such as increased rates of cancers, substance abuse, mental health concerns (including suicide), and chronic diseases. Or as Safer puts it, "If you treat people badly, you have bad outcomes."

Endocrinologists, especially, should be the experts in their communities when it comes to caring for transgender patients. And primary care physicians should be able to recognize when they need an endocrinologist's help. "The happy future state is that all endocrinologists should have some minimal training in assisting with transgender hormone care," Safer says, "that we're evolving to make that a standard for fellowship training, but that's going to have to include people who went through their fellowship, coming back and kind of getting retrained a little bit, and then recognizing how they can be supportive of the primary care providers in their community or in their environment." 





Social SCIENCES

Using social media in your laboratory can help you collaborate while simultaneously promoting your research to interested colleagues around the world.

BY GLENDA FAUNTLEROY SHAW

What started in the late '90s as a "social" way to connect with friends and family, social media has exploded into the habits of Americans' everyday lives. Multiple social media platforms are relied on heavily to spread information in the worlds of entertainment, news, and politics, and they have become increasingly more popular and important to the science and research communities.

About 68% of Americans say they get some of their news from social media, according to a 2018 Pew Research Center survey. Facebook — which recently celebrated its 15th anniversary — is still the most popular, with about four in 10 Americans (43%) getting news from the platform. YouTube and Twitter follow as second and third most common with 21% and 12% of respondents, respectively, getting news there.

The reach and impact of social media is indisputable, and remarkable things can happen when scientists adopt it into their regular lab life. Social media offers the opportunity for researchers to share their work across the globe with just a few keyboard clicks. It is just not enough to publish peer-reviewed journal articles to gain an audience for your research. Having a presence on social media is key

“It is just not enough to publish peer-reviewed journal articles to gain an audience for your research. Having a presence on social media is key to keeping up with new findings, tools, and state-of-the-art trends—oftentimes months before they get printed.”

Logos: Shutterstock.com

to keeping up with new findings, tools, and state-of-the-art trends—oftentimes months before they get printed.

Consider a social media presence as the first and most crucial step in branding your laboratory. Twitter, Facebook, and YouTube are excellent channels for strengthening an institution's name and reputation. Every Fortune 100 company has their own Twitter channel, and most every science publication has adopted social media platforms to spread news at a faster pace.

Social media can give immediate feedback on your research and help find new collaborators and potential donors much easier than days of old. It has also turned the traditional methods of recruiting study participants on their head. Everything is faster, less expensive, and more effective when potential study enrollees can find you on social media.

Where Scientists Are Social

When it comes to building an online presence, four sites top the lists for scientists:



ResearchGate. With more than 15 million members, ResearchGate is the largest academic social networking site for scientists and researchers. The site's founders claimed it their mission to “connect the world of science and make

research open to all.” Members (it's free to join) can share work from any stage of the research cycle, find research to help your work, and discuss publications with authors and other experts. Recently, ResearchGate and Springer Nature announced a pilot partnership to make 23 of the Spring Nature journals available to view and download on the networking platform without a subscription.



Facebook. Recruiting and engaging with the general public are often the most cited reasons why scientists develop a Facebook page. As the most popular platform, Facebook comprises member groups of a multitude of health conditions, geographic areas, and special interests. Labs also use their page to share photos of their facility and staff.



Twitter. At least 45,000 scientists around the world use Twitter alone, according to a 2018 *Science* article. Twitter allows for short — 280 characters max — messages with links to videos or articles. It offers real-time communication with a wide audience, and live-tweeting from conferences is increasingly popular, allowing attendees to deliver session highlights to interested colleagues and followers. Twitter followers can include journalists, journal editors, and members of the regular public who can increase your world reach in a matter of minutes. A recent editorial in *Nature* discussed how in recent years Twitter has grown as a free global platform to rapidly disseminate both published and unpublished research advances. “Circulating newly published papers allows for more exposure and has been linked to increased citations,” according to the article. “Twitter mentions are an important alternative way of rigorously tracking the non-scholarly attention a paper receives.”



