IN SEARCH OF ANSWERS: OBESITY STUDIES AIM TO FIND THE PATHWAY OF PREVENTION

JULY 2017

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

Endocrine news

INTERNATIONAL

Weighing options

Obesity is the biggest health threat to the world's youth. The Endocrine Society's new Clinical Practice Guideline makes one thing clear: Prevention is key to stopping this epidemic in its tracks.

HAPPY CAMPERS:
Two endocrinologists report from a diabetes camp

CEU Q&A:
Why you should attend the 2017 Clinical Endocrinology Update

ENDOCRINE SOCIETY
Hormone Science to Health

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THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

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Pediatric Obesity Guideline Emphasizes the Importance of Prevention

With the number of children with obesity at epidemic levels, clinicians need to redouble prevention efforts — and even get involved in advocating policies to fight obesogenic environments.

BY ERIC SEABORG

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Camp Possibilities, a camp for children with diabetes, was a chance for Andrew Paul Demidowich, MD, and Mihail "Misha" Zilbermint, MD, to learn more about the intricacies of treatment. However, the lessons they took away from their experiences were more than simply treating a disease, it was understanding a lifestyle.

BY ANDREW PAUL DEMIDOWICH, MD, AND MIHAIL "MISHA" ZILBERMINT, MD

FEATURE

28 | An Ounce of Prevention

Studies presented at **ENDO 2017** in Orlando or published in the *Journal of the Endocrine Society* all reveal how obesity is the greatest threat to the health of the young. Fortunately, endocrine science is close to finding answers on how to prevent this epidemic.

BY KELLY HORVATH

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Endocrine News talks with Janet A. Schlechte, MD, Chair, Clinical Endocrinology Steering Committee, about the 69th Annual Clinical Endocrinology Update in Chicago in September and why it is a unique and valuable learning experience for endocrinologists at all levels in their careers.

FROM THE **EDITOR**

A Closer Look at Pediatric Endocrinology

AS IT HAS FOR THE LAST FEW YEARS, *ENDOCRINE NEWS* IS using July — smack dab in the middle of summer — to present articles on the topic of pediatric endocrinology. And where better to start than at summer camp? Specifically, a summer camp for kids with diabetes. In "Happy Campers" (p. 22), Andrew Paul Demidowich, MD, and Mihail Zilbermint, MD, go into great detail about their time at Camp Possibilities in rural Maryland where kids with diabetes get to have a blast and participate in a variety of activities from fishing and swimming to putting on a talent show. While working at the camp was one of the most valuable learning experiences the two endocrinologists ever had, there were times when it was both touching and terrifying, but ultimately "it made us better and more compassionate doctors who understand that diabetes is also a lifestyle, not just a disease."

Moving from diabetes to a condition that all too often is associated with the disease, we have two articles that delve into research surrounding pediatric obesity, one of the greatest — if not the greatest health risk — facing children today. In "Weighing Options" on page 18, Eric Seaborg has given us an in-depth overview of the Endocrine Society's new publication, "Pediatric Obesity — Assessment, Treatment, and Prevention: An Endocrine Society Clinical Practice Guideline." The Society stresses in the guideline that the most important part of managing obesity in children is outside of the clinician's office in terms of prevention. "This epidemic is not going to be solved in a clinician's office," says Dennis M. Styne, MD, who chaired the task force that created the guideline. "This problem spans the cities and countries in which children live. It spans public policy, advertising, and all of the things in our daily life that affect the child. Only a political and society-wide change will lead to the diminution of this epidemic."

In "An Ounce of Prevention" on page 28, Kelly Horvath has consolidated three separate studies about pediatric obesity that were all presented in Orlando at **ENDO 2017**, as well as a study from the newly launched *Journal of the Endocrine Society*. These studies touched on a variety of topics as they relate to childhood obesity including vitamin D deficiency, diabetes, and the failure of obesity intervention in some children, but not in others. Marisa Censani, MD, director of the Pediatric Obesity Program at Weill Cornell Medical Center and one of the **ENDO 2017** presenters summed up these studies very succinctly: "As pediatric endocrinologists, our goal is to address obesity and its comorbidities and to serve as advocates for the future health of our patients."

Even though we've devoted a lot of space to the topic of endocrine issues in children this month, rest assured that it is a topic we will continue to feature on the pages of *Endocrine News* on a regular basis. After all, our future is at stake. EN

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

JULY 2017

Endocrine news

THE LEADING MAGAZINE FOR ENDOCRINOLOGISTS

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www.sheridan.com

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

Print ISSN 2157-2089 Online ISSN 2157-2097

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ENDOCRINE SOCIETY
Hormone Science to Health

New Online Tools Highlight Endocrine Topics and Help Authors

OUR 2017 MEMBER NEEDS ASSESSMENT suggests that members are not fully aware of all the products and services that the Endocrine Society offers. We have new tools for authors and recent enhancements to our website that may be very useful to you.

Endocrine Topic Pages

Our Knowledge Integration Task Force brought forward a list of key recommendations that challenge our organization to modernize the way we prioritize, create, and deliver new programs, products, and services for our member scientists and physicians, their patients, and other important audiences.

One of the primary Knowledge Integration goals is to improve the design and delivery of our content to members, taking into account the increasing use of mobile platforms and the desire to quickly find information. In February, we launched Endocrine Topics pages (**endocrine.org/topics**) to curate content the way that members typically prefer: By topic. Each page highlights recent news, education, guidelines, research from our journals, and related meetings. Additional pages were created for endocrine-disrupting chemicals and the U.S. Quality Payment Program (MACRA). Although these pages remain a work in progress, they have already shown great success. We've seen more than a doubling of the time spent browsing these pages, higher engagement, and greater discovery of related content. We will continue to improve as we learn what does and does not work best for our members.

AUTHOR TOOLS

The Endocrine Society provides all of its journal authors with a variety of free tools for increasing the online discoverability and citation of their published work by readers and colleagues worldwide. These tools include:

- **FREE ACCESS LINKS:** All corresponding authors receive a free access link to their online article from our publishing partner, Oxford University Press, to share with co-authors and colleagues.
- **KUDOS:** All authors receive free registration of their article with the Kudos website, where they can add information about the importance of their work and add links to other materials — slides, videos, etc. — that provide context for a broader audience. From their Kudos site, authors can share that information with their social networks including Twitter, Facebook, and LinkedIn, web pages, or email contacts, and then track clicks, views, downloads, and citations to see results.
- **ALTMETRICS:** The Altmetric badge that appears with every article tracks mentions and shares of that article around the world across bibliometric and social media outlets, blogs, newspapers, Wikipedia, public policy documents, preprint servers, post-publication peer-review forums, and online reference managers.
- **ORCID:** We encourage all authors to obtain an ORCID identification number. ORCID is a global registry of authors and researchers established by an international collaboration of publishers, researchers, research institutions, and funders. An ORCID number provides an author with a unique identifier that simplifies research workflows, resolves name ambiguity, and ensures correct attribution of research and other activities. To register and learn about other benefits of an ORCID number, go to **http://oxfordjournals.org/en/authors/orcid.html**

Additional information on these and other author tools from the Endocrine Society, as well as tips for promoting your work through other means, including short videos, can be found in our Author Resources Center at **www.endocrine.org/AuthorResources**.

We encourage all our members to visit our website and use these new tools and provide us your feedback on further ways to improve the member experience. Please let me know how we can best meet your needs — you can email me at **president@endocrine.org.**

— Lynnette Nieman, MD, President, the Endocrine Society

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Remembering Agnes Schonbrunn

Agnes "Agi" Schonbrunn, PhD

> "She will be long remembered for her passion for science, her commitment to teaching, and her service. **She was a wonderful supporter of women in science and will be greatly missed.**"
>
> — CARMEN W. DESSAUER, PHD, PROFESSOR AND DIRECTOR, TIPS TRAINING PROGRAM, MCGOVERN MEDICAL SCHOOL, UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT HOUSTON

The Endocrine Society is remembering Agnes "Agi" Schonbrunn, PhD, vice chair, Department of Integrative Biology & Pharmacology at the University of Texas Health Science Center at Houston, who passed away in June.

Schonbrunn was an enthusiastic member of the Endocrine Society and was a member of the Annual Meeting Steering Committee at the time of her death. In the past, she was a member of and chaired the Laureate Awards, SATF, and Committee on Governance Affairs and had served as an associate editor of the Society's journal, *Molecular Endocrinology*. She is also a recipient of the Gerald D. Aurbach Award for Outstanding Translational Research.

Her research was concentrated in the arena of somastatin and somatostatin receptors. In fact, she was the first to identify somatostatin receptors functionally and biochemically and has worked on somatostatin receptor structure, signaling, regulation, and pharmacology for over 30 years and has published over 110 widely cited scientific papers. Aside from the Aurbach Award, she received the Nicholas T. Zervas Lectureship in Pituitary and Neuroendocrine Disorders from Harvard University.

In a 2015 editorial in *Molecular Endocrinology* entitled "Reproducibility in Research: A Cautionary Tale and Lessons Not Learned," Schonbrunn discussed the use of scientists using very specific research compounds which often could not be accurately reproduced because they were proprietary. She laments that the compounds used in many experiments that are simply identified with an alphanumeric code, useful only to the group supplying the material and provides absolutely no information to scientific community. Schonbrunn referred to these compounds as "magic powders" and pondered, "How is it that many scientists and journals consider such ignorance acceptable and unavoidable?"

Schonbrunn served as president of Women in Endocrinology and was a member of the Board of Directors of the Pituitary Society. "She will be long remembered for her passion for science, her commitment to teaching, and her service," says Carmen W. Dessauer, PhD, professor and director, TIPS Training Program, McGovern Medical School, University of Texas Health Science Center at Houston. "She was a wonderful supporter of women in science and will be greatly missed."

University of Pisa rector Paolo Mancarella (left) presents John Paul Bilezikian, PhD, MD, with an honorary doctorate in a ceremony in Pisa, Italy, on June 14.

MEMBERS in the NEWS

John Paul Bilezikian Honored by University of Pisa

John Paul Bilezikian, PhD, MD, was honored by Pisa University in Italy with a doctorate *honoris causa* in clinical and translational science. Bilezikian, chief of the Division of Endocrinology and director of Metabolic Bone Diseases Program at Columbia University in New York, is a past editor-in-chief of *The Journal of Clinical Endocrinology & Metabolism* (2000 – 2004). A veteran of a variety of Society committees, currently Belezikian serves on the Society's Nominating Committee.

Bilezikian, a renowned expert on bone metabolism — particularly parathyroid disease — has collaborated with Pisa University for more than 15 years. Working closely with Claudio Marcocci, professor of endocrinology and head of Endocrine Unit 2 at University Hospital of Pisa, he has made substantial contributions to the university's endocrinology department, as well as increasing its scientific visibility. It was with Bilezikian's input that enabled research conducted at the university and hospital to be presented in a variety of prestigious medical journals around the world.

The collaboration between Marcocci and Bilezikian has brought acclaim to the university for parathyroid disorders. "As part of this collaboration, research activities have been established to investigate the pathogenic mechanisms of parathyroid tumorigenesis with results that have appeared in top international scientific journals," Marcocci says. "This scientific knowledge has been translated into reliable clinical activities that have made the Center for the Study of Metabolic Bone Diseases of the University Hospital of Pisa a main referral center at the national level."

In his introductory speech, Paolo Mancarella, rector of Pisa University, recalls that the university's school of endocrinology, which was established in the 1960s, has become a reference point for thyroid and parathyroid diseases, not just in Italy but throughout Europe. "This excellence has been created over time," he says, adding "thanks mainly to the impetus given to the process of internationalization and the ongoing confrontation with the authoritative experts in the field, including Professor Bilezikian, who plays a central role."

After he was presented with the honorary doctorate, Bilezikian gave the keynote address entitled "Disorders of the Parathyroid Glands: New Concepts and Insights Over 40 Years."

Aaron Lohr

Aaron Lohr Named Society's Chief Communications Officer

The Endocrine Society's director, media relations, Aaron Lohr, has been promoted to the position of Chief Communications Officer.

In his new capacity, Lohr will serve as the Society's chief storyteller and will be responsible for developing and implementing a content-driven comprehensive communications and marketing strategy. He will also be responsible for the Society's digital strategy, web destinations, email, social, and all online communications and integration.

Lohr joined the Society in 2007 and helped build a media relations program that garnered record media coverage of the Society year after year. His media training sessions have helped the Society to develop a strong stable of expert spokespeople who are sought after by journalists all over the world. He's secured media coverage in top tier outlets including the *New York Times, Wall Street Journal,* BBC News, CNN, and *Le Monde.*

Lohr also developed the Society's message center which assures the organization delivers strategic, memorable, and consistent communications across the Society's channels and to each of its audiences.

