

JULY 2021

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

Endocrine news

Maternal INSTINCTS

Two **ENDO 2021** studies revealed how pregnancy is impacted by endocrine-disrupting chemicals ... from both ends of the umbilical cord. As this new research shows, both mothers and offspring feel the effects of these chemicals, sometimes for generations.

The long-
ranging
effects of
EDCs on both
offspring and
mothers.

KIDS IN LOCKDOWN:
COVID-19's impact on children with type 1 diabetes

CEU 2021 PREVIEW:
What endocrinologists need to know about fatty liver disease

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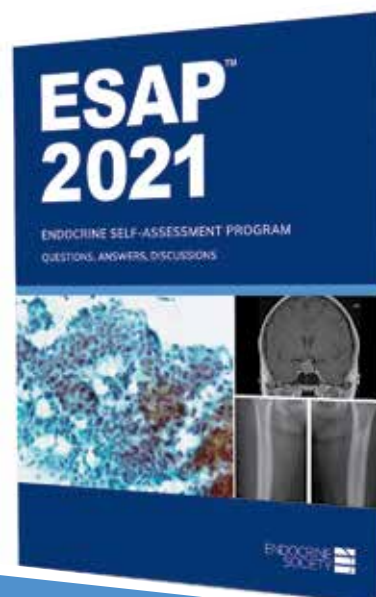
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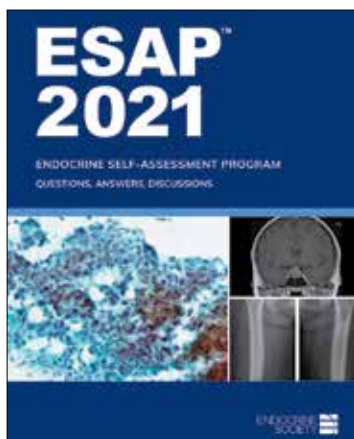
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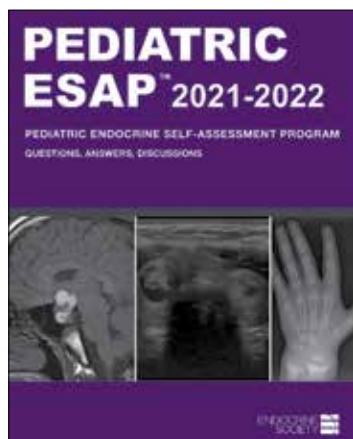
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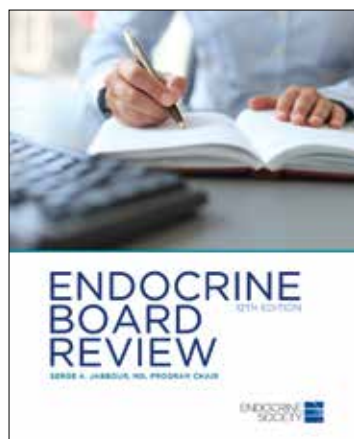
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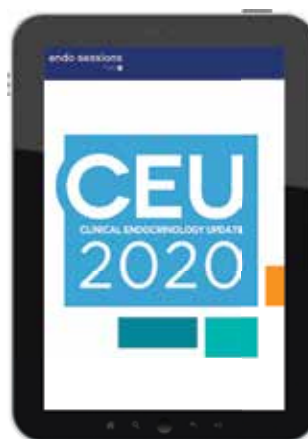
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Immerse Yourself in the Latest Advances at Our Fall Meetings

We are thrilled to deliver the most up-to-date educational content during our Clinical Endocrinology Update (CEU) and Endocrine Board Review (EBR) meetings this fall.

A record number of attendees joined us last year for the first-ever virtual CEU and EBR events, with more than 1,100 participants attending CEU 2020 and more than 600 taking part in EBR 2020. We are looking forward to having another large crowd at this year's events.

I am proud of the way the Society has pivoted to provide the field's leading educational meetings in a virtual format during the COVID-19 pandemic, and we are pleased to facilitate your continued learning without interruption. Whether you are joining us for a basic science or a clinical meeting, the virtual format and expert faculty provide a learning experience that makes it easy — and convenient — to absorb knowledge.

For researchers, we will be offering a fascinating New Frontiers in Basic Science event this fall focused on aging. This year's theme is focused on technological innovations in research methodologies in the study of aging and age-related disorders. This is such an important area of study as our global population ages. Stay tuned for more details!

For clinicians in our field, CEU provides the opportunity to learn about the latest advances directly from the endocrinology world's brightest minds. I always discover something new and am looking forward to updates on the diagnosis and treatment of endocrine conditions at CEU this year.

Based on participants' feedback, we have evolved this year's CEU program to feature three concurrent sessions, all of which will have ample question and answer periods. Our virtual program will continue to include many Meet the Professor and Master Clinician Sessions, as well as a few debates about controversial topics.

Over three days, CEU 2021 will deliver 27 hours of programming and 36 sessions where you can connect in real time with leading endocrine experts who can answer questions about your toughest patient management cases. The sessions span seven topical areas, including adrenal, pituitary, and reproductive endocrinology. If you miss a session, the content will be available within 72 hours after being presented, and you will have access to all sessions for the next year and a half.

For those who are preparing to certify or recertify with the American Board of Internal Medicine (ABIM), we are offering our virtual case-based EBR course September 22 – 24.

The mock exam format offers a strong overview and emulates the format of the ABIM's Endocrinology, Diabetes, and Metabolism Certification Examination.

EBR includes nine comprehensive topical mock exam presentations covering 220 case-based questions across the spectrum of endocrinology. With this course, you gain access to:


“

I am proud of the way the Society has pivoted to provide the field's leading educational meetings in a virtual format during the COVID-19 pandemic, and we are pleased to facilitate your continued learning without interruption.

”

- ▶ *EBR 13th Edition* book (contains all 220 case-based questions with detailed answer rationale) — available in August so you can start preparing;
- ▶ Interactive mock exam sessions (on-demand) — available in August 18; and
- ▶ Corresponding Q&A sessions with the experts (live).

In addition to the robust education program, both CEU and EBR will feature a virtual exhibit hall where you can interact with top medical and pharmaceutical companies to learn about their products and services. This is your chance to directly ask questions and learn more about the newest products and services to improve your practice.

I hope you will join me online September 10 – 12 for CEU and September 22 – 24, 2021, for EBR's live question and answer period with the faculty. We can't wait to have you take part in our exciting slate of fall educational events! 

Carol H. Wysham, MD
President, Endocrine Society



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JULY 2021

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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.

Endocrine Society Meetings: The Best of the Best

As this issue heads your way in the middle of summer, there is certainly no sign of any of the typical summer doldrums on these pages and that is largely due to the amazing events the Endocrine Society is known for around the world.

Not only does this issue feature research presented at the first-ever all virtual **ENDO 2021**, but we are also highlighting what attendees can expect from the Endocrine Society's Clinical Endocrinology Update (CEU) 2021 meeting held from September 10 to 12. Like the above-mentioned **ENDO 2021**, both CEU 2021 and the Endocrine Board Review 2021 — taking place September 22 – 24 — will be all-virtual.

First off, as we look back at the voluminous amount of research that was presented at **ENDO 2021**, we have homed in on studies that focused on pediatric endocrinology:

- ▶ **Kids in Lockdown: How COVID-19 Affected Children with Type 1 Diabetes** – On page 22. Kelly Horvath takes us into the homes of those young patients with COVID-19 who were also dealing with type 1 diabetes. “There is some data available that shows both type 1 and type 2 diabetes can be associated with increased risk of complications with COVID-19 in adults as well as independently associated with a higher risk of in hospital death from COVID-19,” says Manish Raisingani, MD, University of Arkansas for Medical Sciences, Arkansas Children's Hospital, Little Rock, Ark., “but there is very limited data available for pediatric type 1 diabetes and COVID-19 infections.”
- ▶ **Mother and Child: Pregnancy Exposures Can Have Unintended Effects in Later Life for Both Offspring and Mother** – Here Horvath looks at two separate studies that examined the long-lasting effects of endocrine-disrupting chemicals (EDCs) on the health of not only the offspring but the mothers who may have been exposed during pregnancy (page 26). “Our study is expanding that vulnerable period to also really appreciate the fact that we can't just worry about the fetus, we should also worry about the mom,” says Laura N. Vandenberg, PhD, School of Public Health, Division of Environmental Health Sciences, University of Massachusetts, Amherst, Mass. “We have not spent nearly enough attention thinking about how EDCs might affect their health.”



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This study builds on work we have published in the last two or three years with some other chemicals that are saying exactly this: mom matters, too.”

Now, as we look ahead to September, we have included highlights of what you can expect from this year’s multilayered CEU 2021. Long regarded as one of the most important educational events for clinical endocrinologists around the world, this year’s CEU will be another all-virtual conference that will present attendees with the latest advances and critical issues in the field. We have highlighted a couple of the sessions in this issue:

► **Does Testosterone Therapy Have a Place in Treating Women?** – On page 36, Eric Seaborg delves into this controversy as he details the talking points from one of this year’s CEU Debates. The speakers will be Susan R. Davis, MBBS, FRACP, and Margaret E. Wierman, MD, two contributors to a global consensus statement who will discuss when you should and should not treat female patients with testosterone therapy in the session “Endocrine Debate: Testosterone Therapy in Women: Never or Sometimes?” No doubt if this year’s meeting were in-person, this session would be “standing room only!”

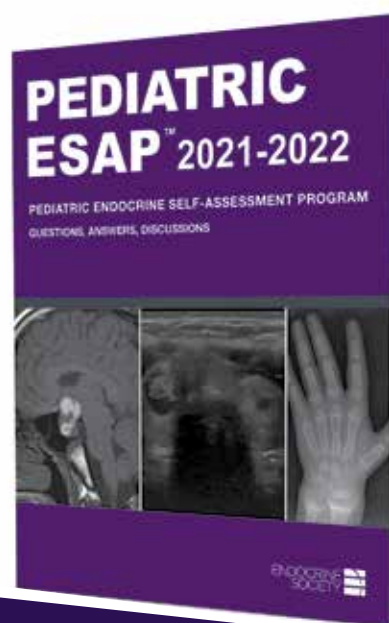
► **Fatty Liver Disease: What Endocrinologists Need to Know** – Senior editor Derek Bagley speaks to Kenneth Cusi, MD, chief, Division of Endocrinology, Diabetes, and Metabolism, University of Florida, Gainesville, Fla., about how the rates of nonalcoholic fatty liver disease are rising at an alarming rate, along with obesity and diabetes rates (page 32). Cusi’s CEU session, “What Endocrinologists Need to Know about Diagnosis and Management of Fatty Liver,” will detail how to identify fatty liver in patients early on as well as how to treat this complex disease.

For more information about CEU 2021 and EBR 2021, both taking place in September, go to: www.endocrine.org/ceu2021 or www.endocrine.org/ebr2021 to find out more.

If you have any ideas or suggestions for stories you’d like to see in *Endocrine News*, feel free to contact me at: mnewman@endocrine.org. 

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

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Endocrine Society Applauds AMA Resolution Supporting Access to Gender-Affirming Care



On June 15, the Endocrine Society praised the American Medical Association's (AMA's) House of Delegates for passing a resolution opposing efforts to criminalize medical care for transgender youth.

The resolution, which cites the Endocrine Society's Clinical Practice Guidelines on transgender care, makes it AMA policy to oppose the criminalization and otherwise undue restriction of evidence-based gender-affirming care.

The Endocrine Society opposes legislative efforts to prevent transgender and gender-diverse adolescents from accessing gender-affirming medical care. These bills do not conform to medical evidence and clinical practice.

More than 20 states have introduced or are considering legislation prohibiting gender-affirming care for minors. Arkansas passed a law April 6 prohibiting gender-affirming care for minors, the first law of its kind in the U.S.

These policies criminalize physicians' efforts to provide needed medical care and disregard widely accepted medical evidence, including the Society's internationally recognized Clinical Practice Guideline. Scientific evidence shows that there is a durable biological underpinning to gender identity.

When young children experience feelings that their gender identity does not match their sex recorded at birth, the first course of action is to support the child in living according to their gender identity and to provide mental health support, as needed.

After transgender and gender diverse minors start puberty, prescribing hormone blockers to delay puberty is the recommended strategy if desired and if diagnostic and treatment criteria are met. Hormone blockers are commonly prescribed to delay puberty in children who experience early puberty. This treatment, which is reversible, gives adolescents more time to explore their options.

Being unable to access medical care puts transgender and gender-diverse youth at an elevated risk of suicide or self-harm. A study published in the journal *Pediatrics* last year found that transgender and gender-diverse youth who wanted to delay puberty and could not access the treatment had higher rates of suicidal thoughts over their lifetimes than those who wanted the treatment and received it.

The Society is among the organizations submitting a written intervention to the United Kingdom's High Court as part of the appeal of *Bell v Tavistock and Portman NHS Health Foundation*, a case where the High Court ruled in December 2020 that adolescents younger than age 16 could not give informed consent to take hormones to delay puberty. The appeal is slated to be heard June 23 – 24. The ruling threatens to block transgender and gender-diverse teenagers from accessing the medical care they need.