LinkedIn. For scientists looking for professional relationships, creating a good LinkedIn profile is a must-do. LinkedIn has strong appeal across all age groups, and users can network to find new colleagues, post news links, advertise job opportunities, and use it as a directory to learn about the industry and the competition. 

Endocrine Society Partners with Beautycounter to Educate Congress About EDCs



Photos: Larry Wesley Photography

On Thursday, September 12, the Endocrine Society participated in the Coalition for Health Funding Public Health Fair on Capitol Hill. The fair has become an exciting annual event in which members of the public health community help demonstrate the reach of public health and the need for continued federal funding. Our goals during the fair were to share the research our members conduct on how endocrine-disrupting chemicals (EDCs) in cosmetics and other consumer products can be linked to human health harms; how people can avoid exposure to harmful EDCs; and the importance of funding to continue research. We also partnered with Beautycounter, a company that is committed to advancing safer skin care and cleaner cosmetics that avoid EDCs, to show how brands can make their products safer by removing harmful ingredients.



Numerous congressional staff and representatives from other public health agencies visited our booth and wanted to learn more about EDCs in cosmetics and other personal care products and what they could do to reduce their exposures. They also had the opportunity to sample products supplied by Beautycounter. The booth was a great way to increase the visibility of endocrinology, endocrine-related research, and the Society on Capitol Hill.



As we met with attendees, we shared our science-backed information on EDCs and urged staff to support the Personal Care Products Safety Act (PCPSA), introduced earlier this year by Senators Dianne Feinstein (D-CA) and Susan Collins (R-ME). The PCPSA would give the FDA additional necessary authority to review chemicals in personal care products and regulate harmful chemicals when necessary to protect public health. The Endocrine Society has been a vocal advocate for the PCPSA, which also calls for the FDA to review several chemicals that are known to have endocrine-disrupting properties as part of its initial chemical reviews under the new law.

The Endocrine Society participated in the Coalition for Health Funding Public Health Fair on Capitol Hill to help raise awareness on the dangers of endocrine-disrupting chemicals.

Endocrine Society Members Rally for Medical Research

On September 19, members of the Endocrine Society joined over 300 advocates in Washington, D.C., to visit members of Congress and call for increased funding for biomedical research as part of the Rally for Medical Research Hill Day.

Endocrine Society members Patricia Morris, Alina Nico West, Jordan Hamden, Elaine Alarid, and Genevieve Neal-Perry met with congressional offices and staff to raise the profile of endocrine research and emphasize the need to provide steady, sustainable increases in funding for the National Institutes of Health (NIH).

During a reception the night before, NIH Director Francis Collins, MD, PhD, delivered remarks and thanked participants for their advocacy. House Appropriations Labor-HHS-Education Ranking Member Tom Cole (R-OK) also spoke to the rally participants over breakfast just before the various groups departed for their meetings on Capitol Hill.

Now in its seventh year, the rally is a high-profile event on the Hill and the Endocrine Society is recognized for consistently bringing one of the largest contingents. The Rally Hill Day has been successful in influencing increased funding for the NIH — for the past four years, NIH funding has increased while other programs have not seen support — because the event gathers the broad research community around one message. The Endocrine Society supports this event and message, but also finds it is a way for us to talk about the value of endocrine-related research.

During the Rally, we went to offices all over Capitol Hill to make sure that members of Congress heard three consistent messages loud and clear:

- ▶ We appreciate the \$2 billion increase for the NIH in FY2019 and for the Congress' continued efforts to prioritize medical research;
- ▶ We need robust, sustained, and predictable funding by providing at least the House-passed increase of \$2 billion for the NIH in FY2020, for a total funding level of at least \$41.1 billion; and
- ▶ Members of Congress must work in a bipartisan way to complete the FY2020 appropriations in a timely manner.