"Aaron's leadership, forward-looking strategic approach, and demonstrated commitment to integrated communications will strengthen the Society as he steps into the roles of chief digital strategist, storyteller, and proprietor of the voice of the Society and its members," says Society CEO Barbara Byrd Keenan.

Prior to joining the Society, Lohr served as manager of public relations for ORC Macro where his many clients included the Substance Abuse and Mental Health Services Administration, the Maryland Department of Health and Mental Hygiene, the Office of the Surgeon General, and the National Eye Institute.

Endocrine Society Signs Amicus Brief for G.G. v Gloucester

On May 15, an amicus brief was submitted on behalf of 16 medical and mental health organizations, including the Endocrine Society, to the Fourth Circuit Court of Appeals in support of the plaintiff.

Amicus briefs are legal documents filed in appellate court cases by non-litigants who have a strong interest in the subject matter. The briefs advise the court of additional relevant information or arguments that the court might wish to consider.

G.G. v Gloucester County School Board was brought before the court by a transgender student in Gloucester County, Va., because he was prohibited from using the bathroom at school that matched his gender identity. The brief informed the Court of the medical consensus regarding what it means to be transgender; the protocols for the treatment of gender dysphoria; and the predictable harms to the health and well-being of transgender adolescents when they are excluded from restrooms that match their gender identity.

The case was previously before the Supreme Court but was vacated and remanded to the Fourth Circuit Court following the Trump Administration's decision to withdraw previous federal guidance that said school divisions must allow transgender students to use the bathroom matching their gender identity.

Aside from the Endocrine Society, other medical and health organizations who co-submitted the brief are the American Academy of Pediatrics, the American Psychiatric Association, the American College of Physicians, the American Academy of Child and Adolescent Psychiatry, the American Academy of Family Physicians, the American Academy of Nursing, the American Academy of Physician Assistants, the American Medical Women's Association, the American Nurses Association, the American Psychoanalytic Association, the Association of Medical School Pediatric Department Chairs, GLMA: Health Professionals Advancing LGBT Equality, Mental Health America, the National Association of Social Workers, the Society for Adolescent Health and Medicine, and the Society for Physician Assistants in Pediatrics.

MEMBERS in the NEWS

Andrea Dunaif, MD

Society Past-President Andrea Dunaif Named Division Chief at Mount Sinai

Endocrine Society past-president, Andrea Dunaif, MD, has been appointed the new chief for the Hilda and J. Lester Gabrilove Division of Endocrinology, Diabetes, and Bone Disease for the Mount Sinai Health System. She replaces Society member Derek Leroith, MD, PhD, who served as interim chief for the last year.

Dunaif, who served as the Endocrine Society president from 2005 to 2006, will build on Mount Sinai's research on diabetes, metabolism, and endocrine disorders. Dunaif also plans to expand Mount Sinai's comprehensive clinical services for patients with diabetes and other endocrine disorders, including its artificial pancreas program.

Dunaif comes to Mount Sinai from Northwestern University's Feinberg School of Medicine in Chicago, where she is the Charles F. Kettering Professor of Endocrinology and Metabolism and was the chief of the Division of Endocrinology, Metabolism, and Molecular Medicine for 10 years. Prior to joining Northwestern, she held a number of leadership positions in academic medicine, including chief of the Division of Women's Health at Brigham and Women's Hospital in Boston, director of Harvard Medical School's Center of Excellence in Woman's Health, and director of the Center for Clinical Research at Northwestern.

Dunaif is leading an international effort to map the genes for PCOS, a leading cause of diabetes in women. She will continue this important research and other work in diabetes and insulin resistance at Mount Sinai.

"I'm very excited to return to Mount Sinai, where I began my academic career in 1982 as an instructor in the Departments of Medicine and Obstetrics and Gynecology," Dunaif says. "I look forward to working with the outstanding faculty at Mount Sinai and to collaborating closely with the scientists in the Mount Sinai Diabetes, Obesity, and Metabolism Institute."

Dunaif has been continuously funded by the National Institutes of Health as a principal investigator for more than 30 years. She has received a multitude of awards and honors, including election to the American Society for Clinical Investigation and the Association of American Physicians. She is a member of numerous advisory and editorial boards and committees. EN

"I'm very excited to return to Mount Sinai, where I began my academic career in 1982 as an instructor in the Departments of Medicine and Obstetrics and Gynecology. I look forward to working with the outstanding faculty at Mount Sinai and to collaborating closely with the scientists in the Mount Sinai Diabetes, Obesity, and Metabolism Institute."

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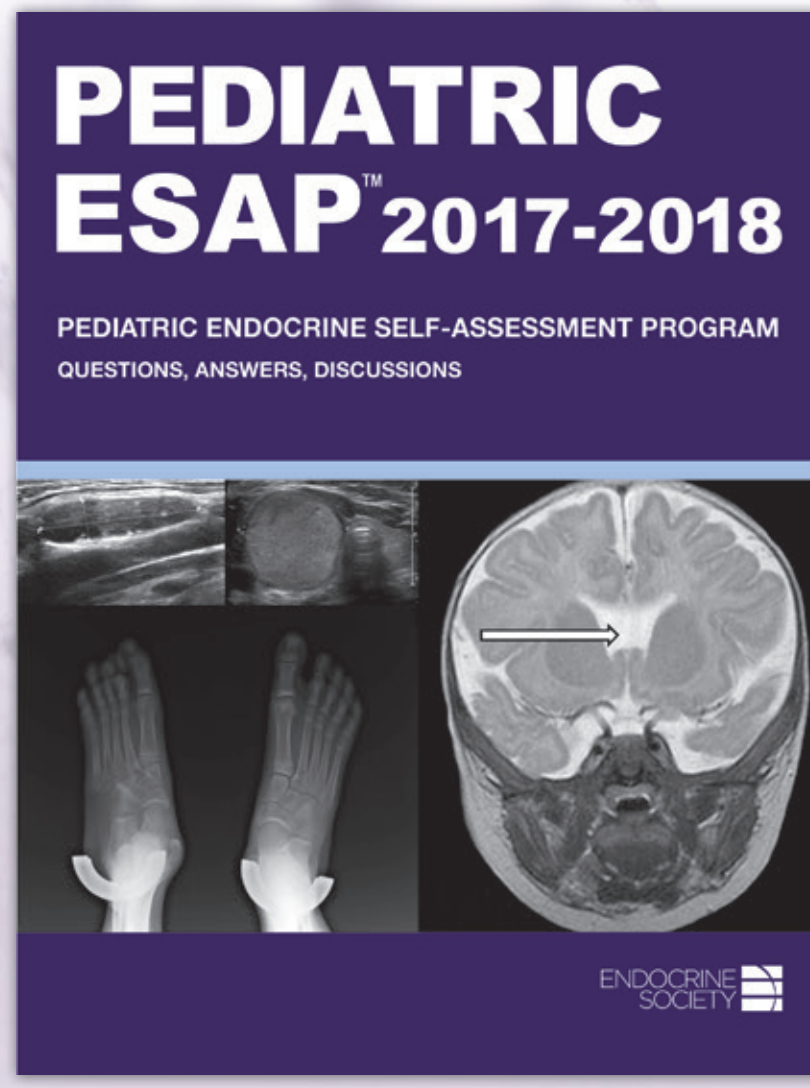

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Special discounts are available by registering for both meetings together.

The Chicago Marriott will be the location for the joint meeting of the 2017 Clinical Endocrinology Update (CEU)/Endocrine Board Review (EBR). Each year CEU brings together hundreds of endocrine clinicians for a unique learning experience and opportunities to network with expert faculty and colleagues. Attend the 69th CEU to receive the most trusted and clinically relevant information about recent advances in the field of endocrinology. The educational programming at CEU appeals to clinicians at all levels of practice, as well as fellows and other members of the clinical practice team.

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

Santa Fe Bone Symposium

Santa Fe, N.M., August 4 – 5, 2017
This annual forum devoted to advances in the science and economics of osteoporosis, metabolic bone disease, and assessment of skeletal health is for healthcare providers, scientists, and researchers with a special interest in bone disease, and for bone densitometry technologists who seek a high level of knowledge in their field.
www.ofnm.org

Reducing the Risk of Preventable Adverse Drug Events associated with Hypoglycemia in the Older Population

Silver Spring, Md., September 12, 2017
The FDA's Center for Drug Evaluation and Research, Professional Affairs and Stakeholder Engagement Staff (PASES) is hosting this one-day public workshop to discuss the importance of individualized glycemic control targets for older patients with diabetes, in order to reduce the risk of serious hypoglycemia, identify and discuss medication safety efforts, discuss future areas of research which could be explored to reduce the risk of serious hypoglycemia, and disseminate the results of this discussion to inform patients, patient advocates, and healthcare practitioners.
www.endocrine.org/fdahypoglycemia

EndoBridge 2017

Antalya, Turkey, October 19 – 22, 2017
Jointly organized by the Endocrine Society, the European Society of Endocrinology, and the Society of Endocrinology and Metabolism of Turkey, EndoBridge will provide a comprehensive update in the field of endocrinology. This meeting is designed for the clinical endocrinologist. The official language of the meeting is English, but simultaneous translation will be available in Russian, Arabic, and Turkish.
info@endobridge.org

Obesity Week

Washington D.C., October 29 – November 2, 2017
The world's largest obesity-centric conference presents cutting-edge research, medical advances, surgical practices, public policy, and more as it continues to bring together world-renowned obesity experts to share innovations and breakthroughs in obesity treatment.
www.obesityweek.com

19th ASEAN Federation of Endocrine Societies 2017

Yangon, Myanmar, November 9 – 12, 2017
ASEAN Federation of Endocrine Societies (AFES) is an association of seven endocrine societies in Southeast Asia with a conference held every two years. With an extensive program covering a broad array of topics, various networking opportunities, poster sessions, continuing medical education, updates on new products and technologies at the AFES Expo, keynote speakers, and more, AFES 2017 is a "must-attend" event in Asia and one of the most recognized congresses among the clinicians and researchers in endocrinology.
www.afes2017myanmar.com

Translational Reproductive Biology and Clinical Reproductive Endocrinology 2017

New York, N.Y., November 16 – 19, 2017
The objective of this conference is to offer an authoritative 2017 update for reproductive clinicians and researchers, focusing on new translational developments in the field of reproductive biology and physiology, as well as clinically relevant patient-care issues. The conference aims to offer basic scientists and clinicians a unique and intimate framework for interactions and exchanges of ideas around paradigm changes and imminent new developments of significance.
www.afes2017myanmar.com

WHY **ENDOCRINOLOGY?**

A Serendipitous Choice!

BY LISA TANNOCK, MD, Chief, Division of Endocrinology and Molecular Medicine; Associate Chair for Administration, Department of Internal Medicine, University of Kentucky, Lexington

My path to my beloved career was not straightforward, or as initially planned. In fact, many of my choices have been serendipitous. Starting in high school I realized that I was intrigued and fascinated by science, particularly biology. I went to McGill University for my undergraduate studies, and was fortunate enough to obtain a summer research position with the late, great Dr. Tony Pawson, at the University of Toronto. Tony was a truly remarkable scientist who investigated signal transduction with a focus on cancer biology. I spent three summers in his lab and had a part-time job there during medical school. His lab was large — many students, post-docs, and technicians, and as the most junior member I did not have assigned space, but rather worked at whichever bench was temporarily vacant due to vacation, maternity leave, etc. The research environment was fabulous. Even as an undergraduate summer student I was assigned my own project, held to deadlines, trained in documentation standards, and given responsibility. I remember the day I was assigned my own set of pipetmen — I truly felt I belonged! It really wasn't until years later that I understood the impact Tony had on science and became aware of his incredible accomplishments; at that time, he was just my mentor, who inspired me to a career in science.

At that point, I had decided to enter graduate school and planned to get my PhD with Tony. However, a number of Ontario medical schools were offering admission after only two years of undergraduate studies at that time. I saw my friends studying for the MCAT, and applying to medical school, and I thought, why not? Maybe I could be a physician scientist; the cynical side of me realized that it was a relatively financially secure path to a research career (at that point the cost of medical school in Canada was not a limiting or influencing factor). So I applied and was accepted to the University of Toronto. To my pleasant surprise, I found that I loved it! We were an enormous class — 252/year, and I met a great group of people who have remained life-long friends. One of my closest friends (Jenn), a fellow classmate, had type 1 diabetes, and I can recall asking her (early in first year) "what is diabetes?" but at that point it was just curiosity about my friend's diagnosis. Throughout medical school my plan remained to go into internal medicine with a focus on hematology/oncology, and get a PhD with Tony Pawson.