Medical evidence, not politics, should inform treatment decisions.



For Members Only: The Endocrine Feedback Loop Podcast

If you haven't already, tune into Endocrine Feedback Loop, a journal club podcast series brought to you as a members-only benefit of the Endocrine Society.

Each episode features an expert educator and a topical specialist dissecting recently published journal articles and discussing implications for clinical practice. Using recently published articles from the Society's clinical journals, Endocrine Feedback Loop mirrors the journal clubs traditionally found at many educational institutions and connects faculty from around the world. This podcast series seeks to provide endocrinologists in all stages of their careers with supplemental insight into hot topic issues and study designs.

Led by a team of expert endocrine educators, this podcast series is released on a monthly basis with fresh content from faculty in every episode. Listen each month for an in-depth analysis of an important article to understand how it advances the field and informs clinical practice. Tune in — anywhere, at any time.

The podcast is hosted by Chase Hendrickson, MD, MPH, who practices general endocrinology at the Vanderbilt University Medical Center, where he is an associate program director for the endocrinology fellowship program. His interests include endocrine education, teaching inferential methods, and quality improvement.

Of course, this series covers a wide and vast array of endocrine topics, so be sure to visit the podcast site often. The episodes have covered a wide range of topics including

"Confirmatory Testing in Primary Aldosteronism," "Hydrocortisone Stress Dosing," "Assessing Delayed Puberty," "Alternatives to Surgery for Thyroid Cancer," "Imaging in

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Primary Hyperparathyroidism," "New Therapy for Adrenal Insufficiency," "A1c Trajectories During Adolescent-to-Adult Transition," "Complications of Cushing Syndrome," and much more.

The Endocrine Feedback Loop podcast is one of the many benefits of being an Endocrine Society member. To begin listening, go to: www.endocrine.org/journals/endocrine-feedback-loop-podcast-series.

Endocrine Society Joins UK High Court Appeal for Transgender Teens' Access to Care

The Endocrine Society and a coalition of LGBTQ+ youth and reproductive health organizations argued in a joint submission to the High Court of England and Wales that transgender teenagers should be able to give informed consent to treatment the same way teenagers with other medical conditions can.

The coalition submitted a written intervention as part of the appeal of *Bell v Tavistock and Portman NHS Health Foundation*, a case in which the High Court ruled in December 2020 that adolescents younger than age 16 are not competent to give consent to treatment to delay puberty. The ruling threatens to block transgender and gender-diverse teenagers from accessing the medical care they need.

“The current system forces transgender and gender diverse teenagers to operate under a different set of rules from other adolescents when they seek medical care,” says Sabine Hannema, MD, PhD, a pediatric endocrinologist at Amsterdam UMC

in the Netherlands, a co-author of the Society’s Clinical Practice Guideline on Endocrine Treatment of Gender-Dysphoric/Gender-Incongruent Persons and a co-author of the World Professional Association for Transgender Health statement responding to the *Bell v Tavistock* ruling.

“Gender-affirming care for transgender and gender diverse teens in the context of a multidisciplinary approach is widely accepted as standard practice among major medical associations worldwide,” Hannema says. “Delaying puberty and providing teens with access to gender-affirming hormone therapy, when administered by a trained professional following a thorough assessment, improves psychological functioning and is potentially life-saving.”

A June 2020 study published in the *Journal of Adolescent Health* found that transgender and gender-diverse youth who had started treatment to delay puberty had lower suicidality and improved psychological functioning, comparable

Protesters at Trans Pride 2020 in Picadilly, London, UK on September 12, 2020.



Photo: JessicaGirvan/Shutterstock.com

to the general population, while those who had not yet begun treatment were found to have higher psychological problem scores and increased rates of suicidality.

Major international medical organizations — including the Endocrine Society, the World Professional Association for

“

Delaying puberty and providing teens with access to gender-affirming hormone therapy, when administered by a trained professional following a thorough assessment, improves psychological functioning and is potentially life-saving.

— SABINE HANNEMA, MD, PHD, PEDIATRIC ENDOCRINOLOGIST,
AMSTERDAM UMC, THE NETHERLANDS

”

Transgender Health, the European Society of Endocrinology, the European Society for Pediatric Endocrinology, and the Pediatric Endocrine Society — agree on the appropriate care for transgender people. Scientific studies support the concept that biological factors, in addition to environmental ones, contribute to the development of gender identity.

Prior to puberty, transgender children are encouraged to explore their gender identity. A mental health professional can provide support in this process. After transgender and gender-diverse minors start puberty, prescribing hormones to delay puberty is the recommended strategy after careful screening, if it is desired by the patient and if diagnostic

and treatment criteria are met. This treatment, which delays puberty in a reversible manner, gives adolescents more time to explore their options.

Treatment to delay puberty is “only prescribed to children who suffer strong and persistent (gender dysphoria) with the purpose of avoiding the predictable and intense distress of puberty,” the interveners wrote in the written submission to the court. “As a result, withholding treatment is not a neutral option. Children denied (hormones to delay puberty) become bystanders as their bodies change in ways that they know to be irreversible; they develop an Adam’s apple, their voice drops, their hips widen, knowing that these features will affect how they see themselves and are seen by others for the rest of their lives.”

The interveners in the case include Gendered Intelligence, a community interest group for trans youth, and youth sexual health organization Brook, as well as the Endocrine Society. The intervention is supported by the Good Law Project’s Legal Defence Fund for Transgender Lives.

“Healthcare providers have prescribed treatment to delay puberty for youth experiencing early puberty for decades without issue or public outcry. Transgender and gender diverse adolescents deserve the same access to medical care,” says Joshua Safer, MD, of the Mount Sinai Center for Transgender Medicine and Surgery and Icahn School of Medicine at Mount Sinai in New York, N.Y. Safer is a co-author of the Society’s Clinical Practice Guideline on Endocrine Treatment of Gender-Dysphoric/Gender-Incongruent Persons as well as the Society’s transgender medicine position statement.

“The High Court’s decision, if it is allowed to stand, would set a harmful precedent preventing physicians from providing transgender and gender diverse youth with high-quality medical care,” Safer says.



BY DEREK BAGLEY
Senior Editor

TRENDS & INSIGHTS

Sardine-Enriched Diet Could Lessen Likelihood of Developing Diabetes



“

Consuming sardines twice a week for one year could reduce the risk of developing type 2 diabetes in a population with prediabetes and old age.

”

Consuming a sardine-enriched diet may prevent the development of type 2 diabetes, according to a study recently published in *Clinical Nutrition*.

Researchers led by Diana A. Diaz-Rizzolo, PhD, of the Open University of Catalonia in Barcelona, Spain, point out that consuming fish could play a role in preventing diabetes, but the specific types of fish that offer that protection haven't been identified. Sardines are rich in omega-3 and taurine, which the authors write could delay the development of type 2 diabetes. The authors hypothesized that consuming sardines twice a week for one year could reduce the risk of developing type 2 diabetes in a population with prediabetes and old age.

The researchers recruited 152 participants with fasting glucose between 100 – 124 mg/dL

and ages ≥ 65 and randomly distributed these patients into two groups: the sardine group and the control group. “Both groups received same [type 2 diabetes]-prevention nutrition during a year but only [the sardine group] had to add 200 g of sardine per week,” the authors write. “All variables were collected before the start and at the end of the diet.”

Participants in the sardine group showed an increase in HDL-cholesterol and adiponectin and a decrease in triglycerides and blood pressure, as well as a lower HOMA-IR. Based on these results, the authors conclude that a year of consuming a sardine-rich diet has a greater protective effect against developing type 2 diabetes and cardiovascular events.





Eating Whole Fruits Could Lessen Likelihood of Developing Diabetes

People who consume two servings of fruit per day have 36% lower odds of developing type 2 diabetes than those who consume less than half a serving, according to a study recently published in *The Journal of Clinical Endocrinology & Metabolism*.

Researchers led by Nicola Bondonno, PhD, of Edith Cowan University's Institute for Nutrition Research in Perth, Australia, point out that while plenty of evidence supports fruit mitigating the risk for diabetes, it's likely that not all fruit offers the same protection, and relationships between fruit intake and measures of insulin resistance and beta-cell dysfunction are not yet understood. "Therefore, the aims of this study were to examine associations between intake of total fruit, individual fruits commonly consumed by the study cohort, and fruit juice and (i) measures of insulin resistance and β -cell dysfunction and (ii) incident of diabetes at five and 12 years' follow-up, in a cohort of Australian men and women," the authors write.

The researchers studied data from 7,675 participants from the Baker Heart and Diabetes Institute's Australian Diabetes, Obesity, and Lifestyle Study who provided information on

their fruit and fruit juice intake through a food frequency questionnaire. They found participants who ate more whole fruits had 36% lower odds of having diabetes at five years. The researchers found an association between fruit intake and markers of insulin sensitivity, meaning that people who consumed more fruit had to produce less insulin to lower their blood glucose levels.

"In conclusion," the authors write, "findings from this study support encouragement of the consumption of whole fruits, but not fruit juice, to preserve insulin sensitivity and mitigate [type 2 diabetes] risk. Promoting a healthy diet and lifestyle which includes the consumption of popular fruits such as apples, bananas, and oranges, with widespread geographical availability, may lower [type 2 diabetes] incidence."

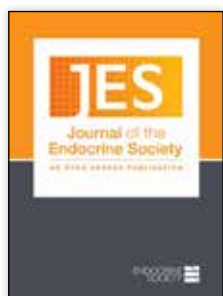
"We found that people who consumed around two servings of fruit per day had a 36% lower risk of developing type 2 diabetes over the next five years than those who consumed less than half a serving of fruit per day," Bondonno says. "We did not see the same patterns for fruit juice. These findings indicate that a healthy diet and lifestyle which includes the consumption of whole fruits is a great strategy to lower your diabetes risk."



“

We found that people who consumed around two servings of fruit per day had a 36% lower risk of developing type 2 diabetes over the next five years than those who consumed less than half a serving of fruit per day.

”



“

Pegvisomant therapy leads to a seemingly less favorable body composition profile and rise in cardiovascular risk markers that parallel normalization of IGF-1 levels and improvement in glucose metabolism.

”

Study Examines Body-Composition Changes with Long-Term Acromegaly Therapy

Long-term pegvisomant therapy for acromegaly can lead to a sustained increase in adiposity but no change in skeletal muscle mass, according to a study recently published in the *Journal of the Endocrine Society*.

Researchers led by Pamela U. Freda, MD, of the Columbia University Department of Medicine in New York, point out that pegvisomant, a growth hormone receptor (GHR) antagonist, treats acromegaly by blocking GH action in peripheral tissues and the liver and that normalization of circulating IGF-1 levels with pegvisomant therapy is associated with improvements in the clinical and metabolic abnormalities of acromegaly. “However, since pegvisomant is a potent antagonist at all GH receptors, it could be questioned whether, if in sufficient doses, some degree of functional GH deficiency could be manifest in tissues with its long-term use that is

not reflected in serum IGF-1 levels,” the authors write. “Since GH deficiency is associated with increased central adiposity, [insulin resistance (IR)], and reduced muscle mass, an investigation of the long-term effects of pegvisomant on body composition was warranted to determine if this normalizes.”

For this study, Freda and her team examined data from 21 patients with active acromegaly starting pegvisomant treatment. Endocrine and metabolic markers were measured before and serially during 1.0 to 13.4 years of pegvisomant therapy. The researchers found that mass of visceral adipose tissue (VAT) increased to a peak of 187% while subcutaneous adipose tissue (SAT) increased to 109% of baseline. Skeletal muscle did not change, IGF-1 levels normalized, and homeostasis model assessment insulin resistance and HbA1C were lowered. The researchers go on to write that their study also shows that pegvisomant monotherapy leads to a rise in intrahepatic lipid (IHL), which is reduced in active acromegaly, meaning that therapy can return IHL to normal.

In the conclusion, the authors write that since these adipose tissue masses didn’t increase above what was predicted or escalate over time, and since insulin resistance improves with therapy, these results suggest that years of GHR antagonism does not result in a GHD pattern of body composition. “Pegvisomant therapy leads to a seemingly less favorable body composition profile and rise in cardiovascular risk markers that parallel normalization of IGF-1 levels and improvement in glucose metabolism,” the authors write. “Long-term outcome data are needed to confirm that normalization of IGF-1 level on pegvisomant returns excess mortality to normal despite these other effects.”

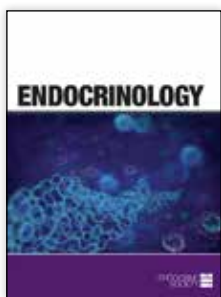




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“
Diabetes is a chronic condition, but diabetic ketoacidosis is one of those reasons a patient who is diabetic gets admitted.
”

Mortality Rates Double in Readmitted DKA Patients

Readmitted patients have two times the death rate during a second hospitalization with diabetic ketoacidosis, so providers should identify factors predisposing them to a second DKA episode, according to a study presented at ENDO 2021.