The Rally came at a critical time in the appropriations process as Congress struggles to pass final appropriations bills due to disagreements over the inclusion of provisions related to women's health. As this article went to press, there is concern that the most likely path forward is an extended continuing resolution, which is disruptive to the medical research system as it increases uncertainty and adds unnecessary delays in the path toward lifesaving research.

To keep pressure on Congress and maintain momentum from the Rally, visit the Endocrine Society's advocacy website and take action using our online campaign at www.endocrine.org/takeaction. **EN**



On September 19, the Endocrine Society joined over 300 advocates in Washington, D.C., at the Rally for Medical Research Hill Day.

It's Easy Being Green

COMPILED AND WRITTEN BY COURTNEY CARSON

Laboratories are one of the next major frontiers in sustainability. Laboratories consume as much as five times more energy per square foot than typical offices, and the opportunity for energy reduction is enormous.

While the combination of energy-intensive equipment, round-the-clock operations, and unique ventilation requirements do pose a challenge when looking at reducing a lab's footprint, there are indeed steps to take to reduce the current consumption. In the past, research facilities have offered disproportionate opportunities for water conservation, waste reduction, and more sustainable selection of reagents and process equipment.

But as the nation — and the world — take steps to make everything from energy sources to everyday items more environmentally friendly, laboratories are following suit. One organization on the forefront of this movement is My Green Lab, a nonprofit formed to unify and lead scientists, vendors, designers, energy providers, and others in a common drive toward a world in which all research reflects the highest standards of social and environmental responsibility.

Here is a roundup of some items and resources that can be used by labs that want to focus on laboratory sustainability.

► Look for the ACT Label

One of the most straightforward ways to ensure laboratory products are more environmentally friendly is to purchase items that contain the ACT label, an eco-nutrition label for lab products, including consumables, chemicals, and equipment. Some products containing the ACT label include Miele Laboratory Glassware Washer PG8583, and the Priorclave 320L Autoclave: Non-Vacuum Cycle.

<https://act.mygreenlab.org/>



ACT.