> **"Here was a specialty that had a true systemic focus, involved complex pathways and feedback algorithms — it was a specialty that required thinking, not rote memorization. And beyond the scientific interest, I felt I was able to help patients."**

I stayed at the University of Toronto for my internal medicine residency. One of my earliest specialty rotations in internship was inpatient hematology — and I was miserable! The majority of the patients were undergoing bone marrow transplants and many were young adults (my age) with acute leukemias. I felt helpless and overwhelmed. By complete chance, my very next rotation was endocrinology, which included a mixture of outpatient clinics and inpatient diabetes consults. I was enthralled. Here was a specialty that had a true systemic focus, involved complex pathways and feedback algorithms — it was a specialty that required thinking, not rote memorization. And beyond the scientific interest, I felt I was able to help patients. Dr. Robert Silver was one of my attendings who had a fantastic teaching style and truly inspired me to re-focus to endocrinology.

I continued to take as many rotations in endocrinology as I could during my residency years, and this reinforced my decision to

As the Endocrine Society embarks on its second century, *Endocrine News* will continue to tell the stories of how endocrinologists chose this remarkable field. If you would like to share your story with our readers around the world, contact Editor Mark A. Newman at **mnewman@endocrine.org**.

enter endocrinology. During this time, the new analog insulins became available, and I was able to see the impact it had on my friend with diabetes. Jenn was then in an obstetrics/gynecology residency. Due to the nature of her residency program she had learned to inject her regular insulin after eating — if she injected it as advised 30 minutes before a meal but then an emergency arose and her meal was delayed, she would have significant hypoglycemia. However, this delayed injection led to food/insulin mismatch and poor diabetes control. With the availability of analog rapid insulin, her glycemic control improved and she had less hypoglycemia. Watching her experience the benefit of the newer therapeutics further reinforced my passion for endocrinology.

By this point I was married, and as my husband was U.S.-born, this offered new opportunities to me for fellowships. I moved to the University of Washington, Seattle, for my fellowship, and initiated a research program under the mentorship of Drs. Tom Wight and Alan Chait. I initiated a career investigating mechanisms accounting for the increased prevalence of cardiovascular disease in diabetes, studying the response to retention hypothesis of atherosclerosis. My work bridges endocrinology, diabetes, and lipids/cardiovascular disease. My main professional affiliations became the Endocrine Society and the American Heart Association. I am now chief of the division, still committed to research, and giving back to my professional societies by serving as writer and now chair for ESAP, and serving on study sections/grant review panels for the AHA. My original intent was to spend three years in the U.S. then return home to Canada, but, here it is 20 years later, and I'm now an American. After nearly seven years in Seattle I was recruited to the University of Kentucky. So, while medicine and endocrinology were not my original plan, here I am and I couldn't be happier. EN

Volanesorsen Shown to Reduce Triglyceride Levels in Patients with Severe Hypertriglyceridemia

BY IOANNA GOUNI-BERTHOLD, MD,
UNIVERSITY OF COLOGNE, GERMANY

Last month, our team presented data showing apolipoprotein C-III (apoC-III) inhibition with a RNA-targeted antisense therapy called volanesorsen effectively lowered triglycerides in patients with hypertriglyceridemia by 70%. This data was presented at the National Lipid Association annual meeting in Philadelphia in May.

Volanesorsen is designed to reduce the production of apoC-III, a protein produced in the liver that plays a central role in the regulation of plasma triglyceride (TG) levels. Elevated TG levels are associated with increased risk of pancreatitis and cardiovascular events. Presented data also showed a statistically significant reduction (p=0.01) in pancreatitis events during treatment with volanesorsen.

ApoC-III is a key regulator of plasma TG levels. It has been shown that loss of function mutations in apoC-III are associated with lower TG levels and a reduction in cardiovascular risk. Conversely, elevated TG levels are associated with increased risk of both cardiovascular events and pancreatitis. In recent years, there has been an effort to develop strategies to reduce levels of apoC-III to reduce elevated triglyceride levels. In 2016, our team led a pivotal study in patients with severe hypertriglyceridemia, defined as triglycerides ≥ 500 mg/dL, with volanesorsen, a second-generation antisense oligonucleotide that inhibits apoC-III synthesis.

The COMPASS Study

The COMPASS clinical trial was a randomized, multi-center, double-blind, placebo-controlled, 26-week, phase 3 study to evaluate the effect of apoC-III reduction with volanesorsen on fasting TG levels in patients with hypertriglyceridemia. The COMPASS study was a supportive study used to further validate findings from a randomized, double-blind, placebo-controlled, Phase 3 study of volanesorsen in the treatment of patients with the familial chylomicronemia syndrome (FCS), known as the APPROACH Study. In the COMPASS trial, we studied patients with fasting TG ≥ 500 mg/dL, (n=113, mean ±SD, TG level 1261 ±955mg/dL). The patients were randomized 2:1 to receive 300 mg volanesorsen subcutaneously (SC) once a week or placebo, respectively, for 26 weeks.

We found that that patients treated with volanesorsen experienced significant reductions in triglyceride levels:

- For the primary endpoint of the study, volanesorsen-treated patients (n=75) achieved a statistically significant ($p<0.0001$) mean reduction in triglycerides of 71.2% from baseline after 13 weeks of treatment, compared with a mean reduction of 0.9% in placebo-treated patients (n=38).

- In a subset of seven patients with FCS and average incoming triglyceride level of 2,280 mg/dL, volanesorsen-treated patients (n=5) achieved a mean reduction in triglycerides of 73% from baseline after 13 weeks of treatment, compared with a mean increase of 70% in placebo-treated patients (n=2).

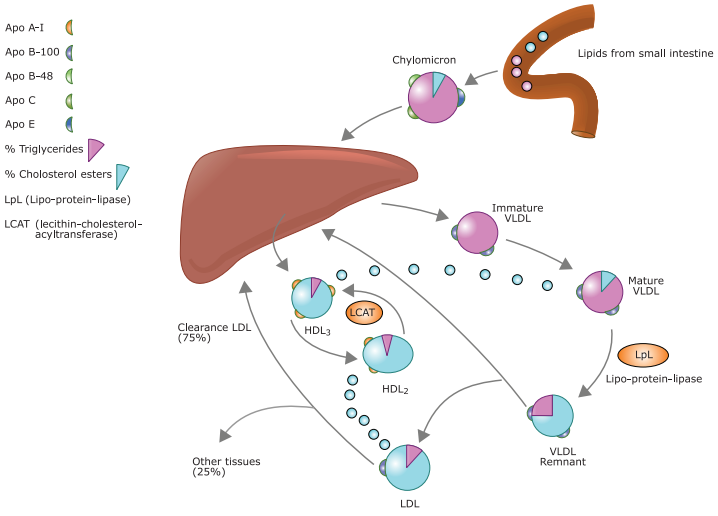
- In addition, 82% of patients treated with volanesorsen, including three of the FCS patients, achieved triglyceride levels less than 500 mg/dl after 13 weeks of treatment, compared to 14% of placebo-treated patients ($p<0.0001$).

Treatment with volanesorsen was also found to correlate with significantly reduced pancreatitis events ($P = .036$). No events occurred in the volanesorsen group during the study period vs. five events in the placebo group. Three months after the last dose, one patient assigned volanesorsen experienced a pancreatitis event.

The most common adverse event was injection site reactions, occurring in 23.5% of volanesorsen injections. There were no serious platelet events in the study. There was one potentially related serious adverse event reported as serum sickness that occurred two weeks after the last study dose.

Targeting Improvements in Standard of Care

Unfortunately, we do not currently have many treatment options for patients with hypertriglyceridemia. According to guidelines established by the Endocrine Society, initial treatment of mild to moderate hypertriglyceridemia should include dietary counseling and weight loss in patients who are overweight or obese. For patients with severe to very severe hypertriglyceridemia, reduced intake of dietary fat and simple carbohydrates is recommended, in combination with drug



treatment such as fibrates, niacin, omega-3 fatty acids or statins, alone or in combination. However, these treatment options are often unable to normalize triglyceride levels in patients or to even bring them below the threshold level for pancreatitis, which ranges according to guidelines between 500-880 mg/dL.

While encouraging findings from the COMPASS study show that robust lipid lowering was achieved in patients with severe hypertriglyceridemia who were treated with volanesorsen, the findings related to patients with FCS specifically may be of special interest.

FCS is a rare genetic disease characterized by the build-up of chylomicrons the largest lipoprotein particle that transports dietary fat and cholesterol. While normally the enzyme lipoprotein lipase (LPL) breaks down chylomicrons, patients with FCS do not have functioning LPL resulting in circulating triglyceride levels in the thousands (mg/dL) or more than 10 times the upper limit of normal. FCS patients have a significant risk of morbidity and mortality, including recurrent episodes of acute pancreatitis, which can be fatal.

Current TG-lowering drugs work mainly through the LPL pathway, thus being largely ineffective in patients with FCS. The results of the COMPASS study provide strong additional support for therapeutic strategies decreasing triglycerides levels by reducing apoC-III concentrations in patients with severe hypertriglyceridemia including the very difficult to treat FCS patients.

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Short, High-Intensity Exercise Sessions Improve Insulin Production in Type 2 Diabetes

BY DEREK BAGLEY

Short, functional-movement and resistance training workouts, called functional high-intensity training (F-HIT) may improve beta-cell function in adults with type 2 diabetes, according to a study recently published in the *American Journal of Physiology—Endocrinology and Metabolism*.

Researchers led by John P. Kirwan, PhD, of Cleveland Clinic, point out that previous research has shown that aerobic exercise leads to improvements in beta-cell function and insulin secretion. The findings of these studies, the authors write, appear to show "a response dichotomy to exercise in the [type 2 diabetes] population, specifically dependent on residual beta-cell secretory capacity."

But these studies only looked at aerobic exercise training, and given the rise in popularity of F-HIT (programs like CrossFit), Kirwan and his team wanted to look at how those exercise regimens affect insulin production. "Adults with [type 2 diabetes] may find it difficult to adhere to a strict exercise regimen, citing 'lack of time' as one of the primary barriers. F-HIT programs like CrossFit may address this barrier by providing structure, supervision, and accountability, with a minimal time commitment," the researchers write.

The team examined how a six-week CrossFit F-HIT intervention would affect beta-cell function in 12 sedentary adults with type 2 diabetes. The participants trained three days a week, performing functional movements at high intensity in a variety of 10- to 20-minute sessions under the supervision of a certified CrossFit coach. Activities varied weekly and included one high-intensity session in which the participants exercised until they hit greater than 85% of their maximum target heart rate. The participants then completed an oral glucose test and anthropometric measures at baseline and following the intervention.

The researchers took body fat and mass measurements before and after the F-HIT program as well. The CrossFit trainer recorded the number of repetitions of sit-ups, squats, and rowing each volunteer completed on the second and last days of the exercise program to track exercise capacity and overall fitness.

"The mean Disposition Index (DI), a validated measure of beta-cell function, was significantly increased (PRE: 8.4±3.1, POST: 11.5±3.5, P=0.02) after the intervention. Insulin processing inefficiency in the beta-cell, expressed as the fasting proinsulin-to-insulin ratio, was also reduced (PRE: 2.40±0.37, POST: 1.78±0.30, P=0.04). Increased beta-cell function during the early-phase response to glucose correlated significantly with reductions in abdominal body fat (R2=0.56, P=0.005) and fasting plasma alkaline phosphatase (R2=0.55, P=0.006). Mean total body fat percentage decreased significantly (Δ: -1.17 0.30%, P=0.003), while lean body mass was preserved (Δ: +0.05±0.68kg, P=0.94)," the authors write.