In “Rates and Predictors of 30-Day Readmission in Adults with Type 1 Diabetes Hospitalized for Diabetic Ketoacidosis in the US: A Nationwide Study,” which has since been published in *Endocrinology* in May, Hafeez Shaka, MD, an internal medicine resident at John H. Stroger Jr. Hospital of Cook County, in Chicago, Ill., and team used data from the National Readmissions Database (NRD) for 2017.

“Diabetic ketoacidosis is one of the emergencies in endocrinology,” Shaka says, “and is known to be associated with increased morbidity and mortality. Diabetes is a chronic condition, but diabetic ketoacidosis is one of those reasons a patient who is diabetic gets admitted.”

Diabetic ketoacidosis (DKA) is more common among patients with type 1 diabetes because insulin deficiency promoted lipolysis and ketogenesis. Because patients with type 2 diabetes have insulin, they are not as prone to developing acidosis when they have high blood glucose. The study involves patients who initially had an episode of DKA, were discharged from the inpatient setting, then returned to the hospital within the next 30 days. “We queried the NRD and other U.S. databases for hospitalizations involving people at least age 18 years between January 1 and November 30, 2017. We excluded patients who were electively admitted or admitted for traumatic reasons, and we assessed factors that might lead to readmission,” Shaka says.

Other outcomes assessed using the multivariate Cox regression model include mortality, length

of stay, and hospitalization costs. Of 91,625 hospitalizations, 91,401 patients were discharged alive. Among those, 18,553 patients (20.2%) were readmitted within 30 days, most for DKA. Compared to the index (initial) admission, a 30-day readmission was associated with more than double the mortality rate. It was also significantly associated with longer hospital stays and much higher costs. Independent factors that conferred higher risk of readmission include female sex (40% higher) even after adjusting for age, self-discharge against medical advice (50% higher), hypertension, chronic kidney disease, and anemia.

Interestingly, the researchers found that obesity and hyperlipidemia exerted protective effects against subsequent DKA episodes and consequent readmission. “I do a lot of obesity-based research,” Shaka explains, “and recently the concept of the obesity paradox has emerged. This has been reported in patients with stroke and heart failure. Another concept is ‘metabolically healthy obesity.’ However, in patients with type 1 diabetes, obesity seems to indicate that they have been more compliant with insulin because they need insulin to be able to store body fat. This hypothesis remains to be tested.”

Shaka and team recommend that the risk factors for readmission should be identified quite early during the index admission as a way of significantly preventing readmission. “This is something most hospitals want to work on and something that would also help reduce the burden of morbidity and mortality in patients with type 1 diabetes,” concludes Shaka. Efforts should also be channeled toward proper discharge planning. ^{EN}

~ Kelly Horvath



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- Mock exam sessions (on-demand): available in August
- Topical Q&A sessions with expert faculty (live): September 22–24

[ENDOCRINE.ORG/EBR2021](https://endocrine.org/EBR2021)

ADCES Annual Conference

August 12 – 15, 2021

Association of Diabetes Care & Education Specialists Annual Conference (virtual): All sessions will be recorded and available to access on-demand through Monday, November 8, 2021. We will miss seeing our fellow diabetes care and education specialists, friends, and partners together in Phoenix, but we believe this decision is in the best interest of our collective communities. Over 5,000 people joined us virtually for ADCES20, so we are keeping what worked and improving on the challenges we experienced. The result will be a best-in-class virtual experience for all attendees focused on learning, collaborating, and networking. www.diabeteseducator.org/annual-meeting/adces21

Heart in Diabetes

New York, N.Y.

September 10 – 12, 2021

This CME conference brings clinical leaders in diabetes and cardiovascular disease and practicing clinicians together to improve the care of patients at a high risk of cardiovascular, metabolic, and kidney diseases. This program is designed to evaluate the clinical science aspects of diabetes, obesity, and cardiovascular disease, focusing on the heart and kidney in diabetes. The goal is to develop appropriate, comprehensive clinical management plans aligning endocrinologists, cardiologists, nephrologists, and all other interested clinicians in their understandings of the impact of diabetes and CVD outcome trials on the clinical management of these very high-risk patients.

www.heartindiabetes.com

90th Annual Meeting of the American Thyroid Association®

Scottsdale, Ariz.

September 29 – October 3, 2021

This meeting is designed for the community of endocrinologists, basic scientists, internists, surgeons, nuclear medicine scientists, pathologists, trainees, nurses, physician assistants, advanced practice providers, and other health care professionals who wish to broaden and update their knowledge of the thyroid gland and its disorders.

www.thyroid.org

The American Society for Bone and Mineral Research (ASBMR) 2021 Annual Meeting

Toronto, Canada

October 1 – 4, 2021

Connect with more than 3,000



Virtual 2021 Clinical Endocrinology Update/Endocrine Board Review

CEU 2021

Sept. 10 – 12, 2021

EBR 2021

Sept. 22 – 24, 2021

Every year, the Endocrine Society holds Clinical Endocrinology Update (CEU), which brings together hundreds of endocrine clinicians for a unique learning experience.

This year, due to concerns regarding the safety of both attendees and faculty stemming from the COVID-19 outbreak, the Endocrine Society is conducting these sessions in a virtual learning environment.

CEU 2021 offers an opportunity to stay up to date on the newest breakthroughs in clinical endocrinology. Expert faculty deliver a comprehensive three-day program covering a range of clinical practice areas using interactive, case-based learning.

Endocrine Board Review (EBR) is an essential course for endocrinologists preparing to take the boards or practicing physicians seeking an intensive knowledge assessment. The virtual program is designed as a mock exam, with rapid-fire case-based questions emulating the format and subject matter of the ABIM's Endocrinology, Diabetes, and Metabolism Certification Examination. Attendees will have early access to topical on-demand presentations with detailed answer rationale (available in late August).

www.endocrine.org/ceu2021 • www.endocrine.org/eb2021

scientists from around the world for the premier scientific program packed with cutting-edge research in the bone, mineral, and musculoskeletal field. The ASBMR Annual Meeting boasts a variety of educational sessions and poster presentations in four information-filled days. The conference includes hands-on workshops focused on the latest technologies and research tools using model datasets, meet-the-professor sessions, and access to new science, new knowledge, new tools, and new contacts all in one location.

www.asbmr.org

Obesity Week 2021

November 1 – 5, 2021

ObesityWeek® is home to the latest developments related to obesity from cutting-edge basic and clinical research to state-of-the-art treatment and prevention to the latest efforts in advocacy and public policy. Present your latest work and stay up to date on the latest advances in the field by attending ObesityWeek®. The overarching theme for ObesityWeek® Interactive will be Pathways to Precision Obesity Care. A key component in the development of precision care for obesity is recognizing and understanding the inherent heterogeneity in both the patterns of development and expression of obesity, and ObesityWeek® Interactive programming will draw specific attention to these topics.

<https://obesityweek.org/>

Diabetes and Its Complications Livestream

November 4 - 6, 2021

This program provides comprehensive updates, practice recommendations, and the newest evidence-based strategies for the treatment and care of the person with or at risk for diabetes. In addition to state-of-the-art approaches to diabetes management, this course provides comprehensive updates for the prevention, diagnosis, and treatment of diabetes comorbidities and complications.

<https://hmsdiabetescourse.com/>

INTERNATIONAL ITINERARY

SLENDO 2021

August 5 – 7, 2021

The annual congress of the Sri Lanka College of Endocrinologists has continued to progress as the best academic event in Sri Lanka. The goal of SLENDO 2021 is to update and enhance endocrine knowledge among endocrinologists, physicians, trainees, and primary care doctors, both locally and internationally. SLENDO 2021 will feature the participation of more than 50 eminent speakers from Europe, U.S., Canada, Australia, and New Zealand along with outstanding regional endocrinologists from South Asia.

<https://slendo.lk/>

WCO-IOF-ESCEO London 2021

London, England

August 26 – 19, 2021

The 2021 Word Congress on Osteoporosis, Osteoarthritis, and Musculoskeletal Diseases will take place in London, August 2021 with a very exciting scientific program that will bring together the world's best in the field of musculoskeletal health and disease. The International Osteoporosis Foundation (IOF) and the European Society for Clinical and Economic Aspects of Osteoporosis and Osteoarthritis (ESCEO) are thrilled to welcome you in London and hope that this Congress will move the field one step forward on all fronts; from new understanding of bone metabolism and pathology, to new strategies and options in prevention, diagnosis, and treatment.

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

EndoBridge 2021

Antalya, Turkey

October 21 – 24, 2021

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

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“From the endocrinology perspective, people are becoming really intrigued by this idea of how critical a period fetal development is during which EDCs can have unintended effects. Our study is expanding that vulnerable period to also really appreciate the fact that **we can't just worry about the fetus, we should also worry about the mom. We have not spent nearly enough attention thinking about how EDCs might affect their health. This study builds on work we have published in the last two or three years with some other chemicals that are saying exactly this: mom matters, too.**”

— Laura N. Vandenberg, PhD, assistant professor, School of Public Health, Division of Environmental Health Sciences, University of Massachusetts, Amherst, Mass., stressing how important it is to also look at the health of the mothers when considering the after effects of EDC exposure during pregnancy in “**Mother and Child: Pregnancy Exposures Can Have Unintended Effects in Later Life for Both Offspring and Mother**” on page 26.

MEMBER SPOTLIGHT

Luz Castellanos, MD



Luz Castellanos, MD, is a pediatric endocrinology fellow in the Department of Pediatrics at Massachusetts General Hospital, and a clinical fellow at Harvard Medical School.

How did you become interested in the field of endocrinology?

My passion for endocrinology stemmed from being diagnosed with Graves' disease when I was 14 years old.

Although I did not understand my diagnosis well, I was fascinated by the systemic effect thyroid hormones could have and the remarkable difference I felt after treatment. My understanding of the field and respect for its complexity has deepened since attending McGovern Medical School and then pediatric residency at Dell Children's Hospital in Austin. I have truly enjoyed the academic stimulation produced in diagnosing and managing endocrine patients during my pediatric endocrine fellowship at Massachusetts General Hospital for children. Under the guidance of my mentor, my research has focused on clinical trials of artificial pancreas technology in type 1 diabetes, which I am also interested in applying to unique patient populations.

What is your favorite Endocrine Society memory?

My favorite Endocrine Society memory was **ENDO Online 2020**. I was truly amazed that the Society was able to transition so quickly from an in-person meeting to [an all new,] completely virtual meeting. It gave me hope that despite everything being shut down during the pandemic that tens of thousands of people were still able to come together.

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

Over the past few years, my interests in endocrinology have matured through exposure to research that the Endocrine Society has published in its excellent journals. I have also been using the Pediatric Endocrine Self-Assessment program throughout my fellowship to prepare for the upcoming board certification exam.

Read the entire Q&A with Castellanos and learn more about your fellow Endocrine Society members at: www.endocrine.org/member-spotlight.

\$245,000

The average annual salary for endocrinologists/diabetes specialists

— SOURCE: MEDSCAPE PHYSICIAN COMPENSATION REPORT 2021



10%

People who eat a plant-based dinner could reduce their risk of heart disease by 10%.

36%

People who consumed two servings of fruit per day had a 36% lower risk of developing type 2 diabetes within five years.

29%

People with the highest levels of whole-grain consumption had 29% lower rates of type 2 diabetes than those with the lowest levels.

50%

People with the highest levels of fruit and vegetable consumption were 50% less likely to develop diabetes.

— SOURCE: JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM



67%

Genetic analysis of pediatric primary adrenal insufficiency of unknown etiology using next generation sequencing finds a genetic cause in 67% of cases.

— SOURCE: JOURNAL OF THE ENDOCRINE SOCIETY

Kids *in* Lockdown:

How COVID-19 Affected
Children with Type 1 Diabetes

ENDO 2021
presented a plethora
of research detailing
how COVID-19
impacted a number
of endocrine
comorbidities.
However, two
studies in
particular took
a closer look at
how the virus
impacted pediatric
patients with
type 1 diabetes.

BY KELLY HORVATH

Each year, **ENDO** is something of an “embarrassment of riches” because it consists of four days packed with the latest cutting-edge research that presents groundbreaking new ideas that not only advance the science and practice of endocrinology but serves to advance human health worldwide. This year’s first all-virtual conference was certainly no different as **ENDO 2021** saw new studies that delved into particular facets of type 1 diabetes previously not studied.

Not surprisingly, two of these studies were impacted by the COVID-19 pandemic as they examined how the virus (the social implications as well as the disease itself) affected pediatric patients with type 1 diabetes. In each of these areas, the research represents important gains in our collective understanding of this complex and elusive disease.

As one of the researchers put it, “due to the difference in epidemiologic and comorbidity profiles between type 1 diabetes and other types of diabetes, it is important to investigate factors affecting this unique group.”

Glycemic Control During Lockdown

While studying children and teenagers with type 1 diabetes at Doncaster and Bassetlaw Teaching Hospitals, Neil Lawrence, MBChB, of Sheffield Children’s Hospital NHS Foundation Trust in Sheffield, England, and team found a silver lining of the nationwide lockdown in the UK last year.