Accountability, Consistency, Transparency.
The Environmental Impact Factor Label

Product Name

Manufacturing Location

Manufacturing

Manufacturing Impact Reduction

Renewable Energy Use

Responsible Chemical Management

Shipping Impact

Product Content

Packaging Content

User Impact

Energy Consumption

Water Consumption

Lifetime Rating


End of Life

Packaging

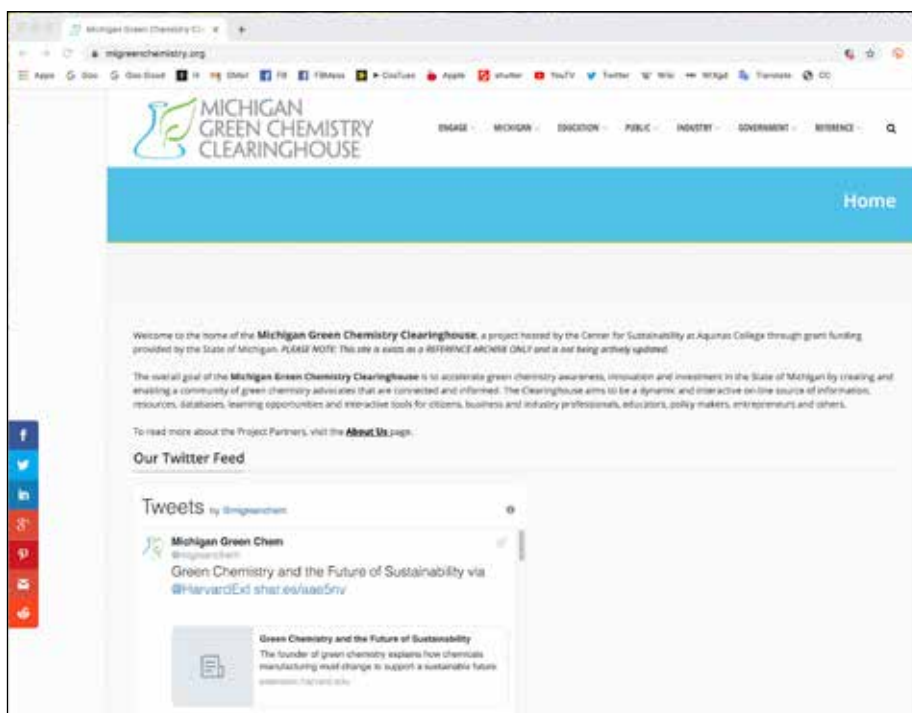
Product

Environmental Impact Factor

Label Valid Through

My Green Lab  mygreenlab.org

**Energy and water consumption reported on this label, all other values on a scale of 0-100. 1 indicates the least environmental impact and 100 indicates the greatest.



◀ MilliporeSigma DOZN

Implementing chemical substitutions is another way to reduce the environmental impact of experiments. MilliporeSigma DOZN is an online tool that identifies opportunities for green chemistry substitutions for individual chemicals and chemical processes. A resource to identify hazardous materials and offer more benign alternatives, Michigan Green Chemistry Clearinghouse can be found online at: www.migreenchemistry.org.

▶ Eppendorf CryoCube F740 Air-Cooled Freezer

Designed for individual labs, the My Green Lab certification program identifies best practices for energy-saving and water-saving measures, reducing waste, and eliminating the use of hazardous and toxic chemicals. The assessment associated with the certification allows labs to receive recognition for the safe, sustainable practices that are already in place, and provides suggestions for labs to reduce their environmental impact. One of those suggestions includes equipping a lab with energy-efficient freezers and refrigerators. While it used to be a challenge to locate environmentally friendly cold storage for labs, a plethora of options are now available.

One example is the Eppendorf CryoCube F740 Air-Cooled Freezer, designed to store a large amount of samples securely while maintaining optimal energy usage.

www.eppendorf.com/US-en/



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Endocrinologist

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Severe Hypoglycemia

THE MORE YOU KNOW

Hypoglycemia occurs when the amount of glucose (sugar) in the blood is lower than it should be. It becomes severe when levels are below 40 mg/dL and the patient isn't able to function. Severe hypoglycemia can occur in patients with diabetes who take insulin or certain medicines like sulfonylureas. Effective prevention and treatment require a collaboration between you, your family and friends, and your healthcare team. It is important to talk honestly, ask questions, and make sure you understand your care plan. Healthcare providers should provide training on blood glucose management to patients and caregivers and ensure that patients have all the necessary information for self-care.

Studies show that just under 20%—or one-fifth—of all hospital admissions are due to severe hypoglycemia (less than 40 mg/dL).

Think

As a patient, what do I need to KNOW?

When blood glucose levels begin to drop, quick action can help you avoid a trip to the emergency department. **Do you know what to do?**

- What is my blood glucose (sugar) target or goal?
- What are the symptoms of hypoglycemia?
- Do I understand my blood glucose (sugar) management plan?
How does it affect my daily routine?
- What are my concerns? What am I confident about?
- Do I always have symptoms of hypoglycemia when my glucose is less than 70?
- Do I know how to treat it?

Ask

What should I ask my provider?

Talk with your healthcare provider. Get answers to any questions you have. Be sure to understand how to prevent and treat severe hypoglycemia.

- What is severe hypoglycemia? How can I prevent it?
- Am I at risk for severe hypoglycemia?
Do I take medicines that might cause it?
- What are the symptoms of severe hypoglycemia?
What steps should I take if I notice them?
- What should I have in my emergency kit? Where should I keep it?
- How can my friends, family, and caregivers help? What should they do if I am unable to communicate? How do they give me emergency glucagon?

Inform

What do I need to KNOW?