Findings: The short-term F-HIT regimen showed significant increases in beta-cell and liver function and exercise capacity. The volunteers also lost weight and body fat percentage through F-HIT exercise. These factors can improve insulin sensitivity and blood glucose levels. "Here we show that exercise at high intensity for as little as 10 to 20 minutes per day, three days a week for six weeks improves beta-cell function in adults with [type 2 diabetes]," the researchers write. EN

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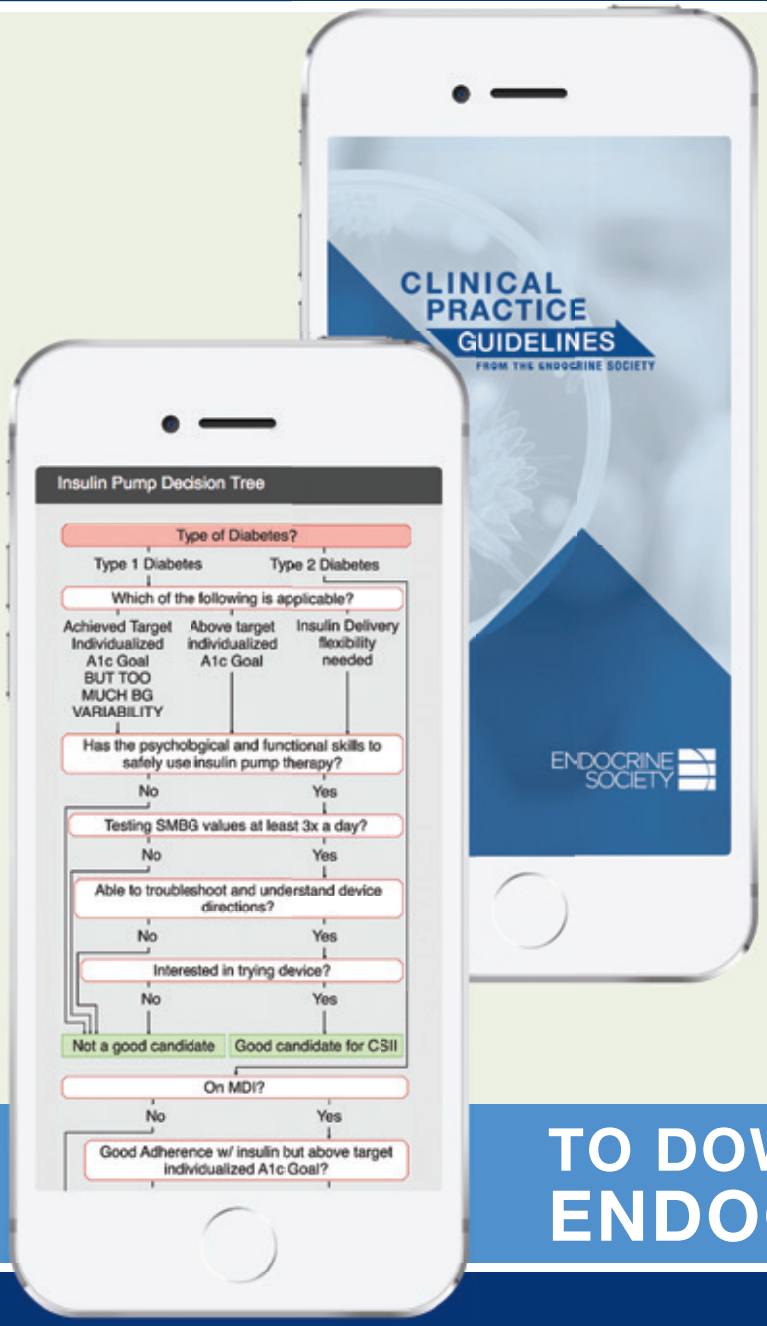

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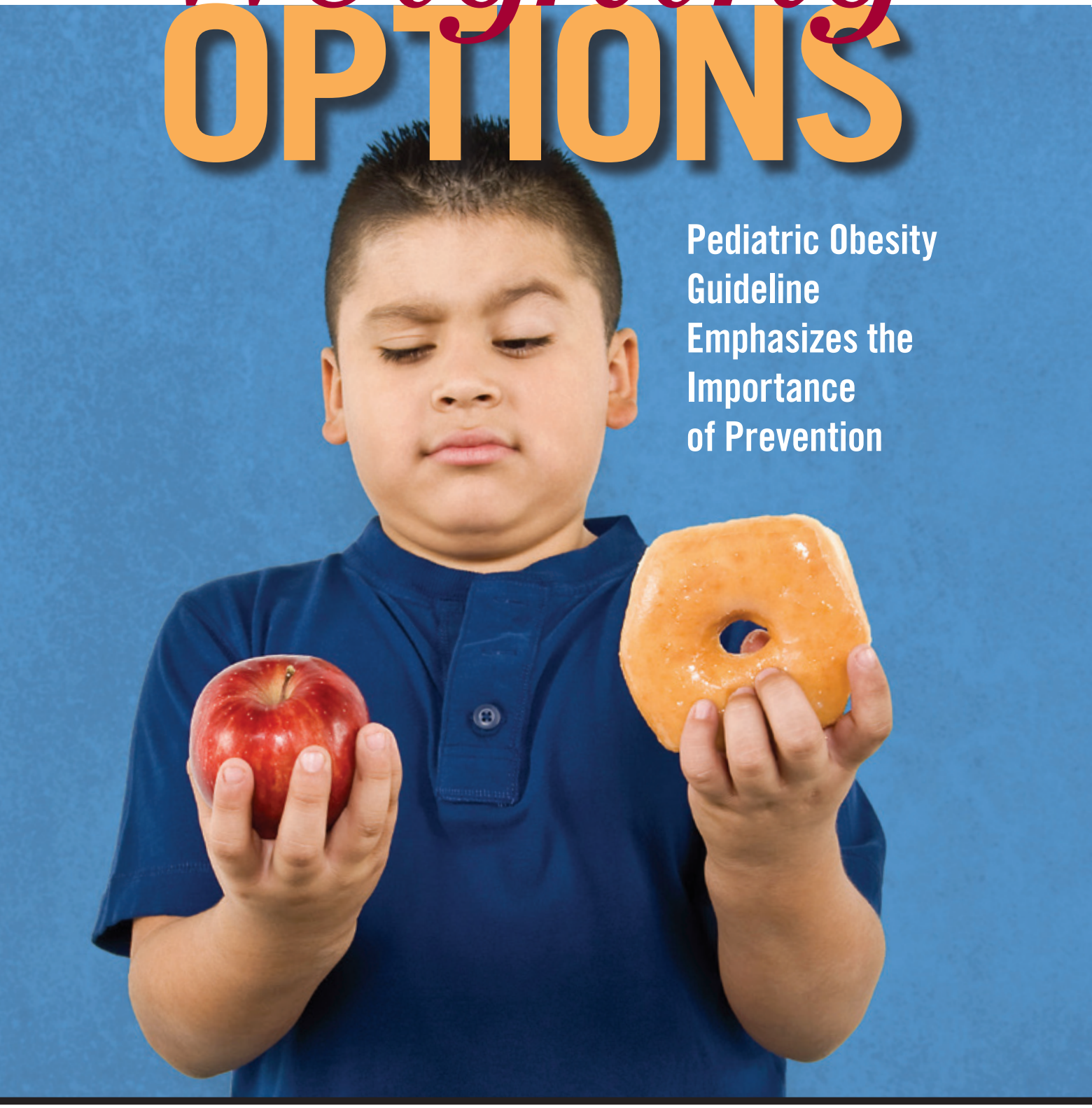
ENDOCRINE SOCIETY

BY ERIC SEABORG

Weighing OPTIONS

Pediatric Obesity Guideline Emphasizes the Importance of Prevention



With the number of children with obesity at epidemic levels, clinicians need to redouble prevention efforts — and even get involved in advocating policies to fight obesogenic environments.

Prevention is the best hope for combating pediatric obesity because current treatments are limited in efficacy, according to a new Endocrine Society guideline.

"Intensive, family-centered lifestyle modifications to encourage healthy diets and activity remain the central approach to preventing and treating obesity in children and teenagers," says Dennis M. Styne, MD, chair of Pediatric Endocrinology at the University of California Davis Health System in Sacramento. Styne chaired the task force that wrote "Pediatric Obesity — Assessment, Treatment, and Prevention: An Endocrine Society Clinical Practice Guideline."

Childhood obesity is at an epidemic level, affecting 17% of U.S. children between the ages of two and 19 years, so Society leaders wanted to ensure that clinicians had access to the most current information on effective treatments. "Since the Society last issued a pediatric obesity guideline in 2008, there have been more than 1,700 publications on childhood obesity which require attention, so we revised the guideline using the best information available," Styne says. "There is new information on genetic causes of obesity, psychological complications associated with obesity, surgical techniques, and medications available for the most severely affected older teenagers. The guideline offers information on incorporating these developments into patient care."

The guideline suggests that in addition to BMI, physicians should also use clinical judgment, because some children will be obese even though their BMI value is below the 95th percentile. "You have to examine the child. You can't just use a number," Styne says.

New and Noteworthy

Some of the noteworthy new recommendations concern fatty liver disease, fasting insulin tests, and genetic testing.

Physicians should test for comorbidities associated with obesity — with fatty liver disease being among the most common — but clinicians need to be aware of the difference between adult and younger patients. Styne says that physicians need to pay attention to the alanine aminotransferase (ALT) value but be aware that "the standards for children are lower than the standards for adults. The guideline recommends 25 U/L as the cut-off value for boys and 22 U/L for girls, and that is substantially below what you are going to find on your electronic medical record," Styne says.

The guideline recommends against the common practice of using fasting insulin levels for the diagnosis of comorbidities, particularly insulin resistance, because the test lacks diagnostic value. That finding might surprise some clinicians, according to David B. Allen, MD, professor of pediatrics at the University of Wisconsin School of Medicine and Public Health, Madison. Allen was not on the guideline committee but reviewed it for the Endocrine Society. That measurement "has almost worked its way into standard practice as a way of screening kids for evolving insulin resistance. When the

> “This epidemic is not going to be solved in a clinician’s office. This problem spans the cities and countries in which children live. It spans public policy, advertising, and all of the things in our daily life that affect the child. **Only a political and society-wide change will lead to the diminution of this epidemic.**”
>
> — DENNIS M. STYNE, MD, CHAIR, PEDIATRIC ENDOCRINOLOGY, UNIVERSITY OF CALIFORNIA DAVIS HEALTH SYSTEM, SACRAMENTO

GUIDELINE RECOMMENDATIONS

- Youthful patients with a BMI greater than or equal to the 85th percentile should be evaluated for related conditions such as dyslipidemia, fatty liver disease, and diabetes.
- However, laboratory evaluations to look for endocrine etiologies of pediatric obesity should only be performed in patients whose height or growth rate is less than expected based on age and pubertal stage. “It is not usually an endocrine problem that causes obesity,” Styne says.
- “We caution against the use of medication unless the child is over 16 years of age,” Styne says. The only medication approved for use in children under 16 is not very effective.
- Evidence is accumulating that bariatric surgery can be effective in the most seriously affected teenagers who have failed at lifestyle modification, so the document delineates its appropriate use. The guideline recommends that surgery should be performed only by experienced teams with resources for long-term follow-up, and only in patients who are physiologically mature and late in their pubertal development. Ten years ago, surgery in adolescents seemed “incredibly radical” Allen says, but with the growing number of youth having obesity, “in this day and age it has to be considered, and may have some value.”
- Physicians should promote healthy eating habits such as avoiding calorie-dense, nutrient-poor foods (such as sugar-sweetened beverages) and consuming whole fruits rather than juices. Children should engage in at least 20 minutes — and optimally 60 minutes — of vigorous physical activity at least five days a week.

committee looked at the evidence, they felt confident that there was so much variability in this measurement and so little correlation with actual diabetes risk, they recommended that it not be used for routine diagnosis,” Allen says.

Another new suggestion concerns genetic evaluation. The guideline suggests “genetic testing in patients with extreme early onset obesity (before five years of age) and that have clinical features of genetic obesity syndromes (in particular extreme hyperphagia) and/or a family history of extreme obesity.”

The Politics of Prevention

“Prevention is the key to this epidemic, because we have limited tools that have long-term effectiveness to treat children who become obese,” Styne says, so the guideline emphasizes the importance of changing the child’s environment. “This epidemic is not going to be solved in a clinician’s office. This problem spans the cities and countries in which children live. It spans public policy, advertising, and all of the things in our daily life that affect the child. Only a political and society-wide change will lead to the diminution of this epidemic.”

Allen says that this guideline differs from the previous guideline in “the degree to which the recommendations step into the arena of public health. There are recommendations for policy-driven changes that are necessary to create a healthier environment for children, such as the limitation of access to sweetened beverages and the building of community environments that allow children to safely move around,” he says. “Unless we reduce the toxicity of the environment

"Unless we reduce the toxicity of the environment for people that are susceptible to obesity, our ability to alter this trajectory is going to be very limited." - David B. Allen, MD, professor of pediatrics, University of Wisconsin School of Medicine and Public Health, Madison

for people that are susceptible to obesity, our ability to alter this trajectory is going to be very limited. The sobering underlying message of these guidelines is that part of the work of our profession as endocrinologists must be to step into the policy arena."

Research Hopes for the Future

"It is hard to comprehend how much work went into this guideline," Allen says. "This was at least three years of work by this task force to do a very systematic, evidence-based analysis of the treatment studies that have been done."

Despite this accumulation of studies since the previous guideline, the task force notes that there is still a dearth of information on an effective response to the growth in the prevalence of obesity: "Continued investigation into the most effective methods of preventing and treating obesity and into methods for changing environmental and economic factors that will lead to worldwide cultural changes in diet and activity should be priorities."