They compared diabetic glycemic control for a three-month period before the lockdown, from December 2019 to March 2020, with the kids’ glycemic control for a three-month period during the UK’s first lockdown, from April 2020 through June 2020. Their study group was 80 patients younger than age 19 (median age 13.6) years who had either continuous glucose monitors (CGMs) with the Dexcom system or the FreeStyle Libre 14-day Flash Glucose Monitoring System as well as those with regular blood sugar monitoring with intermittent measures. From the data uploaded automatically into their online systems, they saw significant differences before and during lockdown. “The average blood sugar decreased from 9.7 to 9.5 mmol/L in those with CGMs, and the variability of their blood sugars decreased as well. The average standard deviation went down from 4.4 to 4.1 after the lockdown,” Lawrence explains.

The team also took a look at the hemoglobin A1c (HbA1c), this time in a larger cohort of 120 patients, before and after lockdown, and found significant decreases there as well, from 67.4 mmol/L to 61.3 mmol/L. “It’s important to mention that these are children and so you have to consider the honeymoon period after diagnosis, but we did exclude all children that had been diagnosed in the 12 months prior to the beginning of the first period we looked at, so that is not including any honeymoon effects; we’re truly seeing a significant lowering of the HbA1c,” Lawrence says. He further explained that results were not skewed by increased time in hypoglycemia because they looked at the percentage time in range in those with CGMs on. “Again, we saw that the time below range in hypoglycemia didn’t actually change, but we did see a significant increase in

As with adult patients, using telehealth services for pediatric patients proved to be convenient and safe.



“There is some data available that shows both type 1 and type 2 diabetes can be associated with increased risk of complications with COVID-19 in adults as well as independently associated with a higher risk of in-hospital death from COVID-19; **but there is very limited data available for pediatric type 1 diabetes and COVID-19 infections.**”

— MANISH RAISINGANI, MD, UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES, ARKANSAS CHILDREN'S HOSPITAL, LITTLE ROCK, ARK.

the time spent in range from 55% all the way through to 58% following lockdown, so this change in HbA1c was driven by higher time in range.”

What struck Lawrence and team was that the service adaptations they were forced to make because of the lockdown did not pose a detriment to glycemic control. Although they had to cancel in-person appointments with the exception of extenuating circumstances, they increased telehealth appointments. “There was a significant difference in how we were interacting with the patients. Face-to-face consultations decreased from 245 in the period before to 151 afterward, but in replacement for this, we increased contacts via either video or phone consultations from 1,700 to 2,200 between the periods,” Lawrence says. “At the time, we worried that these sorts of changes to the service would have detrimental effects on glycemic control, but as we’ve seen from the data, this wasn’t the case. Control got better.”

Other service adaptations included a drive-thru clinic where patients could get their HbA1c measured using the point-of-care analysis they used in in-person clinic as well as upload data from their monitors there for those who lacked the appropriate equipment to do so at home.

While the study outcome is certainly a beneficial one, that study underscores a difficult truth about type 1 diabetes: how challenging it is to manage the disease out in the world. “This is a behavioral disease,” Lawrence says, “and the increased time at home and perhaps the increased anxiety about health during the first lockdown improved control.”

Lawrence and team believe that continuing to connect with patients via telehealth and other methods of convenient service provision in the future is our best hope to sustain the trend of improved glycemic control in young people.

Poor Diabetes Control in Children Associated with Worse COVID-19 Outcomes

Manish Raisingani, MD, of the University of Arkansas for Medical Sciences and Arkansas Children's Hospital in Little Rock, Ark., presented his team's findings on the risk of complications in children with type 1 diabetes and COVID-19. “There is some data available that shows both type 1 and type 2 diabetes can be associated with increased risk of complications with COVID-19 in adults as well as independently associated with a higher risk of in-hospital death from COVID-19, but there is very limited data available for pediatric type 1 diabetes and COVID-19 infections,” Raisingani says.

Using the international TriNet X database that collects real-time information from the electronic health records of COVID-19 patients

“ It’s important to mention that these are children and so you have to consider the honeymoon period after diagnosis, but we did exclude all children that had been diagnosed in the 12 months prior to the beginning of the first period we looked at, so that is not including any honeymoon effects; **we’re truly seeing a significant lowering of the HbA1c.**”

— NEIL LAWRENCE, MBCHB, SHEFFIELD CHILDREN'S HOSPITAL NHS FOUNDATION TRUST, SHEFFIELD, UNITED KINGDOM

from over 31 countries, the researchers zeroed in on children ages 0 to 18 years diagnosed with COVID-19 infection with and without type 1 diabetes, looking for complications of mortality, sepsis, and intubation.

Of the 500,000 kids with COVID-19 but no type 1 diabetes, 235 died, a 0.047% mortality rate. Of the 3,000 kids with COVID-19 infection and type 1 diabetes, 10 died, giving a much higher mortality rate of 0.328% and a seven times higher relative risk of dying. Extracting the children whose HbA1c was $\geq 9\%$ (poorly controlled), the relative risk of dying from COVID-19 infection jumps to about 15 times higher. “The higher the HbA1c, the higher the risk of dying with COVID-19 infection,” Raisingani says. The 482 kids with well-controlled type 1 diabetes, defined as HbA1c $\leq 7\%$, had 0 deaths from COVID-19 infection, which is similar to mortality rates in the general population.

Regarding sepsis, 575 children without type 1 diabetes developed this complication, a 0.114% risk, relative risk of 1.0. In those with type 1 diabetes, the risk of developing sepsis was 0.492%, with a relative risk of 4.3, a significantly higher risk. Once more, of those whose type 1 diabetes is well controlled, 0 developed sepsis.

“Our data shows that kids with well-controlled type 1 diabetes have outcomes not much different from kids who don’t have type 1 diabetes,” Raisingani says. Similar results were found with intubation: 142 kids without type 1 diabetes required endotracheal intubation, a 0.028% risk, while in kids with type 1 diabetes, this risk went up to 0.328% and a relative risk of 11 times higher. Once more, none of the kids with HbA1c $\leq 7\%$ required intubation.

Concluded Raisingani: “It is all the more important that during these times that children with type 1 diabetes keep their blood sugars under control to prevent hospitalizations, death, and other complications. A question we get asked in the clinic frequently is, ‘when can my child with type 1 diabetes return to school?’ If the HbA1c is $\leq 7\%$ and appropriate precautions like wearing masks and social distancing are observed, then it should be safe to go back to school. If that HbA1c exceeds 9%, it’s wise to get it under control before returning.” ^{EN}

— HORVATH IS A FREELANCE WRITER BASED IN BALTIMORE, MD. SHE WROTE ABOUT COVID-19'S IMPACT ON A VARIETY OF ENDOCRINE COMORBIDITIES IN THE JUNE ISSUE.



AT A GLANCE

- ▶ While much of the research presented at **ENDO 2021** addressed the impact of COVID-19 on a variety of endocrine comorbidities, the two that examined the impact the virus had on pediatric patients with type 1 diabetes were of particular interest.
- ▶ A pediatric study in the UK highlights the surprising finding that glycemic control improved during the first COVID-19 lockdown, despite the challenges of remote management, and recommends continuing to make ways of connecting with patients more convenient for them to maintain this positive trend now that they are outside the home once more.
- ▶ In children with type 1 diabetes and COVID-19 infection, the higher the HbA1c, the higher their risk of complications and death; children with well-controlled type 1 diabetes (HbA1c $\leq 7\%$) have outcomes similar to those of the general population.

Mother and Child:

Pregnancy Exposures Can Have
Unintended Effects in Later Life for
Both Offspring and Mother

BY KELLY HORVATH

In 2009, the Endocrine Society's first Scientific Statement on endocrine-disrupting chemicals (EDCs) was considered a long overdue wake-up call to the scientific community about the impacts of EDCs on health and disease. As the years have passed, an even larger body of research has emerged further demonstrating the effects of these disruptors in both animals and in humans — especially during pregnancy — and how they can have far-reaching consequences, not only in the development and growth of the offspring but often in future generations to come.

Two new studies from **ENDO 2021** specifically address the impacts of EDCs during pregnancy on both the mother and the unborn. In the session, “In Utero Exposure to 17 α -Hydroxyprogesterone Caproate May Contribute to Increasing Incidence Rates of Early-Onset Cancer,” Caitlin Murphy, PhD, MPH, discussed the synthetic progesterone 17-OHPC and how it can double the cancer risk in the offspring of mothers who took it during pregnancy. Laura N. Vandenberg, PhD, presented her mouse research study on propylparaben exposure during pregnancy and lactation, which was shown to cause adverse effects on the mother. The study, “Exposure to propylparaben during pregnancy and lactation induces long-term alterations to the mammary gland in mice,” was also published in *Endocrinology* in March.

Generation Cancer

Murphy, an assistant professor at the University of Texas Southwestern Medical Center in Dallas, Texas, presented her team's research on 17-alpha hydroxyprogesterone

Two studies from the all-virtual **ENDO 2021** focused on how pregnancy is impacted by endocrine-disrupting chemicals. From both ends of the umbilical cord, research shows that mothers and offspring can feel the effects of these chemicals, sometimes for generations to come.



“

An important observation we've made is that incidence rates have increased over time, but they also increase successively across generations, so we see an elevated risk of cancer among people who were born in the 1960s, or generation X. **That got me thinking about what was going on at that time, in particular in early life that may have contributed to this generation's risk of cancer many decades later."**

— CAITLIN MURPHY, PHD, MPH, ASSISTANT PROFESSOR, UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER IN DALLAS, TEXAS

In the 1950s and 1960s, 17-OHPC was prescribed to treat a range of gynecologic and obstetric conditions, including in pregnancy to prevent miscarriage.

caproate (17-OHPC). As a cancer epidemiologist, Murphy wanted to understand why rates of certain cancers like colorectal and prostate cancer, for example, are increasing, especially in adults younger than 50 years age. "An important observation we've made is that incidence rates have increased over time, but they also increase successively across generations, so we see an elevated risk of cancer among people who were born in the 1960s, or generation X," Murphy says. "That got me thinking about what was going on at that time, in particular in early life that may have contributed to this generation's risk of cancer many decades later."

Using data from participants in the Child Health and Development Studies, women who received prenatal care between June 1959 and June 1967 in the Kaiser Foundation Health Plan in Oakland, Calif., the team began to examine the drugs given to women in pregnancy in the '50s and '60s and fairly quickly zeroed in on 17-OHPC, a drug prescribed to treat a range of gynecologic and obstetric conditions, including in pregnancy to prevent miscarriage. "We know the naturally occurring hormone progesterone does a lot to support and strengthen a pregnancy, so the belief was that delivering a synthetic form of it might help improve pregnancy-related outcomes," Murphy explains.

17-OHPC has a similar regulatory and controversial history as diethylstilbestrol (DES), the synthetic estrogen also given to women during pregnancy during the mid 1900s. DES has since been withdrawn from the market and contraindicated in pregnant women because it increased the





risk of clear cell adenocarcinoma and other cancers in female offspring in addition to other health consequences in both male and female offspring. “DES set the precedent that exposure to synthetic hormones are endocrine-disrupting chemicals (EDCs) and have serious health consequences for adults exposed in utero,” Murphy says.

The researchers used the California Cancer Registry to identify cancers diagnosed in the adult children of the Child Health and Development Studies cohort through 2018. “Sure enough, we found that same phenomenon — that the synthetic hormone 17-OHPC seems to cause endocrine disruption during early fetal development that may lead to cancer later in life,” Murphy says. For colorectal cancer, the risk is particularly elevated, an increase of nearly five times higher for exposed individuals compared to non-exposed individuals. For prostate cancer, that risk is more than three times higher. All told, among more than 18,751 live births, 954 cancer diagnoses were made in offspring ages 18 to 58 years, and 181 women received OHPC during pregnancy.

Mixed Evidence

Murphy and team also found that the risk of any cancer is doubled in these Generation X adults. “This is clearly not a targeted kind of mechanism happening for one particular type of cancer, but many different cancers, meaning many different organ systems are susceptible to exposure to this drug in the womb,” Murphy says. “Our study presents really compelling evidence that events and exposures that happen during critical periods of growth and development really matter for your risk of developing cancer many decades later.”

In the 1970s, the U.S. Food and Drug Administration (FDA) issued statements that evidence showed 17-OHPC increased the risk of birth defects in exposed offspring and removed all of the pregnancy-related indications. “By the year 2000, the manufacturer asked that the FDA withdraw their approval because 17-OHPC was no longer being marketed or used,” Murphy says. Then, in 2011, a randomized trial showed that the drug may have some benefit in reducing preterm birth.