Prevention, preparation, and action are the keys to addressing severe hypoglycemia. Recognize hypoglycemia and act early enough to keep blood glucose (sugar) from dropping to dangerous levels.

- Following my treatment plan can help prevent hypoglycemia.
- Blood glucose (sugar) can drop quickly. It is essential to be prepared to treat hypoglycemia at all times.
- Fast-acting sugar (glucose tablets, orange juice, hard candy) can treat hypoglycemia symptoms early and help prevent blood glucose from dropping to severe levels.
- Glucagon is the only emergency rescue treatment for severe hypoglycemia. It should be kept nearby at all times.
- Treating severe hypoglycemia usually requires help from others to administer glucagon.

As a provider, what do I need to KNOW?

Each person is different. Focusing on an individual's unique lifestyle is key. What do you need to know about your patient to provide the best care?

- What is the patient's self-care plan?
- Is the patient at high risk for hypoglycemia? Is the patient at high risk for hypoglycemia unawareness?
- What is a safe target glucose or A1C for the patient?
- How much support do they have?
- What are their areas of concern?
- What do they know about hypoglycemia?
- Do they know how to treat it?
- Have they filled a prescription for glucagon? If not, what are the barriers?
- Do they know how emergency glucagon is administered?



What should I ask my patient?

Begin the conversation. Learn the patient's past experiences with hypoglycemia and how they were handled. Focus on how you can help the patient better understand and manage hypoglycemia.

- Do you know what hypoglycemia is and how to prevent it?
- Do you know the symptoms of hypoglycemia? Have you had any of them? How often?
Are you able to recognize or feel those symptoms?
- What do you do to treat hypoglycemia?
- Have you ever lost consciousness or gone to the hospital because of hypoglycemia?
- Do you test your blood glucose? Can you show me how you test it?
- Below what level do you start having symptoms of hypoglycemia? When do you notice your blood glucose is going low (after exercise, during the night, etc.)?
- Do you have a glucagon emergency kit? Where do you keep it?
- Is there someone who knows how to give you your emergency glucagon? Are they comfortable with doing it? Do they know what to do afterward?

What does my patient need to KNOW?

As a provider, **you play a key role** in making sure the patient has the necessary information to help prevent, prepare for, and treat low blood glucose. The information you provide can help decrease hospital visits, increase savings, and improve patient well-being.

- Blood glucose levels can drop, but that does not have to lead to severe hypoglycemia.
- Checking blood glucose at the first sign of hypoglycemia can lead to action and prevent blood glucose from going too low.
- It is important to always be prepared for a severe hypoglycemia emergency.
- If not treated, severe hypoglycemia can lead to serious issues, such as seizures, coma, and even death.
- It is essential to fill your glucagon prescription and keep it with you.
- Educating family or friends on low blood glucose and its treatment is crucial.

What Is Glucagon?

In the body, the level of glucose (sugar) in the blood is controlled by hormones. One is insulin. Another is glucagon. Glucagon and insulin are closely related. They work together to help keep blood glucose levels stable. Put simply, insulin keeps glucose levels from going too high, and glucagon keeps them from going too low.

If you are at risk for severe low blood glucose, you will be given a prescription for rescue glucagon. This medicine will reverse a severe low blood glucose event. Because severe low blood glucose causes confusion and unconsciousness, it is unlikely you can give yourself the glucagon. Therefore, it must be administered by a trained caregiver or bystander.

Currently, rescue glucagon is available only in injectable form. It comes in a powdered form along with a syringe filled with fluid. The powder and liquid are mixed just before the injection is given.

Other methods to deliver emergency glucagon, including an injection pen and nasal spray, are on the horizon.

Be sure to fill your glucagon prescription and carry it with you. It could save your life!

Patients Have Questions. We Have Answers.

The Hormone Health Network is your trusted source for endocrine patient education. Our free, online resources are available at hormone.org.

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