Cosponsored by the European Society of Endocrinology and the Pediatric Endocrine Society, the guideline was published in the March 2017 *Journal of Clinical Endocrinology & Metabolism* and is available online at: **www.endocrine.org/KidsObesity** EN

SEABORG IS A FREELANCE WRITER BASED IN CHARLOTTESVILLE, VA. HE WROTE ABOUT THE ENDOCRINE SOCIETY'S NEW CLINICAL PRACTICE GUIDELINE ON TREATING FUNCTIONAL HYPOTHALAMIC AMENORRHEA IN THE JUNE ISSUE.

AT A GLANCE

- **Prevention through the well-known lifestyle modifications of a healthy diet and physical exercise remain the best hopes for stemming the epidemic of obesity in childhood because the effectiveness of treatment is limited.**
- **Pediatric comorbidities of obesity are common and should be screened for in a methodical fashion — but endocrine causes of obesity are rare and should only be tested for in cases of attenuated growth.**
- **The response to pediatric obesity cannot be limited to the clinician's office, but requires the promotion of societal changes and policies that encourage better diets and more active lifestyles for the entire family.**

CAMP POSSIBILITIES
Enriching the lives of children with diabetes

Camp Possibilities is a camp for children with diabetes between the ages of eight and 16, and takes place for a week every summer at Camp Ramblewood in Darlington, Md. This summer, it will be taking place from July 23 to 28.

For more information or to volunteer, go to **www.camppossibilities.org**.

FIRST PERSON

Happy CAMPERS

Camp Possibilities, a camp for children with diabetes, was a chance for **Andrew Paul Demidowich, MD**, and **Mihail "Misha" Zilbermint, MD**, to learn more about the intricacies of treatment. However, the lessons they took away from their experiences were more than simply treating a disease, it was understanding a lifestyle.

We tried to open the wooden bunk camp door stealthily, but despite our best efforts, its metal hinges made a loud squeal in the cold night. Thankfully, nothing moved, except for the wind and the shadows of our four figures.

We entered, split into teams of two, and went to the first beds on the left as we had planned earlier in the evening. As we changed our headlamps to the red light, so as not to wake any of the children, I tried to make out the name over the bed and make sure it matched the name on the map.

Feeling like a character out of *Mission Impossible*, I quietly reached for any exposed finger that I could find, wiped it with an alcohol swab, held my breath, cringed a little, and…"click!" A small drop of blood began to materialize, so I wiped it with a cotton swab, squeezed the finger again, and in the red glow brought the edge of the strip to the droplet. 128 appeared. Whew! I wrote down the value in the log and moved on to the next bed.

Endless Possibilities

ANDREW: This was among our first experiences performing a fingerstick on a child with type 1 diabetes. Misha and I had completed our training after medical school as internal medicine physicians and were beginning our second year of endocrine fellowship. Our firsthand experience with diabetes was largely treating older adults with insulin resistance and weight problems; we hadn't treated any children for over seven years, since our pediatrics rotations in medical school.

However, as budding endocrinologists, we began seeing young adults with type 1 diabetes more and more frequently in the clinic and inpatient settings. Type 1 diabetes is challenging because of its brittle nature and constant specter of diabetic ketoacidosis or hypoglycemia. And discussing such a nuanced disease with a patient during a 20-minute clinic appointment is simply not sufficient time for a physician to truly grasp the daily intricacies and challenges that these individuals

> “…as budding endocrinologists, we began seeing young adults with type 1 diabetes more and more frequently in the clinic and inpatient settings. **Type 1 diabetes is challenging because of its brittle nature and constant specter of diabetic ketoacidosis or hypoglycemia.”**
>
> — ANDREW PAUL DEMIDOWICH, MD, ENDOCRINOLOGIST, BETHESDA, MD.

face. So, when we first heard about Camp Possibilities, a summer camp for children with diabetes, we naturally jumped at the opportunity to join the medical staff.

Located on an idyllic, sprawling private campground in Darlington, Md., Camp Possibilities is a one-week sleep away camp where kids with type 1 diabetes can get the wonderful experience of camp and the great outdoors. Every year about 100 children come and swim, fish, play sports, go on hikes, put on talent shows, and make arts and crafts.

Additionally, they learn about managing type 1 diabetes, both from the medical staff and from their peers and counselors, many of whom have diabetes as well. However, it is not a diabetes “boot camp,” but a summer camp where “kids with diabetes can just be kids.” Moreover, there is a large medical staff ever-present, with MDs, NPs, and RNs who are either trained in endocrinology and diabetes, or have type 1 diabetes themselves.

The Highs & Lows of Blood Sugar

The spectrum of symptoms associated with high and low blood sugars is vast.

"Leaving Camp Possibilities"

(Sung to the tune of "Leaving on a Jet Plane")

Well my meter is packed and I am ready to go
I'm standing outside by cabin door.
I hate to leave this place and say good-bye.
But the dawn is breakin', it's Friday morning
My parents waiting, I am still yawning
Don't wanna leave, I had an awesome time.

Chorus:
So help me change my pump site,
Make sure it's positioned right
Dose me so I'll never go low.
'Cause I'm leaving Camp Possibilities
I know that I'll be back again.
Oh, Jeff, I hate to go.

There are so many times my sugars went down
So many times we ran around
I'm tired peeing on the ketone stick.
Oh, I ate so much, I can barely stand
Two hundred grams? I'll be dosed again,
When I come back, you'll love my A1c.

MISHA: As everyone was getting ready for bed one evening, one of my nine-year-old campers became extremely irritable and even got into an altercation with his fellow cabinmates, which was unusual for him. The counselors asked for help and we were about to call his parents, since camp rules do not tolerate fighting.

However, knowing that hyper- or hypoglycemia can cause mood changes, I decided to check his sugar: 429 mg/dL. I then checked his urine ketones: moderately high! "Odd," I thought. "How can he be progressing towards DKA if his insulin pump is in, working, and not giving any error messages about issues with insulin delivery?" We took him to "Club Med" (the medical staff cabin), examined him, had him drink a bottle of water, and administered subcutaneous insulin. I changed his insulin pump site and discovered the cause of his irritability and hypeglycemia — the insertion cannula was kinked!

The boy stopped crying and fell asleep 15 minutes later as his blood glucose started coming down. It was hard to believe that an hour earlier we were considering sending the child home for fighting, a behavior which was likely a result of severe hyperglycemia.

ANDREW: My first time witnessing a child with hypoglycemia, for me, I think was just as eye-opening. We were just getting sign-out from the night float team regarding the kids and how their blood glucoses did overnight. All of a sudden, a counselor comes running into Club Med saying that one of the fellow campers wasn't acting normally. We swiftly went to Cabin 1, adrenaline pumping.

The camper was inside, sitting in a chair trying to check his sugar, but due to his tremulousness he simply couldn't coordinate his movements enough to accomplish it. I took the glucometer from him and helped checked his glucose: 23 mg/dL. Another med staff handed him a juice box and straw, but he tried to "pierce" a nearby roll of duct tape with the straw instead. It was obvious that he was suffering from severe neuroglycopenia and needed glucagon, so another physician quickly injected it into his shoulder.

> “Almost daily I initiate insulin therapy in my adult patients, who are often reluctant or afraid of injections. **I tell them, ‘If my nine-year-olds at the diabetes camp can inject insulin into themselves, I am sure you can do it too.’”**
>
> — MIHAIL “MISHA” ZILBERMINT, MD, ASSISTANT PROFESSOR OF MEDICINE, DIVISION OF ENDOCRINOLOGY, DIABETES AND METABOLISM, JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE; DIRECTOR, ENDOCRINOLOGY, DIABETES AND METABOLISM, SUBURBAN HOSPITAL, BETHESDA, MD.

AH, WILDERNESS!

Every year, more than 400 diabetes programs around the world offer real-life educational experiences for kids with diabetes, as well as adults who want to volunteer. These camps help people affected by diabetes lead healthier, happier, and more productive lives through good diabetes management ... and a whole lot of fun!

To find a camp near you or for more information on the Diabetes Education & Camping Association, go to **www.diabetescamps.org**.

Amazingly, like a summer squall, this hypoglycemic event disappeared as quickly as it came on, and the camper was smiling and cracking jokes within moments. I breathed a long sigh of relief and smiled as well. Thankfully I haven’t seen another episode like this in my four years of volunteering at Camp Possibilities, but it hit home that such an event is a daily possibility and a daily fear for these children and their parents.

Lullabies at Bedtime

MISHA: How can you make sure that a group of high-energy kids goes to sleep? We started singing songs for them after the bed-time snacks and they loved it. I played guitar, Andrew used the table as bongos. We sang American, Russian, Ukrainian, and Hebrew folk songs. I especially enjoyed teaching a song in Russian, “Aliye Parusa” (Scarlet Sails), which I learned as a child years ago in camp. Since we wouldn’t sing without quiet, the kids stopped running around and quickly laid down in their beds to sing along. Pretty soon, the only music was the sound of kids snoring and us quietly walking out of the cabin.

We also had a lot of fun writing lyrics to songs, with camp-related themes. Our best one (we both think anyway) so far has been “Leaving Camp Possibilities” to the tune of “Leaving on a Jet Plane” by John Denver, which was sung by the campers and counselors many times over the next several years (see box, p. 25).

Sharing Experiences with Patients

MISHA: Almost daily I initiate insulin therapy in my adult patients, who are often reluctant or afraid of injections. I tell them, “If my nine-year-olds at the diabetes

Located on an idyllic, sprawling private campground in Darlington, Md., Camp Possibilities is a one-week sleep away camp where kids with type 1 diabetes can get the wonderful experience of camp and the great outdoors. Every year about 100 children come and swim, fish, play sports, go on hikes, put on talent shows, and make arts and crafts.

camp can inject insulin into themselves, I am sure you can do it too." For an unclear reason, this makes the insulin injections seem much less daunting, and patients are more inclined to initiate insulin therapy.

A Lifestyle, Not a Disease

MISHA: While the camp was a lot of hard work, being awake and on-the-clock from about 8 am until after the evening med staff meeting finished (about 10 pm), with one overnight call shift during the week, we managed to have lots of fun as well. Between planning evening skits for the talent show, hanging out with the children during mealtimes, judging trivia contests, manning a station at the Camp Carnival, or begging Chet the lifeguard to open the pool for Med Staff pool time, we were always busy and always had smiles on our faces. Most importantly, Andrew and I became best friends.

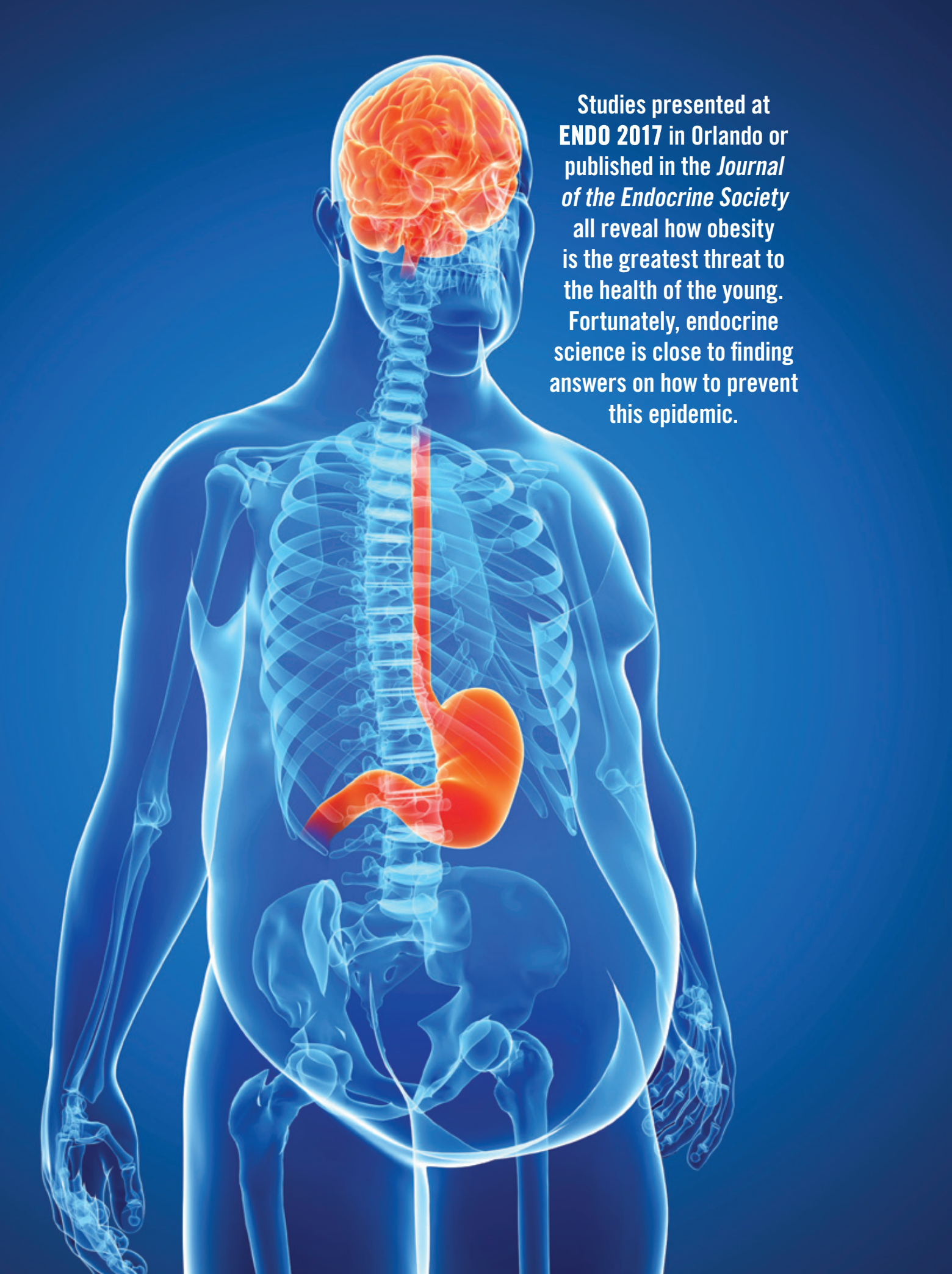
Needless to say, Camp Possibilities was one of the most valuable learning experiences during our endocrinology fellowship. We had experiences both touching and terrifying, but ultimately it made us better and more compassionate doctors, who understand that diabetes is also a lifestyle, not just a disease. EN

THE OPINIONS EXPRESSED ARE THOSE OF THE AUTHORS AND NOT OF THE NATIONAL INSTITUTES OF HEALTH OR THE UNITED STATES FEDERAL GOVERNMENT.