For an updated approval, the FDA required a confirmatory trial. Published in 2020, the PROLONG trial showed no reduction in neonatal morbidity or mortality. The FDA recommended withdrawing drug approval, but the drug sponsor appealed, and 17-OHPC was caught in regulatory limbo. In October 2020, the FDA proposed withdrawing the drug from the market, citing a lack of benefits. Nevertheless, under the trade name Makena, 17-OHPC continues to be prescribed and is marketed directly to women who have a history of preterm birth. In March 2021, *The Lancet* published

AT A GLANCE

- ▶ Two studies presented at **ENDO 2021** examined the effects of EDCs on pregnancy, one from the point of view of how those effects manifested in offspring, the other from how they affect the mother.
- ▶ The synthetic progesterone 17-OHPC given in pregnancy doubles the risk of any cancer in the adult offspring exposed in utero, suggesting that multiple organ systems are susceptible to endocrine disruption during early development.
- ▶ Propylparaben exposure during mouse dam pregnancy and lactation permanently affected the volume of mammary epithelium, thickness of periductal collagen, epithelial cell proliferation, and immune cell populations, reducing the effects of parity.



Among the cosmetics found to contain propylparaben were: foundation (173 products), moisturizer (108 products), lipstick (108 products), eye shadow (87 products), eye liner (77 products), 24 different lip balms, and many more. Source: www.ewg.org

a meta-analysis, “Role of progestogens in women at risk for spontaneous preterm birth: the final word?” showing that 17-OHPC reduced the risk of spontaneous preterm birth before 34 weeks for singleton pregnancies in women at high risk, and the questions surrounding this drug continue to swirl.

“There’s controversy in that some people are observing that this drug does have a benefit,” says Murphy, “but when we look at the randomized trials, clearly there is none. Something needs to be done to reconcile the mixed evidence.”

Propylparaben: Guilty Until Proven Innocent

While Murphy’s research focused on the offspring, Vandenberg’s study concentrates on the mother. An assistant professor at the School of Public Health, Division of Environmental Health Sciences, University of Massachusetts in Amherst, Mass., Vandenberg was intrigued by research done 20 years ago by Philippa Darbre who analyzed human breast tumor samples and found concentrations of parabens, especially near the axillae, suggesting a possible link between the chemical and cancer. Parabens are commonly used in personal care products like deodorant and have documented estrogenic effects.

What struck Vandenberg was that the logical next step was never taken — rodent studies. “We think of rodents as a sentinel species because they set up a warning sign,”



Part of the problem was, when do you look at the exposure and when do you look at the disease? What the rodent tells us is that we have to evaluate the exposure during the right period of life. **What we are exposed to currently has nothing to do with what we may have been exposed to in utero — we'd have to ask our mothers.**

— LAURA N. VANDENBERG, PHD, ASSISTANT PROFESSOR,
SCHOOL OF PUBLIC HEALTH, DIVISION OF ENVIRONMENTAL HEALTH SCIENCES, UNIVERSITY OF MASSACHUSETTS, AMHERST, MASS.

she explained. “Breast cancer develops over decades, so to try to answer that question in humans is very complicated and very time intensive. It’s surprising that no one had even tried to look in rodents. In fact, I was shocked to realize how few studies from rodents have been done on propylparaben. We really are one of the first groups to be looking at it in the rodent and in the mammary gland in particular.”

Although a clear association was not established with the Darbre series of studies between deodorant use and breast cancer, Vandenberg and team saw missed opportunities, not only with the use of rodents but also because they could control the period of exposure. “Part of the problem was, when do you look at the exposure and when do you look at the disease? What the rodent tells us is that we have to evaluate the exposure during the right period of life. What we are exposed to currently has nothing to do with what we may have been exposed to in utero — we’d have to ask our mothers,” Vandenberg says.

So, the team exposed mouse dams to a solution of propylparaben in corn oil in one of three doses: the lowest (20 µg/kg/day) approximated the intake of the 95th percentile of pregnant American women and the highest (10,000 µg/kg/day) represents the toxicological no-observed adverse-effect level for propylparaben. Exposures happened daily from pregnancy for five weeks to allow mammary gland involution. “Our question was, is propylparaben permanently changing the mammary gland? We endocrinologists expect the effects of hormones to be dependent on exposure to that hormone,” Vandenberg says. “When you take it away, the individual goes back to normal.”


That’s not what happened, however. After analyzing the mammary gland tissue from the euthanized mice, the researchers found that propylparaben exposure had impaired the remodeling of the mouse mammary gland that normally occurs during lactation and involution, reducing volume of mammary epithelium, thickness of periductal collagen,

epithelial cell proliferation, and immune cell populations. In essence, propylparaben seemed to reverse the protective effects against breast cancer many believe to come from pregnancy.

“Mom Matters, Too”

This is yet another study building a body of evidence that EDCs are not behaving like normal hormones that can be “switched on or off.” And yet, as Vandenberg pointed out, the general public seems more concerned about the potential danger than the regulatory agencies. EDCs are extremely widely used in everything from personal care products and cosmetics to food packaging but have been comparatively poorly studied. The industry responded by labeling some products “paraben-free” so that individuals at least have an informed choice about what to put in their bodies.

“The regulatory agencies are almost sort of set up to say exposure isn’t a big deal until you prove that something is harmful, and I have a philosophical problem with that — that we treat chemicals as innocent until proven guilty,” Vandenberg says. Shouldn’t it be the opposite? Scientists will be the key to making this paradigm shift.

“From the endocrinology perspective, people are becoming really intrigued by this idea of how critical a period fetal development is during which EDCs can have unintended effects,” Vandenberg says. “Our study is expanding that vulnerable period to also appreciate the fact that we can’t just worry about the fetus; we should also worry about the mom. We have not spent nearly enough attention thinking about how EDCs might affect their health. This study builds on work we have published in the last two or three years with some other chemicals that are saying exactly this: mom matters, too.” 

— HORVATH IS A FREELANCE WRITER BASED IN BALTIMORE, MD. SHE WROTE ABOUT COVID-19’S IMPACT ON A VARIETY OF ENDOCRINE COMORBIDITIES IN THE JUNE ISSUE.



Fatty Liver Disease:

What Endocrinologists Need to Know

BY DEREK BAGLEY

As obesity and diabetes rates continue to climb, so too do rates of nonalcoholic fatty liver disease (NAFLD). A CEU 2021 session will teach attendees how to identify NAFLD as well as the best treatment protocols.

CEU 2021

The presentation will be a part of the Clinical Endocrinology Update (CEU) 2021, a comprehensive virtual meeting featuring faculty at the forefront of endocrinology describing the latest advances and critical issues in the field.

Taking place September 10 – 12, each day will feature four hours of live programming, including 36 educational sessions spanning seven topics. All sessions will be recorded and available for viewing 72 hours after they conclude.

Information and registration are available at: endocrine.org/ceu2021.

As it stands, nonalcoholic fatty liver disease (NAFLD) is on track to overtake viral hepatitis as the leading cause of liver transplantation in the U.S. The most common cause of chronic liver disease, NAFLD includes simple steatosis (NAFL) and a more severe and progressive form of liver disease called nonalcoholic steatohepatitis (NASH) under its umbrella.

What makes the fact that NAFLD is becoming more widespread so important is that the two drivers of the disease — obesity and type 2 diabetes — continue to increase. Currently, 42% of Americans are obese while another third is overweight, and it's no secret that diabetes rates continue to climb, particularly among minority communities. In just nine years, half of Americans are projected to have obesity.

According to Kenneth Cusi, MD, chief of the Division of Endocrinology, Diabetes and Metabolism at the University of Florida in Gainesville, until now, endocrinologists have been unaware of the significance of fatty liver in their patients, and by not acting early on, physicians have been unable to prevent cirrhosis in many of these patients. "As endocrinologists, we see these people every day in the clinic," he says. "So if you've not diagnosed somebody with steatohepatitis and liver fibrosis in the past week, you might've missed several patients in whom you could have started to prevent cirrhosis."

Cusi will bring his experience, as well as a call to action, to this year's virtual Clinical Endocrinology Update, once again beamed to computer screens and devices around the world, in his talk titled "What Endocrinologists Need to Know about Diagnosis and Management of Fatty Liver" on September 10 at 1:15 p.m. (EST). He hopes to address these knowledge gaps among endocrinologists and other physicians, as well as correct some misconceptions still held among the medical community.

Younger Patients at Risk

Cusi says that physicians have historically been trained to only be concerned about liver disease when a patient's alanine aminotransferase (ALT) levels are above 40 IU/ml. But the normal plasma ALT for a woman is 19 IU/ml and 30 IU/ml for a man. "Any time you see somebody with a value above 30 IU/ml, those people typically will already have fatty liver," he says.

In fact, 70% of people with type 2 diabetes have a fatty liver, and of these about 20% have fibrosis, which can lead to cirrhosis if left untreated. A paper published this past February in *Diabetes Care* by Lomonaco, et. al. (Cusi was a co-author) concludes that based on those kind of numbers physicians should "screen for clinically significant fibrosis in patients with [type 2 diabetes] with steatosis or elevated ALT."



“As endocrinologists, we see these people every day in the clinic. **So, if you’ve not diagnosed somebody with steatohepatitis and liver fibrosis in the past week, you might’ve missed several patients in whom you could have started to prevent cirrhosis.**”

— KENNETH CUSI, MD, CHIEF, DIVISION OF ENDOCRINOLOGY, DIABETES AND METABOLISM, UNIVERSITY OF FLORIDA, GAINESVILLE, FLA.

Lifestyle interventions work to reduce fat, which damages the liver over time and can possibly lead to fibrosis or even cirrhosis.

Those numbers should also mean endocrinologists are seeing more cases of cirrhosis in the clinic. But the epidemic of obesity has only really spread in the past 20 years or so, and Cusi says it takes about 20 or 30 years to develop cirrhosis. Another reason endocrinologists do not encounter much cirrhosis is because once patients develop cirrhosis, they stop seeing the endocrinologist and retreat to what they consider the most essential healthcare providers: hepatologists, primary care physicians, the hospital.

What’s worse, as obesity and type 2 diabetes cases continue to flare, physicians may see younger patients with liver disease. Cusi says that he recently saw a 31-year-old man with obesity but not diabetes, with very advanced liver cirrhosis. “The reality is that because two out of three people with obesity and even more with diabetes have fat in the liver, all of them are at risk of developing the inflammation associated with that,” he says.

Steps to Diagnosis

Liver cells never adapted to the accumulation of triglycerides, so when triglycerides sit in hepatocytes, they transform into a more toxic lipid species that cause cells to release cytokines, which leads to inflammation, Cusi tells *Endocrine News*. “From this very brief path of physiology, we’re going to then know the steps to diagnose it earlier and to treat it, which is to prevent fat from accumulating in the liver cell to start with,” he says.

Cusi goes on to say that endocrinologists should routinely look at liver enzymes and be alarmed when those levels are about 30 IU/ml — not 40 IU/ml — as well as perform a simple diagnostic panel called an FIB-4, which combines age, liver enzymes, and platelets in a formula that can give a rough indicator whether a patient might be at high risk. Endocrinologists can also order or perform in the clinic a simple ultrasound-like imaging study (commonly done in hepatology practices) like transient elastography (Fibroscan™) that measures liver stiffness, a surrogate for liver fibrosis. “It’s better to screen and identify people at a stage of fibrosis when we can prevent irreversible damage” Cusi says.

The first line of treating someone with fatty liver should be a lifestyle intervention, which research shows works, since in

“

We know that all patients that have [fatty liver] have insulin resistance, whether they're lean or obese, and this insulin resistance combines with some other factors in the liver that are probably genetically determined to trigger inflammation and activate pathways that promote liver fibrosis and cirrhosis. **Our mission as endocrinologists is to identify patients early on.**”


— KENNETH CUSI, MD, CHIEF, DIVISION OF ENDOCRINOLOGY, DIABETES AND METABOLISM, UNIVERSITY OF FLORIDA, GAINESVILLE, FLA.

individuals with obesity or overweight, the fat is literally sick, releasing fatty acids and inflammatory cytokines that promote fat accumulation in liver cells, possibly leading to fibrosis and even cirrhosis. For Cusi, reducing overall adiposity in obesity by any means — lifestyle changes, medications, even bariatric surgery — can make the adipose tissue (fat) work like it should again, responding to the body's insulin so triglycerides stay largely stored within fat cells.

Successful Multidisciplinary Approach

Cusi also points to medications that have shown to be effective in doing just that. Pioglitazone improves insulin sensitivity by normalizing fat metabolism and keeping triglycerides largely stored in adipose tissue. The drug has also been shown to improve dyslipidemia in patients with obesity or diabetes and reduce cardiovascular disease and progression from prediabetes to type 2 diabetes. “It's a medication that, because it restores insulin action and overall metabolism, not only improves diabetes but also the mechanisms leading to fatty liver as well, which are closely interconnected,” Cusi says. “Perhaps a combination of these different approaches might be the best moving forward.”

As with most diseases this complex, the best way to succeed is with a multi-disciplinary approach; the endocrinologist should team up with nutritionists and behavioral modification specialists and hepatologists, as well as offer their patients integrated lifestyle programs. And indeed, it will not be as simple as telling the patient to just go lose weight, since obesity is a disease. But fatty liver is not only associated with obesity.

“We know that all patients that have [fatty liver] have insulin resistance, whether they're lean or obese, and this insulin resistance combines with some other factors in the liver that are probably genetically determined to trigger inflammation and activate pathways that promote liver fibrosis and cirrhosis,” Cusi says. “Our mission as endocrinologists is to identify patients early on.” 



AT A GLANCE

- ▶ Nonalcoholic fatty liver disease (NAFLD) rates are rising as its two drivers — obesity and type 2 diabetes — continue to increase.
- ▶ However, until now, endocrinologists have been unaware of the significance of fatty liver in their patients with obesity and type 2 diabetes, and that knowledge gap has left physicians unable to prevent cirrhosis in many patients.
- ▶ For his upcoming CEU session, Kenneth Cusi, MD, will discuss how to identify fatty liver in patients early on, as well as how to best treat this complex disease.

— BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. IN THE JUNE ISSUE, HE WROTE ABOUT HOW TWO COMMUNITY HOSPITALS WERE SUCCESSFULLY IMPLEMENTING INPATIENT DIABETES MANAGEMENT SERVICES.



TESTOSTERONE

Does *Testosterone Therapy* Have a Place in *Treating Women?*

At the all-virtual CEU 2021 in September, two contributors to a global consensus statement, Susan R. Davis, MBBS, FRACP, and Margaret E. Wierman, MD, will describe the use — and misuse — of giving women testosterone.

BY ERIC SEABORG

Global Consensus Position Statement on the Use of Testosterone Therapy for Women

As mentioned in the article, the Endocrine Society published a consensus statement on testosterone use for women in the October 2019 issue of *The Journal of Clinical Endocrinology & Metabolism*.

Susan R. Davis, MBBS, FRACP, and Margaret E. Wierman, MD, are two of the statement's authors and are the "debaters" for the "Endocrine Debate: Testosterone Therapy in Women: Never or Sometimes?" session at CEU 2021.

The complete consensus statement is available at: <https://academic.oup.com/jcem/article/104/10/4660/5556103>.

CEU 2021

The presentation will be a part of the Clinical Endocrinology Update (CEU) 2021, a comprehensive virtual meeting featuring faculty at the forefront of endocrinology describing the latest advances and critical issues in the field.

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Information and registration are available at: endocrine.org/ceu2021.

This upcoming Clinical Endocrinology Update session sounds as if it could feature lively disagreement: "Endocrine Debate: Testosterone Therapy in Women: Never or Sometimes?"

But there is not that much to debate — at least among endocrinologists — about when to prescribe testosterone for a woman, according to presenter Susan R. Davis, MBBS, FRACP, an endocrinologist and professor at Monash University in Melbourne, Australia.

Davis led an extensive literature meta-analysis that showed a moderate therapeutic effect for testosterone in postmenopausal women who have experienced a problem with sexual interest that is causing them distress. But that is the only condition for which there is evidence of clinical benefit.

Davis says that conditions that qualify for the "never" list for prescribing testosterone include depressed mood, fatigue, menopausal symptoms, and "a whole gamut of things" for which it is easy to find promoters on the internet — but not evidence of efficacy.

Davis will share the screen at the virtual event with Margaret E. Wierman, MD, professor of medicine at the University of Colorado School of Medicine and chief of endocrinology at the Denver VA Medical Center. Kathryn A. Martin, MD, of Massachusetts General Hospital in Boston will be the moderator.

The presenters will draw much of the information for their talk from the "Global Consensus Position Statement on the Use of Testosterone Therapy for Women," which was concurrently published in the October 2019 print version of *The Journal of Clinical Endocrinology & Metabolism* and several other journals. Both presenters were among the co-authors of the statement, which was endorsed by the Endocrine Society and at least 10 other national and international societies, so the "debate" will dissect a shared evidence base.

HSDD

"The only evidence-based indication for the use of testosterone in women is for the treatment of postmenopausal women who have been diagnosed as having hypoactive sexual desire disorder/dysfunction (HSDD) after formal biopsychosocial assessment," the statement says.

HSDD and related disorders "have multiple etiologies including biopsychosocial factors such as neuroendocrine imbalance, physical ill health or disease, interpersonal difficulties, psychological distress, and sexually repressive cultural or religious values," the position statement notes. Therefore: "It was considered of utmost importance that the diagnosis of HSDD involves a full clinical assessment and that other factors contributing to FSD (female sexual dysfunction) must be identified and addressed before testosterone therapy is initiated."

When prescribed, testosterone should be given as a gel or cream. And treatment relies on adapting products made for men because formulations for women do not exist, except in Australia, Davis says.

The statement recommends avoiding compounded “bioidentical” formulations and notes that “oral testosterone therapy is associated with adverse lipid profiles with negative effects on high-density-lipoprotein cholesterol and low-density-lipoprotein cholesterol levels, and is not recommended.”

Treatment should aim to achieve a “physiological level for a premenopausal woman,” and avoid a supraphysiological dose, Davis says. “The women self-administer, so it is very important that doctors monitor women for clinical side effects and blood levels to make sure women are not putting on too much, because sometimes patients think that if a little bit is good, a bit more might be better,” she says.

Web-Based Cowboys


One aim of the meta-analysis and the global statement was to identify whether any conditions could benefit from testosterone treatment, and to “give doctors permission to treat those women,” Davis says.

But another important goal was to investigate whether there was any data to support the many other claims that fill the internet saying testosterone will ameliorate all sorts of conditions, from low mood to “brain fog” to lack of energy to “hormone imbalance.”

“There are real cowboys out there who are making compounds of testosterone products and telling women it is going to prevent breast cancer, going to make them live longer, and going to make them feel better. Some of those things are disproven, like improvements in well-being, and some aspects we just don’t have enough data to say one way or the other, like bone health. But when we don’t have the data, there is not a reason to treat people,” Davis says. (See “Targeting Patients with Pellets” in the April 2019 *Endocrine News*.)

The position statement notes that there is a need for clinical trials on the effects of testosterone on the musculoskeletal health of women and on the effects on cognitive performance, and studies are needed to “establish the longer term cardiometabolic and breast safety of testosterone therapy for women.”

But the bottom line for now is: “There are insufficient data to make any recommendations regarding the use of testosterone in premenopausal women for treatment of sexual function or any other outcome.”

Or as Davis puts it: “The statement very strongly says, ‘Don’t go around using testosterone for reasons for which there is no proof of benefit.’” 



AT A GLANCE

- ▶ Testosterone therapy has been promoted heavily on the internet with wide-ranging — and generally inaccurate — claims of efficacy for a plethora of ailments.
- ▶ Testosterone therapy in women has been shown to be effective in treating only one condition: postmenopausal hypoactive sexual desire disorder.
- ▶ A global consensus position statement provides a one-stop reference for evidence-based guidance on what is known and not known about treating women with testosterone.

— SEABORG IS A FREELANCER WRITER BASED IN CHARLOTTESVILLE, VA. IN THE MAY ISSUE, HE WROTE ABOUT THE POSSIBILITY THAT COVID-19 WAS CAUSING DIABETES IN SOME PATIENT POPULATIONS.

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Collaboration Connection

As shown in last month's Practice Resources article, "Inside Addition," teamwork is often vital to improving patient outcomes. And while most healthcare professionals are in favor of working together, the biggest obstacle appears to be simply finding the time to team up.

In a survey conducted last summer by the market research and analytics company The Harris Poll for Boehringer Ingelheim and Eli Lilly and Company, a majority of healthcare providers agreed that collaboration among specialties treating patients with type 2 diabetes result in better medical outcomes. The biggest challenge, according to respondents, was actually finding the time to connect with their colleagues.

The survey of a group of 1,000 U.S.-based providers included primary care physicians, cardiologists, endocrinologists, nephrologists, and nurse practitioners. The results are the foundation of a new website called Unleashing The Truth About Diabetes + Heart Disease (<https://unleashingthetruth.com>), which helps providers understand how working together can better help patients with type 2 diabetes uncover and prevent cardiac and renal complications.

BY CHERYL ALKON

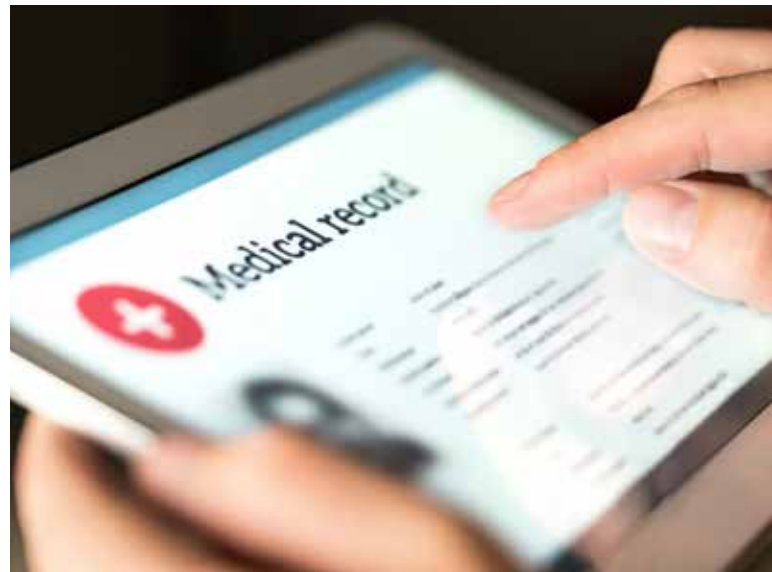
More than four in five providers surveyed agreed that collaboration was “absolutely essential, extremely important, or very important” to help improve the health of their patients with type 2 diabetes.

Why Teamwork Works

When surveyed, providers said that “producing higher-quality patient care” and “consistency in treatment” were the greatest upsides of collaborating to help their type 2 patients. “Reducing communication gaps” and “minimizing medical errors” were also mentioned as significant collaboration advantages.

“When you work with other people, all of those things align,” says Rachel Pessah-Pollack, MD, clinical associate professor in the Division of Endocrinology, Diabetes, and Metabolism at NYU Langone Health in New York, N.Y., and an endocrinologist who helped interpret the findings. “The survey shows that everyone wants to collaborate, but time is the issue. I think that as endocrinologists, we are really recognizing the important role of cardiac protection in our diabetes patients. It relates to cardiovascular, renal, and glucose levels, and the question of who is the one that is going to manage that? The endocrinologist? The primary care physician? We are recognizing that this may be all our roles. The general consensus is that when people do collaborate and you have the full information about the patient, you can offer the best care. When care is discordant, it is hard to know if the patient’s medication list is accurate, or if patients are receiving the most current information. Collaboration is essential.”

Collaboration also helps patients and their providers know what their diabetes management plan is, which has several benefits, says Javed Butler, MD, MPH, MBA, a professor of medicine at the University of Mississippi Medical Center in Jackson, Miss., and a cardiologist involved in the initiative. “First, consistent messaging to patients and caregivers allows for a uniform plan of action,” Butler explains. “Second, a common plan of care individualized to a given patient avoids ever-changing medical regimens as patients navigate the healthcare environment. Third, issues related to comfort and self-efficacy among clinicians can be overcome, e.g.,



a cardiologist may not be comfortable initiating a drug mostly prescribed by an endocrinologist and vice versa, but the patient needs both. In this way, rather than avoiding or delaying best care, patients can get optimal care fast. Lastly, in a well-coordinated healthcare system, collaboration can help a patient avoid making multiple visits to the healthcare system at different times and different places. Instead, the care can be coordinated around patients’ needs.”

Finding Time to Connect

Just about every survey respondent said they didn’t have as much time as they would like to collaborate more. A lack of time being able to help collaboration happen. Others mentioned lacking tools or the resources to make interaction easier.

When many providers work within the same medical or healthcare system, it is more likely they all use the same electronic health record. Pessah-Pollack cited the ease of using the Epic medical record system at NYU/Langone to be able to communicate with other providers overseeing her type 2 patients’ care.

“I can see the notes of other providers in Epic, and I also have the ability to chat with providers in real time, and I can get an



“When people do collaborate and you have the full information about the patient, you can offer the best care. **When care is discordant, it is hard to know if the patient’s medication list is accurate, or if patients are receiving the most current information. Collaboration is essential.**”

— RACHEL PESSAH-POLLACK, MD, CLINICAL ASSOCIATE PROFESSOR, DIVISION OF ENDOCRINOLOGY, DIABETES, AND METABOLISM, NYU LANGONE HEALTH, NEW YORK, N.Y.

answer back,” she says. “With technology, we have the ability to interface, but it’s not perfect because how many patients see healthcare providers outside of our systems?”

In those cases, Pessah-Pollack uses her cell phone and will reach out to the patient’s cardiologist and/or nephrologist to share her cell number to be able to make and receive quick calls directly. “Bypassing going through the office makes everything much more efficient,” she admits. “Over the past two to three years I have spoken to cardiologists more than I ever have in my life, especially about SGLT-2 inhibitors and their cardiovascular benefit.”

Patient information is never shared via text, she emphasized, choosing to text to schedule future phone calls to collaborate.

Butler, the cardiologist, agrees. “Any significant change even between clinicians with a common healthcare environment may be better communicated by a quick phone call,” he says. “Include patients and family caregivers in such discussions so that everyone is on the same page. Include the extended healthcare team beyond physicians, including, for example, nutritionists, certified diabetes educators, pharmacists, etc.”