ABOUT THE AUTHORS

ANDREW PAUL DEMIDOWICH, MD, (left) has been at the National Institutes of Health (NIH) as a staff clinician in the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development since 2015. His current research interests include primary aldosteronism as well as investigating the link between obesity, metabolic dysregulation, and inflammation. He completed his internal medicine residency at The Mount Sinai Hospital in New York City in 2011 and his endocrinology fellowship at the NIH in 2015. Andrew is a long-time Ukrainian Boy Scout and loves exploring the outdoors or playing ice hockey in his spare time.

MIHAIL "MISHA" ZILBERMINT, MD, (right) is an assistant professor of medicine, Division of Endocrinology, Diabetes and Metabolism, Johns Hopkins University School of Medicine, and director of Endocrinology, Diabetes and Metabolism at Suburban Hospital, Johns Hopkins Medicine, Bethesda, Md., where he established an Inpatient Diabetes Management Service. His goal is to promote better glycemic control and reduce hypoglycemia in hospitalized patients. Zilbermint is a 2015 graduate of Endocrinology Fellowship at the NIH. He plays guitar and enjoys singing songs to his six-month-old daughter.

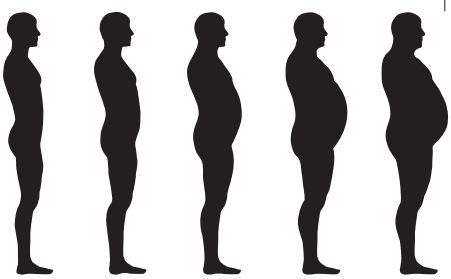


Studies presented at **ENDO 2017** in Orlando or published in the *Journal of the Endocrine Society* all reveal how obesity is the greatest threat to the health of the young. Fortunately, endocrine science is close to finding answers on how to prevent this epidemic.

BY KELLY HORVATH

An Ounce of Prevention

According to the 2013–2014 National Health and Nutrition Survey, pediatric obesity affects 17.2% of children ages two to 19 years and overweight another 16%, defined as body mass index (BMI) ≥95th percentile and 85–95th percentile, respectively.



In the adolescent population, the rate of obesity and overweight has tripled since the 1970s, making this health problem and its pathogenesis one of paramount importance. Not only does it affect the health of the child, it confers enormous risk for developing grave comorbidities on through adulthood.

In April, three presentations at **ENDO 2017** in Orlando focused on the problem of overweight and obesity in children and adolescents, underscoring the need for further clinical research and understanding it demands. A fourth related study from the U.K. is also included here. The complexities cannot be underestimated, as these studies demonstrate, exploring cardiovascular, metabolic, and neurologic pathways and their clinical implications. Marisa Censani, MD, director of the Pediatric Obesity Program at Weill Cornell Medicine and New York Presbyterian Hospital and one of the **ENDO 2017** presenters, put it this way: "As pediatric endocrinologists, our *goal* is to address obesity and its comorbidities and to serve as advocates for the future health of our patients."

Obesity and Vitamin D Deficiency

Censani's study, "Vitamin D Status Is Associated with Early Markers of Cardiovascular Disease in Children and Adolescents with Overweight and Obesity," is one of the first to assess the relationship of vitamin D deficiency with both lipoprotein ratios and non–high-density lipoprotein cholesterol (non-HDL-C), which are lipid markers known to impact cardiovascular risk, in children and adolescents with obesity/overweight. Knowing that impaired vitamin D status disrupts the cardiometabolic pathways in adults and that elevated serum non-HDL-C levels in childhood increase risk for cardiovascular

> “Without a better understanding of the relative importance of neurobiological and cognitive factors in the development and persistence of childhood obesity, **we may be unable to effectively reverse the obesity epidemic and reduce the health and related burdens of this problem.**”
>
> — CHRISTIAN ROTH, MD, OF SEATTLE CHILDREN’S RESEARCH INSTITUTE AND UNIVERSITY OF WASHINGTON

disease in adulthood, her team investigated whether a connection exists between vitamin D status and specific lipid markers in a two-year cross-sectional study of 60 children and adolescents, ages six to 17 years, who met criteria for obesity/overweight (BMI >85th percentile). They analyzed total cholesterol (TC), triglycerides (TG), HDL, low-density lipoprotein (LDL), and non-HDL-C levels against vitamin D status and found that participants with vitamin D deficiency (defined as 25-hydroxyvitamin D <20 ng/ml) had significantly higher non-HDL-C, TC, and TG levels as well as TG/HDL and TC/HDL ratios.

“Our findings strongly suggest that vitamin D deficiency may have a negative effect on lipid parameters with increase in cardiovascular risk among individuals with low vitamin D levels,” Censani says. Although the exact mechanism is unclear, proposed hypotheses include that vitamin D, being fat soluble, becomes less available in the setting of increased adipose tissue and that children with obesity may be more sedentary and therefore less inclined to be outside, where they would otherwise derive vitamin D from sunlight.

The take-away message for clinicians is clear: “These results support screening all children and adolescents with obesity and overweight for vitamin D deficiency and the potential benefits of improving vitamin D status to reduce cardiometabolic risk,” Censani says. “Although further research into both short-term and long-term effects of vitamin D repletion, is needed, early intervention might improve cardiometabolic markers and help to ensure a healthy future.”

Obesity and Type 2 Diabetes

In "Pathogenesis of Type 2 Diabetes in Obese Adolescents: Metabolites of Serotonin and Mitochondrial Function in 24-Hour Urine Samples," also presented at **ENDO 2017**, Pinar Gumus Balikcioglu, MD, of Duke University Medical Center and Lenox Baker Children's Hospital in Durham, N.C., and team sought to zero in on what metabolic factors predispose an obese child to insulin resistance and glucose intolerance, given that only half of obese youth are insulin resistant and only a fraction of those develop type 2 diabetes. In previous studies, they used fasting plasma samples to characterize metabolic markers of insulin resistance in obese adolescents. By contrast, this study used non-targeted metabolic profiling of 24-hour urine samples, which integrates differences in metabolic status throughout the day and night, to characterize metabolic differences in obese youth with and without type 2 diabetes.

"Little is known about the metabolic factors predisposing to insulin resistance and type 2 diabetes in obese children," Balikcioglu says. "To identify those at highest risk, it is essential to characterize metabolic markers that predict the development of insulin resistance and glucose intolerance." Analyzing 24-hour urine samples using gas chromatography/mass spectrometry from 33 obese African American children ages eight to 18 years, 13 with type 2 diabetes, researchers identified three metabolites significantly higher in those with type 2 diabetes that signify mitochondrial dysfunction, and therefore reduced energy production, and one that was much lower — 5-hydroxy-indoleacetic acid (5-HIAA), the major metabolite of serotonin. "This finding is particularly interesting given that serotonin increases pancreatic β-cell replication, β-cell mass, and glucose-dependent insulin secretion," Balikcioglu says.

Their findings implicate impaired serotonin metabolism and mitochondrial dysfunction in type 2 diabetes pathogenesis through inhibition of insulin secretion. Future studies may find other novel factors that would help predict the development of insulin resistance and progression to type 2 diabetes in people at risk. "Validation of urine metabolomic profiling could provide a new non-invasive approach to identification of biomarkers for metabolic risk," Balikcioglu says, "while analysis of serotonin metabolism may provide new therapeutic approaches for type 2 diabetes prevention and treatment."

In "Body Mass Index and Incident Type 1 and Type 2 Diabetes in Children and Young Adults: A Retrospective Cohort Study," published in the *Journal of the Endocrine Society*, Ali A. Abbasi, MD, PhD, who was with King's College in London, U.K., at the time the research was published, and team also explored the association of obesity with diabetes in children. Using data from 375 general practices in the U.K. from 1994 to 2013, researchers looked for diagnoses of type 1 diabetes and type 2 diabetes among 369,362 obese or overweight participants aged two to 15 years. "We found that there has been a rapid increase in type 2 diabetes in children and young adults. Children who are obese have a fourfold increase in risk of type 2 diabetes," Abbasi says. No association was found between obesity and type 1 diabetes.

Their next research steps will explore potential targets for the prevention of childhood obesity and early-onset type 2 diabetes. "In our follow-up study, we have planned to

AT A GLANCE

- **Atherogenic lipids and markers of early cardiovascular disease including non-HDL-C, TC, TG, TC/HDL, TG/HDL, and LDL were all higher in vitamin D–deficient obese children.**
- **Decreased urine 5-HIAA, the major metabolite of serotonin, was identified as a novel biomarker associated with type 2 diabetes in obese children.**
- **Increasing pediatric obesity rates have contributed to the increasing incidence of type 2 diabetes but not type 1 diabetes among U.K. children, conferring a fourfold greater risk of developing type 2 diabetes.**
- **fMRI characterization of brain function related to satiety in obese children was analyzed to better understand why conventional obesity intervention is not effective for some.**

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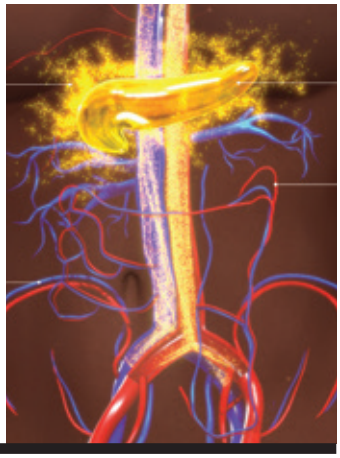
> — PINAR GUMUS BALIKCIOGLU, MD, DUKE UNIVERSITY MEDICAL CENTER AND LENOX BAKER CHILDREN'S HOSPITAL, DURHAM, N.C.



expand the population, risk factors, and the outcomes, analyzing the burden (prevalence) and incidence of both type 1 and type 2 diabetes and their associations with sociodemographic characteristics (like ethnicity, smoking, and alcohol use)," Abbasi says. "Preventing obesity and diabetes should be a top priority for everyone concerned with the health of future generations."

Tailoring Interventions

Christian Roth, MD, of Seattle Children's Research Institute and University of Washington presented "Post-Prandial Brain Response to High-Calorie Visual Food Cues Is Greater in Obese Vs. Lean Children" at **ENDO 2017**, a study that investigated why lifestyle interventions do not produce favorable outcomes in some children with obesity. "Without a better understanding of the relative importance of neurobiological and cognitive factors in the development and persistence of childhood obesity, we may be unable to effectively reverse the obesity epidemic and reduce the health and related burdens of this problem," Roth says. Using functional magnetic resonance imaging (fMRI), Roth's team measured brain activation in 34 children with obesity and 21 children with normal weight, all aged nine to 11 years to find out whether differences in the central satiety response exist between obese and non-obese children. A secondary outcome was determining whether the strength of the central satiety response is associated with impulsivity and/or the success of obesity treatment among obese children.

Participants viewed images of high- and low-calorie foods as well as non-food objects while undergoing fMRI, then ate a test meal consisting of 33% of estimated daily caloric needs, which was followed by a second fMRI scan. They next ate a buffet-style meal composed of what they chose. Researchers found similar levels of brain activation after the first fMRI and self-reported satiety after the buffet meal in both the obese and non-obese groups. It was after the test meal that differences emerge, as higher overall brain response to high-calorie foods was seen in the obese children, suggesting that, "in obese children, a blunted central nervous system satiety response impairs the success of obesity interventions," Roth says.

A follow-up study will report the results of a six-month intervention with the group of obese children, consisting of family-based behavioral treatment (FBT), the success of which depends in part on parental control and participation and in part on the child's own obesity-related cognitive traits, such as low responsiveness to internal satiety signals, impulsivity, high responsiveness to external food cues, and level of satisfaction when eating high-calorie foods.

"We expect that our study findings will inform ways FBT might be modified to improve outcomes for all children or how FBT might be modified for particular children (e.g., targeting self-control)," Roth says. The follow-up study will use a U.S. Preventive Services Task Force–recommended weight-loss protocol focusing on food and exercise education and behavioral skills accompanied by the Spotlight Diet eating plan (foods are categorized into green, yellow, and red groups, with green signifying "go"; yellow, "proceed with caution"; and red, "stop" — eat sparingly).

"The current study, having provided a basic understanding of brain satiety function and how children's perceptions of high-calorie environmental food cues are altered by eating, will help tailor this intervention and potentially improve treatment response in the future," Roth says. "We expect that the gained insights will be integrated in a clinical context that will impact the prevention and treatment of childhood obesity." EN

HORVATH IS A FREELANCE WRITER BASED IN BALTIMORE, MD. SHE WROTE ABOUT A SIDE BENEFIT OF MENOPAUSAL HORMONE THERAPY ON WOMEN'S BONE STRENGTH IN THE MAY ISSUE.

Q&A: Janet A. Schlechte, MD, Chair, Clinical Endocrinology Steering Committee

Every year, the Endocrine Society holds the Clinical Endocrinology Update (CEU), which brings together hundreds of endocrine clinicians for a unique learning experience and opportunities to network with expert faculty and colleagues.

The 69th Annual CEU will be held in Chicago from Saturday, September 23 to Monday, September 25, and is vital for any practicing clinician seeking the most trusted and clinically relevant information about recent advances in the field of endocrinology. *Endocrine News* caught up with Janet A. Schlechte, MD, chair of the CEU Steering Committee, to find out why this program is so vital to all clinicians regardless of how many years they have been in practice.

Endocrine News: Who is 69th Annual CEU geared towards?

Janet A. Schlechte: CEU is designed for clinicians, fellows, and other individuals involved in the care of patients with endocrine disorders.

EN: In looking at the program, there seems to be an outstanding variety of topics covered in such a short period of time. Are there any sessions you are especially excited about this year?

JAS: Every year the committee is fortunate to have a multitude of topics and speakers to choose from as we assemble the program and each committee member has a favorite topic. We do our best to broadly cover important and evolving issues related to management of diabetes and endocrine disease.

EN: How difficult was it planning this year's program, considering there are so many topics presented by so many experts from around the world?

JAS: It is a challenge because there are so many topics that are interesting and important and not enough time for all. One of the strengths of CEU is the nationally and internationally recognized faculty.

EN: The Endocrine Board Review is co-located immediately following CEU. After people have spent three days learning about the latest updates in endocrinology, why should they stay for the Endocrine Board Review?

JAS: While the board review course is designed to help those preparing for certification or recertification exams every year, hundreds of CEU attendees attend EBR to continue their learning journey. Endocrinologists appreciate the 240 case-based scenarios that mirror what they see in practice, and learning from the experts about how to manage both simple and complex patient scenarios.

EN: Aside from the educational sessions, what else can attendees expect to encounter while they're at CEU?

JAS: Aside from being in one of the country's most magnificent cities full of great architecture, entertainment, and restaurants, this is an excellent opportunity to network in a more personal environment with other endocrine professionals. This face-to-face time is something that I'm sure all attendees will find so valuable on a personal and professional level.

EN: Some people may think that if they attended ENDO in April that this CEU conference is not worth their time. Can you explain to us why it's vital to attend both meetings?

JAS: While ENDO is also a great venue for clinical endocrinologists, it is a larger meeting that focuses on recent scientific advances, as well as the latest treatment options for patients. CEU is designed to emphasize clinical issues and to optimize interaction between clinicians and faculty. EN

Clinical Endocrinology Update (CEU)

Once again, the CEU will be held in conjunction with the Endocrine Board Review (EBR).

CEU - September 23 - 25, 2017
EBR - September 26 - 27, 2017

For more information and to register, go to www.endocrine.org/chicago.

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We are pleased to congratulate these Endocrine Society members who are celebrating membership milestones in 2017. Our sincere thanks go out to each member for their long-standing support of the Society.

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ENDOCRINE SOCIETY

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We are pleased to welcome the following new members to our global community of professionals committed to hormone research and providing health solutions to patients with endocrine diseases worldwide.

Endocrine Society members with a join date between January 1 – April 30, 2017

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Abdulraouf Abdulraouf
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Taís Andrade Dantas
Lisa Dao
Rajiv Dattatreya, MD

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WELCOMING NEW MEMBERS

We are pleased to welcome the following new members to our global community of professionals committed to hormone research and providing health solutions to patients with endocrine diseases worldwide.

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Deepthi Kunduru
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Marcelo Paez-Pereda

ENDOCRINE SOCIETY

WELCOMING NEW MEMBERS

We are pleased to welcome the following new members to our global community of professionals committed to hormone research and providing health solutions to patients with endocrine diseases worldwide.

Cicília Luiza Rocha dos Santos Paiva
Pilar Paola Palacio Polo
Lidija Palezac
Kamaldeep Panach, MD
Deepak Gargi Pande, MD
Ravind Singh Pandher, MBBS
Sanjay Pandit, MD
Delia Panduru, MD
Sunil Kumar Panigrahi, PhD
James Castillo Paningbatan
Jerzy Paprocki
Diane Belchior Paraiba
Sharmila Sunita Paramasivam, MD, MRCP
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Sarah Parry
Lotta Elisabet Parviainen, PhD
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Jay Patel, MD
Sandip H. Patel, MD
Snehal Patel
Sharyle Patton
Andrea Rosalba Pechin
Giuliana Pellegrino
Hanna Pelttari
Sara Ashlyn Penquite, MD
Maria Lopes Pereira
Caroline Costa de Oliveira, MD
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Maria Camila Perez-Matos
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Emily Peterson, MMS, PA-C
Dylan Petkus, MS
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Voraluck Phatarakijnirund, MD
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Eva Philipse, MD
Chanthu Pillai
Askegan Kandasamy Pillay
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Ruben Pipek
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Frank Pompilio, MD
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Hasan Mazin Qutob, MD
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Rachida Rafiq, MS
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Aman Rajpal, MD
Nanik Ram
Constanza Fernanda Ramacciotti
Akhila Ramayapally, MD
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Sanjay Ranjit, PhD
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Mustafa Yousef Safiah, MD
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Sudipa Sarkar
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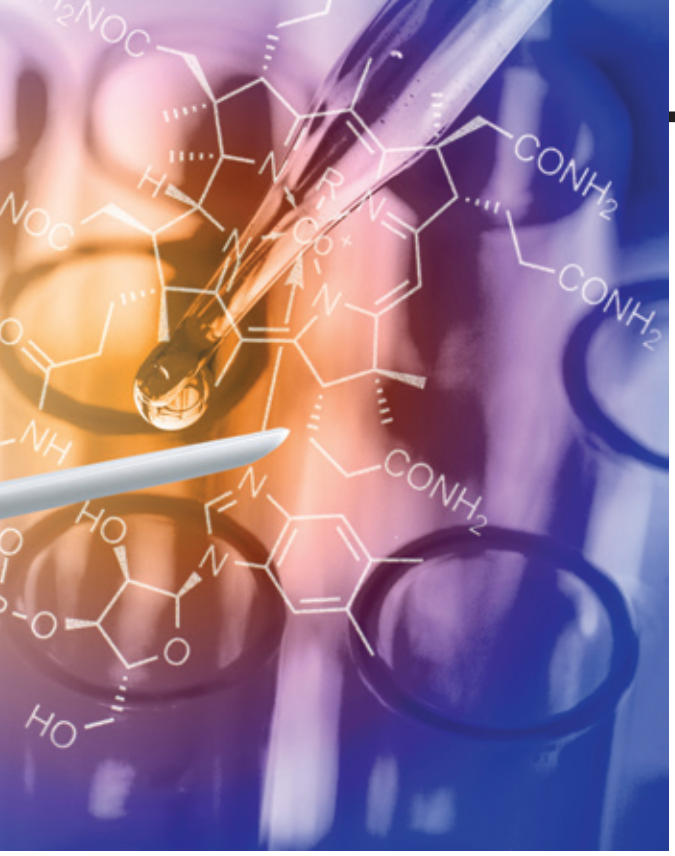
Endocrine Society Advances Global EDC Advocacy; Brings Together European Societies to Oppose Proposed EDC Criteria

During the past three years, the Endocrine Society has worked to expand its global advocacy concerning endocrine-disrupting chemicals (EDCs). The Society has become a recognized leader in advocating for policies and regulatory strategies for EDCs that reflect the latest endocrine science and incorporate principles of endocrinology. EDCs are chemicals that interfere with the normal function of hormonal systems, thereby causing adverse health consequences. Reflecting the Society's growing impact and influence in this critical area, in May the Society formed a new EDC Advisory Group to promote an integrated approach to our work on EDCs including education, advocacy, and professional resources. The Advisory Group is chaired by Angel Nadal, PhD, professor of physiology, Institute of Bioengineering and CIBERDEM, Miguel Hernández University of Elche, Alacant, Spain.

The new EDC Advisory Group has been active immediately, contributing to important international meetings to discuss the science of EDCs and how endocrine science can be incorporated into regulatory decision-making processes. In May and June, Nadal, with Laura Vandenberg, PhD, and R. Thomas Zoeller, PhD, participated in a workshop sponsored by the European Commission on setting priorities for further development and validation of test methods and approaches for evaluating EDCs. The workshop, held in Brussels, Belgium, consisted of presentations, discussions in breakout groups, and a vote on prioritization. Also, Jean-Pierre Bourguignon, MD, PhD, delivered a scientific presentation explaining the official positions of the Endocrine Society on the EU draft criteria for the identification of EDCs at a meeting of the Austrian Platform for Endocrine Substances in Vienna, Austria.

As mentioned in previous issues of *Endocrine News,* the European Commission has been working for several years on criteria to define EDCs in the context of applicable laws. The current proposed draft under consideration by the Member States is opposed by the Endocrine Society because the criteria are excessively narrow and include exclusions for chemicals specifically designed to disrupt target insect endocrine systems that have similarities to systems in wildlife and humans. Consequently, the criteria will fail to effectively protect the public from harms due to EDC exposures.

On June 15, the Endocrine Society developed a letter to European Member State ministries that, through an outreach strategy led by Bourguignon, was co-signed by Art Jan van der Lely, MD, PhD, president of the European Society of Endocrinology; Peter Clayton, MD, MRCP, FRCPCH, secretary-general of the European Society for Pediatric Endocrinology; and Angel Nadal as chair of the Society's EDC Advisory Group. Representing the opinion of three of the world's leading international medical and scientific organizations devoted to endocrine research and care, the statement opposes the proposed criteria and strenuously objects to the loopholes present in the criteria for certain pesticides.



The letter urges Member States to improve the criteria by:

1. Removing the exemption for biocides and pesticides designed to act on endocrine systems;

2. Adhering to a science-based definition of EDCs that includes categories for known EDCs and chemicals for which more information is needed to make a determination; and

3. Maintaining a hazard-based identification system, without derogations based on risk.

We anticipate that the criteria will be submitted for approval by the EU member states in mid-July. Following the approval, the criteria would go to the European Parliament for a vote. Implementation of the criteria will be guided by the European Chemicals Agency and the European Food Safety Authority. We will continue to keep members apprised of this developing issue, and we will stay engaged with the European Union throughout the legislative and regulatory processes related to the EDC criteria.

NIH Rolls Back Proposal to Limit Grant Support to Individual Investigators

As reported previously in the May issue of *Endocrine News*, the National Institutes of Health (NIH) proposed to implement a new policy to place a cap on total research support that may be received by an individual investigator. The cap, based on a metric called the Grant Support Index (GSI), would be equivalent to three R01-series grants. As of June 12, the Endocrine Society has learned that the NIH is no longer proposing any cap on grants, but will instead pursue an entirely new policy to accomplish the goal of balancing funding support across all career stages.