Helping patients along by sending a patient history ahead of time to other providers can help encourage patients to be more involved, says Pessah-Pollack. “We have to help our patients along and encourage them to be a part of their care because that ultimately winds up with more collaborative care,” she says. “A lot of patients go to specialists and don’t

A Closer Look at Diabetes and Cardiovascular Disease

Preventing cardiac problems in patients with type 2 diabetes is a bigger concern than ever before, says Rachel Pessah-Pollack, MD, a clinical associate professor in the Division of Endocrinology, Diabetes and Metabolism at New York University’s Langone Health. “I have definitely changed my focus and with every visit with my diabetic patients, I am always talking about cardiovascular risk and how to reduce that risk,” she says. She

emphasizes it more now because of newer diabetes medications available that help prevent cardiac events. These include GLP-1 receptor agonists and SGLT-2 inhibitors; study sponsors Boehringer Ingelheim produces GLP-1 drug Trulicity and Eli Lilly and Company manufactures Jardiance, a SGLT-2 drug.

“Prevention is a major issue going forward; like having elevated blood pressure

readings, it’s the same for cardiovascular events. People don’t feel bad if their levels are slightly elevated. I think it resonates with people, that it’s important not just to lower their sugar levels, but you’re also adding an additional benefit. I’ve had people say to me, ‘You’re telling me this, but I have a cardiologist.’ I say, ‘We don’t want you to have to get a stent.’ I’m an endocrinologist but a lot of what I do overlaps with other specialties.”

know why they are there. Providing the nephrologist with that information, giving the patient copies of their labs, or having my office fax it over, all helps. There is so much room to help make it a smoother first visit, if possible.”

Following Standards of Medical Care

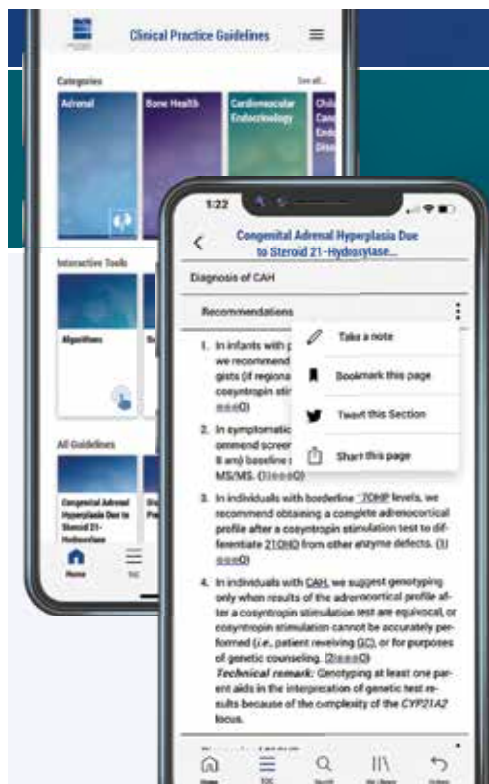
Professional guidelines are how physicians stay up to date, and collaboration among professional organizations can help develop one place for doctors to look to for how to provide the best care, Pessah-Pollack says.

The Unleashing the Truth website offers links to guidelines from the American Diabetes Association and the American

College of Cardiology’s practice standards for treating patients with type 2 diabetes. It’s a way to share knowledge among different providers caring for this patient group.

“Who is responsible for the care of the patient, especially with reducing cardiac risk,” Pessah-Pollack asks. “Providers don’t want to step on the toes of others and ask if it is ok to prescribe a type of insulin as a primary care physician. Who is the one who should be prescribing which medication? We are all invested in reducing the risk of cardiovascular disease. When you have that collaboration, you’re able to be on the same team. The theme of working together is really the goal.” ^{EN}

— 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 GOOD HABITS FOR BEING ON CALL IN THE NOVEMBER 2020 ISSUE.



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2021 Visionary:

Q&A with Teresa K. Woodruff



Teresa K. Woodruff, PhD, is no stranger to the Endocrine Society. As past president and former editor-in-chief of *Endocrinology*, Woodruff's dedication to the specialty is well-renowned. It should come as no surprise then that she has been recognized as the 2021 Laureate recipient of the Gerald D. Aurbach Award for Outstanding Translational Research — an award recognizing outstanding contributions to research that accelerate the transition of scientific discoveries into clinical applications.

Woodruff is provost at Michigan State University in East Lansing, Mich., and the founder and director of the Oncofertility Consortium. The Consortium is an international team composed of oncologists, fertility specialists, social scientists, educators, and policy makers armed with the mission of translating Woodruff's research to the clinical care of cancer survivors facing the struggles of infertility.

Endocrine News recently spoke with her to learn how the oncofertility sub-specialty became her purpose.

Endocrine News: The Laureate Award is named in honor Dr. Gerald Aurbach, MD, the Society's 68th president and a renowned researcher and clinician. As a former president of the Society yourself, what did news of the recognition mean to you?

Endocrine News talks with Teresa K. Woodruff, PhD, recipient of the 2021 Endocrine Society Gerald D. Aurbach Award for Outstanding Translational Research about what the award means to her and how she came to focus her life's work on oncofertility, a phrase that she first coined in 2006.

BY GLENDA FAUNTLEROY SHAW

“ The vision of the field of oncofertility is for all patients facing loss of fertility due to medical conditions and/or gonadotoxic therapies **to have access to oncofertility options and services.**”


— TERESA K. WOODRUFF, PHD, PROVOST, MICHIGAN STATE UNIVERSITY, EAST LANSING, MICH.

Woodruff: Dr. Aurbach was a renowned president of the Society and combined administrative and service excellence with his groundbreaking translational work. I am always struck by how often excellence in one is interoperable with the other, and Dr. Aurbach is a template.

EN: How did oncofertility become the pinpoint of your life's work? That is, was there a defining moment early in your career that sparked the trajectory into the specialty?

Woodruff: I was the basic science director for the Northwestern Lurie Comprehensive Cancer Center and was alerted that a young boy was coming downtown from our children's hospital to bank sperm. I thought that was terrific and asked, “how do we take care of the pediatric girls?” Realizing there was nothing we did for pediatric, adolescent, or young adult women led to the formation of this field of medicine.

EN: The website for your Oncofertility Consortium lists more than 140 partner facilities in the U.S. and dozens more abroad. What is the collective message you hope to send to women and couples across the globe facing the difficult challenges of conceiving after a cancer diagnosis?

Woodruff: The vision of the field of oncofertility is for all patients facing loss of fertility due to medical conditions and/or gonadotoxic therapies to have access to oncofertility options and services. The Oncofertility Consortium convened the field to enable the essential conversations necessary to drive oncofertility research, clinical practice, and patient options forward. We do this through shared values including collegiality, multi-disciplinary collaboration, inclusiveness, innovation, and altruism. All of its values are ultimately driven by patient-centeredness. 

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



REPRODUCTIVE LIFE AFTER CANCER

Nowadays, while both women and men can live long after a cancer diagnosis, many face the struggles of infertility due to the disease or side effects of the treatment.

Partner experts with the Oncofertility Consortium, located in the U.S. and 45 more countries around the globe, help address a wide spectrum of issues that challenge these survivors as they pursue their dreams of parenthood, including:

- ▶ Mechanisms underlying the fertility threat of life-preserving cancer drugs.
- ▶ Methods for cryopreservation (freezing), storing, and growing ovarian and gonadal tissue.
- ▶ In vitro follicle growth and oocyte maturation using a three-dimensional environment.
- ▶ Communication barriers between cancer patients and healthcare providers.
- ▶ Ethical and legal concerns regarding the use of fertility preservation technologies in cancer patients.

Source: Learn more at oncofertility.msu.edu.



U.S. Supreme Court Upholds the Affordable Care Act

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The Endocrine Society has advocated that healthcare should be affordable and accessible for all Americans, including those with preexisting conditions and chronic diseases.
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On June 17, the U.S. Supreme Court upheld the Affordable Care Act (ACA), also known as ObamaCare, against the latest Republican challenge, preserving the landmark law and its key protections for millions of people with preexisting health conditions.

The justices ruled 7 – 2 that the challengers lacked standing to sue, in a decision that marks the third major challenge to the ACA to be rebuffed by the Supreme Court in roughly a decade. The case arose after 18 states brought a legal challenge in 2018 aimed at striking down the ACA. Led by Texas, the challengers focused on the ACA tax penalty meant to induce the purchase of health insurance by most Americans. They argued that former President Trump’s 2017 tax cut, which zeroed out the penalty, made that provision unconstitutional. Without the tax penalty, they argued, ACA effectively lost its constitutional footing, requiring its invalidation by the court.

The Endocrine Society has advocated that healthcare should be affordable and accessible for all Americans, including those with preexisting conditions and chronic diseases. The Society has called for adhering to four core health reform principles:

- ▶ Guarantee health insurance coverage with no lifetime or annual caps or preexisting condition exclusions;
- ▶ Provide an option for young adults to remain on their parents’ insurance until age 26;
- ▶ Protect against unreasonable out-of-pocket costs; and
- ▶ Ensure access to preventative health services and women’s reproductive healthcare.

The Endocrine Society joined as an amicus (friend of the court) to the U.S. Supreme Court case *California vs. Texas* to demonstrate the need for access to care and the benefits of the ACA to the patients our members treat.

While this is the third time the Supreme Court upheld a challenge to the ACA, because the ruling was based on standing and not the substance of the law, it would be possible for future judicial challenges. However, many legal analysts believe future challenges may take place in Congress with opponents working to repeal the law. Currently, the majority of Americans support the ACA, particularly provisions related to preexisting conditions.

CMS Updates Requirements for CGM Coverage, Follow Endocrine Society Recommendations

The Endocrine Society successfully advocated to the Centers for Medicare and Medicaid Services (CMS) regarding Medicare coverage requirements of continuous glucose monitors (CGM).

In June, CMS announced two important changes to its local coverage rules related to CGMs. CMS had required a self-monitoring blood glucose (SMBG) frequency of four or more times a day to initiate CGM coverage. This requirement will be permanently eliminated, effective July 18, 2021. CMS also updated the coverage criteria to allow for the administration of inhalable insulin. The Society urged CMS to make these changes. We worked with our members, including the Clinical Affairs Core Committee (CACC) about the negative impact the fingerstick requirement had on people with diabetes and shared this information with CMS. In addition, we met with CMS staff regarding this issue. We will continue to advocate for coverage rules that ensure adequate access to diabetes technology for Medicare beneficiaries.

As this issue of *Endocrine News* goes to press, CMS is about to release its proposed Physician Fee Schedule for calendar year 2022. We will share analysis of the proposed rule with members and continue our advocacy to ensure endocrinologists are appropriately paid for their services.



Society Working to Expand Audio-Only Telehealth Access

The Endocrine Society continues to be a leading voice in advocating for expanding access to audio-only telehealth. Currently there is a waiver in place at the Centers for Medicare and Medicaid Services (CMS), which allows for coverage and payment of telephone-based (audio-only) services. This waiver ensures increased access for patients who do not have the necessary devices or the broadband connection needed to access virtual care.

The Endocrine Society has advocated to make this exemption permanent and successfully spearheaded a Senate initiative to support audio-only services. In June, Sens. Joe Manchin (D-WV) and Kevin Cramer (R-ND) led a letter to the Senate Appropriations Committee urging them to include report language with the legislation funding the Department of Health and Human Services (HHS) encouraging HHS to review the data collected on audio-only services delivered during the PHE (public health emergency). The Society worked closely with Manchin's office on the letter. We also launched an action alert for Society members to contact their senators urging them to sign the letter. Because of your advocacy, 18 senators joined the letter in support of audio-only telehealth. This letter is an important step forward in addressing access to care and health inequities. However, more work needs to be done to ensure that coverage and payment of audio-only services is made permanent. We encourage you to visit www.endocrine.org/advocacy to stay updated on this important issue.



Endocrine Society Continues Support for Gender-Affirming Care

This past April, Arkansas passed a law prohibiting gender-affirming care for minors, the first law of its kind in the U.S. As of June, over 20 state legislatures have followed in Arkansas' footsteps and introduced bills criminalizing physicians and other healthcare professionals from providing medically necessary gender-affirming care to transgender and gender-diverse youth.

The Endocrine Society opposes these legislative efforts because they do not conform to medical evidence and clinical practice. Some of these bills, such as the Arkansas bill, are already facing legal challenges. The Endocrine Society is working closely

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with the American Academy of Pediatrics and the ACLU to provide medical rationale to the court in an amicus (friend of the court) brief, so it has a better understanding of the need for gender-affirming care for transgender youth.

In a similar case in the U.K., the Endocrine Society joined a coalition of LGBTQ+, youth, reproductive health, and medical organizations to intervene in an appeal of a court decision, *Bell vs. Tavistock*, that minors younger than age 16 likely could not give informed consent for pubertal suppression. The High Court's ruling would prevent transgender and gender-diverse minors from obtaining the medical care they need. The intervention hearing took place at the end of June, and we will keep Society members apprised of developments in this case.

In addition to the Society's work with the courts, we also worked with the American Medical Association's (AMA's) House of Delegates to pass a resolution opposing efforts to criminalize evidence-based medical care for transgender youth. The resolution, which cites the Endocrine Society's Clinical Practice Guidelines on transgender care, makes it AMA policy to oppose the criminalization and otherwise undue restriction of evidence-based gender-affirming care.

For more information about our advocacy efforts, visit: endocrine.org/transgenderadvocacy.

Endocrine Society Welcomes Reintroduction of Personal Care Products Bill

The Endocrine Society applauded the reintroduction of a Senate bill that would give government regulators needed authority to protect consumers from exposure to hazardous endocrine-disrupting chemicals (EDCs) in cosmetics and other personal care products.

On June 17, Sens. Dianne Feinstein (D-CA) and Susan Collins (R-ME) reintroduced the Personal Care Products Safety Act (PCPSA), a bill to ensure consumers are protected from hazards associated with exposure to chemicals in personal care products such as cosmetics and lotions. The bill would update the framework the U.S. Food and Drug Administration (FDA) uses to evaluate chemicals in personal care products by setting a rigorous safety standard, giving the FDA recall authority over products with harmful ingredients and providing the public with more information about the chemicals in the products they are purchasing. The Society has endorsed the PCPSA and welcomed new provisions in the updated bill text, including a ban on per- and polyfluoroalkyl substances (PFAS) in personal care products.

Attention now turns to the House of Representatives, which has yet to introduce a companion bill consistent with the PCPSA in this Congress. The Society will continue work to build support in the House and Senate for improved oversight of chemicals in cosmetics and ensure that the FDA has the needed tools to rigorously evaluate products for the presence of chemicals that interfere with endocrine systems.



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Photo: NeelTacharan13/Shutterstock.com

EDC Advisory Group Members Participate in European Union Policy Meetings

June 22 was an extremely busy day for our members advocating for better regulatory control of endocrine-disrupting chemicals (EDCs) in the European Union.

First, the Society's EDC Advisory Group member Angel Nadal, PhD, joined a special webinar series organized by member of the European Parliament Maria Arena (S&D) to discuss opportunities for the better identification of EDCs at the EU level. During his presentation, Nadal described health problems such as metabolic disruption linked to EDCs, how EDCs work, why EDCs often display non-monotonic dose-responses, and how this information challenges a threshold-based approach to regulation. He gave scientific evidence supporting a revision of EU legislation to better protect health and the environment from EDC exposures. Meanwhile, two other members of the Advisory Group, Anne-Simone Parent, MD, PhD, and Barbara Demeneix, PhD, DSc, were invited to participate in a workshop organized by the Belgian government to help inform the development of their own national plan for EDCs. Demeneix and Parent shared the latest science on EDCs and how chemical interference with endocrine systems impact children's health.

Our members' participation in these events further solidifies our reputation as a trusted advisory to EU policy makers on the subject of EDCs. At the national and EU level, policy makers increasingly turn to the Society to hear our advice on the health effects of EDCs and how regulatory frameworks can be improved to protect human and ecological health from the myriad hazards associated with these chemicals. Our role is more important now than ever, as the EU looks to implement actions described in the new Chemicals Strategy for Sustainability and member states pursue their own actions to address public concerns related to EDCs.

Stay tuned for more developments and reach out to Endocrine Society staff for details on how you can get involved and influence EU-level EDC policies. **EN**

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EMERGENCY KIT RESOURCE FOR PATIENTS

DIABETES DISASTER RELIEF POCKET GUIDE

hormone.org/disasterrelief



EMERGENCY INFORMATION

Name: _____

Circle Type of Diabetes: Type 1 Type 2 Gestational Monogenic

Physician: _____

Location: _____

Email: _____ Phone: _____

Emergency Contact Name/Relation: _____

Emergency Contact Phone: _____

List of Current Medications: (Name/Dosage):

Name: _____	Dosage: _____
Name: _____	Dosage: _____
Name: _____	Dosage: _____

Make/Model of CGM or Insulin Pump (if applicable): _____

In an emergency where I am unable to communicate, please read both sides of this guide to know what special care I need and who to contact.

EMERGENCY ASSISTANCE CONTACT LIST

1-800-733-2767	American Red Cross
Website: emergency.cdc.gov	CDC
1-800-DIABETES (1-800-342-2383)	Diabetes Call Center (ADA)
1-800-985-5990	Disaster Distress Line (US Govt.)
1-800-621-FEMA (1-800-621-3362)	FEMA
Website: ifusa.org 1-352-327-8649	Insulin For Life
INSULIN PUMP/CGM	
1-855-632-8658	Abbott
1-888-738-3646	Dexcom
1-800-633-8766	Medtronic
1-800-591-3455	Omnipod/Insulet
1-877-801-6901	Tandem
INSULIN SUPPORT	
1-800-545-5979	Lilly
1-800-727-6500	Novo Nordisk
1-800-633-1610	Sanofi-Aventis
PHARMACIES	
Website: Healthcareaready.org/roopen	Freemedicine.com
1-573-996-7300	Prescription Assistance
1-888-477-2669	

RECOGNIZING SIGNS OF HYPOGLYCEMIA

Hypoglycemia is the term for low blood glucose (sugar). Glucose is produced from the food you eat. Glucose is the “fuel” that your brain and body need to function properly. If you are living with diabetes, it is important to check your blood glucose regularly.

SIGNS AND SYMPTOMS



MILD:
55-70 MG/DL
Hunger
Nervousness and shakiness
Sweating



MODERATE:
BELOW 55 MG/DL
Dizziness
Sleepiness
Confusion
Difficulty speaking
Feeling anxious or weak



SEVERE:
Requires assistance
Seizure or convulsion
Loss of consciousness or coma

15
GRAMS
OF CARBS

If hypoglycemia is not corrected right away, it can quickly worsen. If your blood sugar is low, you should eat or drink something that will quickly raise your blood sugar.

For mild to moderate hypoglycemia, you should consume: **4 glucose tablets, 5-6 pieces of hard candy, 4 ounces of orange juice, or 6 ounces of regular (not diet) soda.**

Wait 15 minutes and retest your blood glucose level. If it is still low, consume another 15 grams of carbohydrate.

FACT:

STRESS CAN MAKE YOUR BLOOD SUGAR GO UP. PHYSICAL EXERTION CAN MAKE YOUR BLOOD SUGAR GO DOWN.

RECOGNIZING SIGNS OF HYPERGLYCEMIA

Hyperglycemia is the term for high blood glucose (sugar). Several factors can contribute to hyperglycemia including food, sickness, some medications, or skipping or not taking enough glucose-lowering medication.



SIGNS AND SYMPTOMS

Blood sugar more than 180 mg/dL
Frequent urination
Increased thirst
Blurred vision
Trouble concentrating
Fatigue
Headaches



CALL YOUR DOCTOR IF...

Your blood glucose is more than 300 mg/dL even though you've taken your diabetes medication and you have trouble keeping your blood glucose within your desired range after several attempts.



If hyperglycemia goes untreated it can cause severe dehydration and require hospitalization.

FACT:

IF YOU LOSE POWER AND YOU HAVE UNUSED INSULIN, DON'T THROW IT OUT! IN AN EMERGENCY, IT IS OKAY TO USE EXPIRED OR NON-REFRIGERATED, UNOPENED INSULIN.

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HormoneHealthN

VISIT HORMONE.ORG



The Next Generation of Diabetes Care

As pediatric diabetes cases continue to rise, a number of manufacturers have created products that make managing the disease a little less scary for these younger patients.

COMPILED AND WRITTEN BY COURTNEY CARSON

Pediatric diabetes is on the rise. While type 1 diabetes can develop at any age, it is most prevalent in children and teens — the average age of diagnosis is 13 years. An estimated 85% of all type 1 diagnoses take place in people aged younger than 20 years old. But type 1 diabetes (formerly known as juvenile diabetes) isn't the only diagnosis to affect children. Type 2 diabetes, which usually develops in middle age or later, is becoming more and more common among children and adolescents in the U.S. The National Institutes of Health (NIH) reports that, each year, rates of type 1 diabetes are rising by 1.8%, and rates of type 2 diabetes are rising by 4.8%.

While it is true that young people who develop diabetes have a higher risk of health challenges throughout their lives, there are steps to be taken to control the condition, allowing many people with diabetes to live full and healthy lives. In recent years, the healthcare market has taken notice of the growing population of children with diabetes and not only done its part to tailor medical supplies to fit the needs of younger patients; it is actually making these products appealing to children.

Here, we round up some of those products that can help make an otherwise difficult disease more bearable for kids and parents alike.



◀ Love Bug Diabetes Case

This Love Bug Diabetes Case is perfect for the little one who could use a companion while they're on the go. The heart and butterfly design provides a comforting and friendly connection to daily diabetes activities while also being functional. It features two large compartments for easy organization, a pocket for the child's medical ID, removable waste pouches for used test strips, and even carries snacks. This case fits all glucose meters and insulin pump infusion sets. Additional designs are available for animal lovers, sports enthusiasts, and more.

www.myabetic.com

▶ Kids' SPIbelt

The Kids' SPIbelt® is perfect for active children who need to carry medical supplies such as insulin pumps, inhalers, EpiPen®, or CGMs (continuous glucose monitoring systems). The Kids' SPIbelt holds insulin pumps close to the body without tangling or bouncing. Every Kids' SPIbelt can securely accommodate cords and infusion tubing through a reinforced pass-through hole.

The pass-through hole is discretely placed behind the pocket to allow infusion tubing to feed through the patented pouch design. SPIbelt is specially designed so it won't ride or shift while participating in vigorous activities. This belt fits waist size 18" through 24", fitting most children between two to 10 years old.

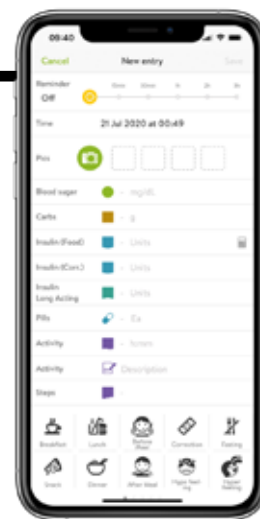
www.spibelt.com



► mySugr Junior

The mySugr Junior app is a pediatric diabetes platform that educates kids while connecting parents. The informative platform is not only convenient but is also fun for young people with diabetes thanks to its gamified interface. In addition to helping users set up a daily diabetes routine, mySugr Junior also works as a blood sugar monitor and even tracks the child's physical activity levels.

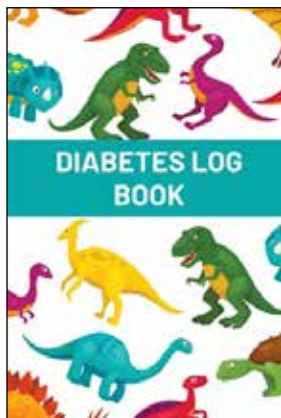
www.mysugr.com



◀ Diabetes Log Book For Kids

This Diabetes Log Book by Teresa Rother features an easy-to-use layout for tracking daily blood glucose levels while maintaining information to be monitored by caregivers and healthcare providers. Each day, children can fill in the spaces to record meals, snacks, carbs, exercise, insulin doses, and bedtime readings. The compact 6" x 9" travel size makes this book easy to carry to school or other activities. The two-year log book includes space for 104 weeks of tracking and includes a section for emergency contacts and additional notes.

www.bookdepository.com



► Patch Peelz

Founded in 2011, Pump Peelz was created to help people with diabetes live with more confidence by turning insecurities associated with wearing a medical device into a form of individual self-expression. One of the company's most popular items is Patch Peelz adhesive tapes, designed to secure CGMs, infusion sets, or insulin pumps. The universally sized Dexcom adhesive is designed for those with sensitive skin looking to extend the life of their sensor for up to seven days. Patch Peelz are compatible with the Dexcom G6, Dexcom G5, and Dexcom G4. Patch Peelz are also available for the Medtronic Guardian Sensor as well as infusion sets. The patches are water resistant, hypoallergenic, lightweight, and durable.

www.pumppeelz.com



◀ American Girl Diabetes Care Kit

While makers of the popular American Girl dolls may not offer medical supplies to treat children with diabetes, they made headlines when they created a doll diabetes supply kit. The goal of American Girl has always been to create dolls, stories, and products that act as both mirrors and windows — giving girls an opportunity to see a direct reflection of themselves or a chance to learn about a life that may be very different from their own. The addition of the diabetes supply kit empowers children with diabetes by giving them a doll that is even more like them while also giving an opportunity to teach peers about the medical journey of living with diabetes. This set comes with a variety of pretend doll-sized tools to help girls care for their Truly Me™ dolls with diabetes including a blood sugar monitor and lancing device, an insulin pump that can be clipped to a doll's waistband, an insulin pen for dolls that aren't using the pump, and more. The kit was developed with the University of Wisconsin Children's Hospital to ensure that the diabetes kit was accurate and reflective of the real items children need to manage their diabetes.

www.americangirl.com 



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