The new policy, called the Next Generation Researchers Initiative, will allocate an estimated $210 million per year, increasing by ~$210 million each year, to arrive at a total of ~$1.1 billion per year, to raise the payline for early stage investigators (ESIs) who have been principal investigators (PIs) for less than or equal to 10 years and are in danger of losing NIH support. The policy will extend to those PIs seeking their second NIH grant. Funding for this initiative will come from reprioritization of NIH funds and use of innovative grant mechanisms such as the R56 and R35 programs. Over a longer timeframe, NIH will also develop metrics of productivity to better enhance stewardship of taxpayer dollars and assess research output by measuring various outcomes such as patents, medical interventions, and changes to medical practice.

We are encouraged that the NIH took into account feedback received from various sources to revise its approach to supporting researchers throughout their careers. We appreciate that NIH will continue to use stakeholder input to inform short- and long-term actions in pursuit of this goal.

For more information, please see the presentation "Enhancing Stewardship: The Next Generation of Researchers Initiative" on the NIH website at acd.od.nih.gov or contact the Endocrine Society Associate Director for Science Policy Joseph Laakso at **jlaakso@endocrine.org**.

U.S. Senate Considers Health Reform Legislation; Timing Uncertain

As this issue of *Endocrine News* goes to print, the U.S. Senate was working hard to develop its version of a health reform measure, but timetable expectations continue to shift. The U.S. House of Representatives passed its version of a health reform bill in May; the Senate leadership had hoped to pass an alternative healthcare coverage measure by the end of June.

Senate Republicans are using a fast-track budget process known as reconciliation to get their proposal through. The reconciliation process requires only a simple majority of members (51) to support the legislation, as opposed to the standard 60-vote threshold. While reconciliation provides the Republicans an opportunity to pass a bill with only Republican support (52 members of the Senate), the Republicans can only afford to lose up to two votes in the event of a tie-breaking vote from Vice President Mike Pence. Therefore, the margin for victory is very small and the voice of each of the Republican Senators is amplified.

While Senate Republicans are wrestling with many different healthcare bill topics, the focus is on how to adjust the current Medicaid expansion without harming states that have expanded or programs that have higher Medicaid costs, while not penalizing states that chose not to expand or have efficiently managed their Medicaid programs.

The Endocrine Society has continued to meet with senators to advocate for affordable and adequate health insurance. We have also shared non-partisan principles we believe should be incorporated into any legislative proposal:

- Affordable access to health insurance;
- Inclusion of preventive health benefits;
- New models of coordinated care that Endocrine Society members can participate in; and
- Protection of women's health.

TAKE ACTION: We strongly encourage all U.S. Society members to share our principles with your senators before a vote is taken. The Society has an online advocacy campaign available at www.endocrine.org/advocacy. All you need to do is provide EITHER your home address OR your email and member ID. Our software will provide you with an email you can personalize if you choose to and will direct the email to your senators.

NIH Leadership Updates – Francis Collins Retained, Norman Sharpless Announced as NCI Director

On June 6, President Trump announced that Francis Collins, MD, PhD, would be retained as director of the National Institutes of Health (NIH). Collins was originally confirmed as NIH director during the Obama administration on August 7, 2009, and was temporarily retained at the outset of the Trump administration. The notice that Collins will continue in his current capacity ends speculation that President Trump might appoint U.S. Representative Andy Harris (R-Md.) or biotech entrepreneur Patric Soon-Shiong, who have been rumored to be in consideration for the NIH director position.

During a hearing of the Senate Appropriations Subcommittee on Labor, Health, and Human Services on June 15, senators expressed enthusiasm for Collins, emphasizing his leadership and ability to explain the science and impact of biomedical research to members of congress. The Endocrine Society looks forward to working with Director Collins to continue to support biomedical research and advance progress made during recent years towards steady, sustainable increases in funding for research.

On June 9, President Trump announced that Norman Sharpless, MD, would be appointed to lead the National Cancer Institute (NCI). Sharpless is currently the director of the University of North Carolina Comprehensive Cancer Center, Molecular Therapeutics, and Wellcome Distinguished Professor in Cancer Research. He has longstanding research interests in cancer genetics, stem cell aging, and mouse models of cancer.

Sharpless replaces Douglas Lowy, MD, who has been serving as acting director of the NCI since April 2015, after Harold Varmus, MD, stepped down from the leadership post at the institute. The Endocrine Society congratulates Sharpless on his appointment and looks forward to working with the NCI to support research on hormone-sensitive cancer and other critical work done by endocrine scientists and clinicians in support of the mission and goals of the institute. EN

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Endocrinologist Opportunity

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About the Endocrinologist Opportunity:

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- Employed within Beebe Medical Group, a multi-specialty hospital network
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- Repeatedly recognized with national awards
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- Margaret H. Rollins School of Nursing

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Beebe Healthcare

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This is not visa sponsored opportunity.
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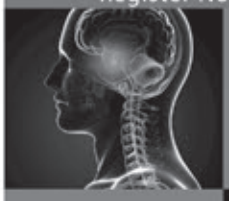
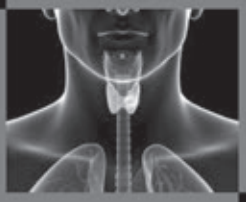


CURRICULUM HIGHLIGHTS:

- Assess risks and benefits of standard and emerging treatments of endocrine disorders
- Learn new approaches to diagnose endocrine diseases
- Board Review Q&A and interactive discussion of selected case studies
- Developed and taught by leading endocrinologists in each focus



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NIH Medical Professionals

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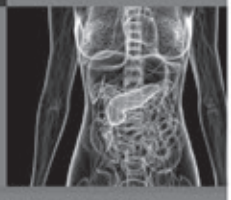
Endocrinologists wishing to remain abreast of advances in the field or seeking recertification.

Anyone preparing for the board certification exam.



SPEAKERS INCLUDE:

- Dr. Andrew Bauer, The Children's Hospital of Philadelphia
- Dr. Beverly Biller, Harvard Medical School
- Dr. Electron Kebebew, NCI/NIH
- Dr. Kristina Rother, NIDDK/NIH
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Send CV referencing search # 30899 to:
Joseph Bass, MD, PhD,
Chief Division of Endocrinology, Metabolism, and Molecular Medicine,
Northwestern University,
303 East Superior Street, Lurie 7-107
Chicago, Illinois 60611-2951

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HORMONES AND CHILDHOOD GROWTH
WHAT YOU NEED TO KNOW

The endocrine system is a network of glands and organs that produce, store, and secrete hormones, which are really important in a child's growth, especially during puberty. Hormones play a big role in an adolescent's development and overall health. Hormone disorders can lead to early puberty, delayed puberty and other health issues.

PUBERTY FACTS

Puberty is the time of life when a child develops into an adult. It usually begins as early as age 7½ to 8 and as late as age 13 in girls, and between ages 9 and 14 for boys.

At this time, a girl's ovaries and a boy's testes will begin to function. Puberty occurs when a part of the brain called the **hypothalamus** begins a hormone releasing process that increases sex hormones — **estrogen** in girls and **testosterone** in boys. This leads to the physical changes of puberty:

- Breast development and menstruation (a period) in girls
- Growth of the penis, testicles, lowered voice, and facial hair in boys
- Growth spurts of bones and muscles and a rapid increase in height
- Changes in body shape and size

Delayed puberty is when a teen goes through body changes later than the usual age range. For girls, it can mean no breasts by age 13 or no menstrual periods by age 16. For boys, it means no growth of the testicles by age 14.

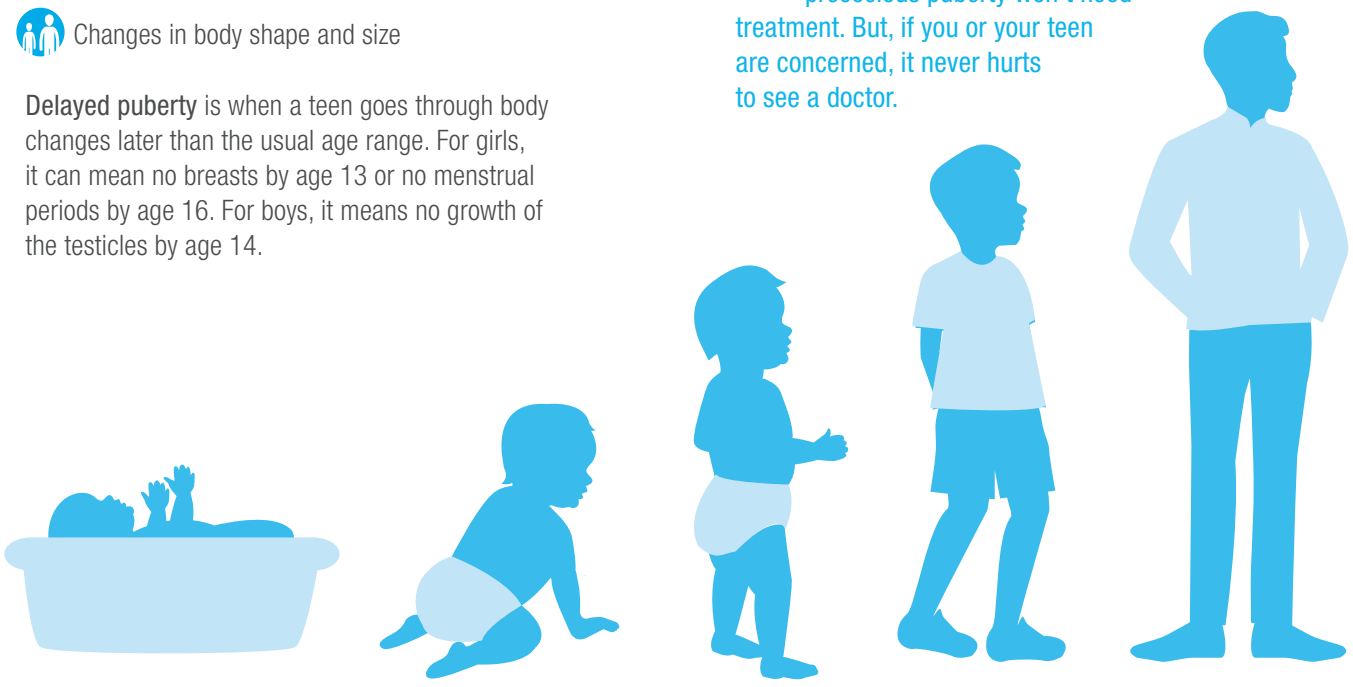
Being a "late bloomer" is the most common cause of delayed puberty. If the condition isn't caused by a medical problem, then it usually doesn't need treatment.

Precocious puberty is the appearance of sex features — testicular enlargement in boys and breast development in girls — in boys younger than age 9 and girls younger than 7½ or 8.

Premature adrenarche refers to early pubic hair, acne, and adult body odor in boys and girls. These are thought to result from increased secretion of weak androgens from the adrenal gland. The majority of these children do not require treatment for this unusual pattern of development. In a few cases, however, this may be a sign of a hormone imbalance.

Hormones that increase during puberty can cause acne on the face and body, increased sweating and a stronger body odor.

Most likely, your child's delayed or precocious puberty won't need treatment. But, if you or your teen are concerned, it never hurts to see a doctor.



Visit hormone.org for more information.

Additional Editing by Alicia Diaz-Thomas, MD, MPH,
University of Tennessee Health Science Center

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DID YOU KNOW?

Delayed puberty can run in families. Many teens who go through puberty late have parents, siblings, and other family members who had similar experiences with puberty.

- Precocious puberty affects about 1 to 2 percent of children
- About 20 percent of adult height is gained during puberty
- About 50 percent of normal adult weight is gained during puberty

Source: Krames Patient Education

DIAGNOSIS

Your doctor will carefully evaluate your child's medical history, including his or her birth history, sexual development, medications (including exposure to natural medicines, people using testosterone creams or lavender or tea tree oils in the house), illnesses, and emotional changes or injuries that could affect a child's development. Your family history will also be reviewed including the pubertal development pattern of parents and siblings. He or she may also give your child a physical exam, schedule lab work, or take an X-ray of your child's hand.

TREATMENT

Depending on the underlying condition causing your child's early or late development, medication may or may not be needed.

For children undergoing early pubertal development, your doctor may discuss whether the use of a medication to delay puberty until a more normal time would be needed.

The vast majority of children with late puberty have a "late bloomer" pattern of growth called constitutional delay of growth and development. These children typically require no medical treatment.

If a child has a delayed puberty arising from an inability of the body to make the needed hormones, a hormone replacement regimen is prescribed. This regimen will aim to mimic the normal pubertal tempo. Some children will need to remain on these medications into adulthood.

Growth hormone deficiency (GHD) is a rare condition. Children with GHD may receive treatment with daily injections of a prescription medicine. The best results occur when GHD is treated early. Some children need treatment until adolescence; others need it into adulthood.

4 QUESTIONS TO ASK YOUR DOCTOR

- What should my child's height be at this age?
- Why is my child growing slowly?
- Does my child need treatment?
- Should I take my child to a pediatric endocrinologist?

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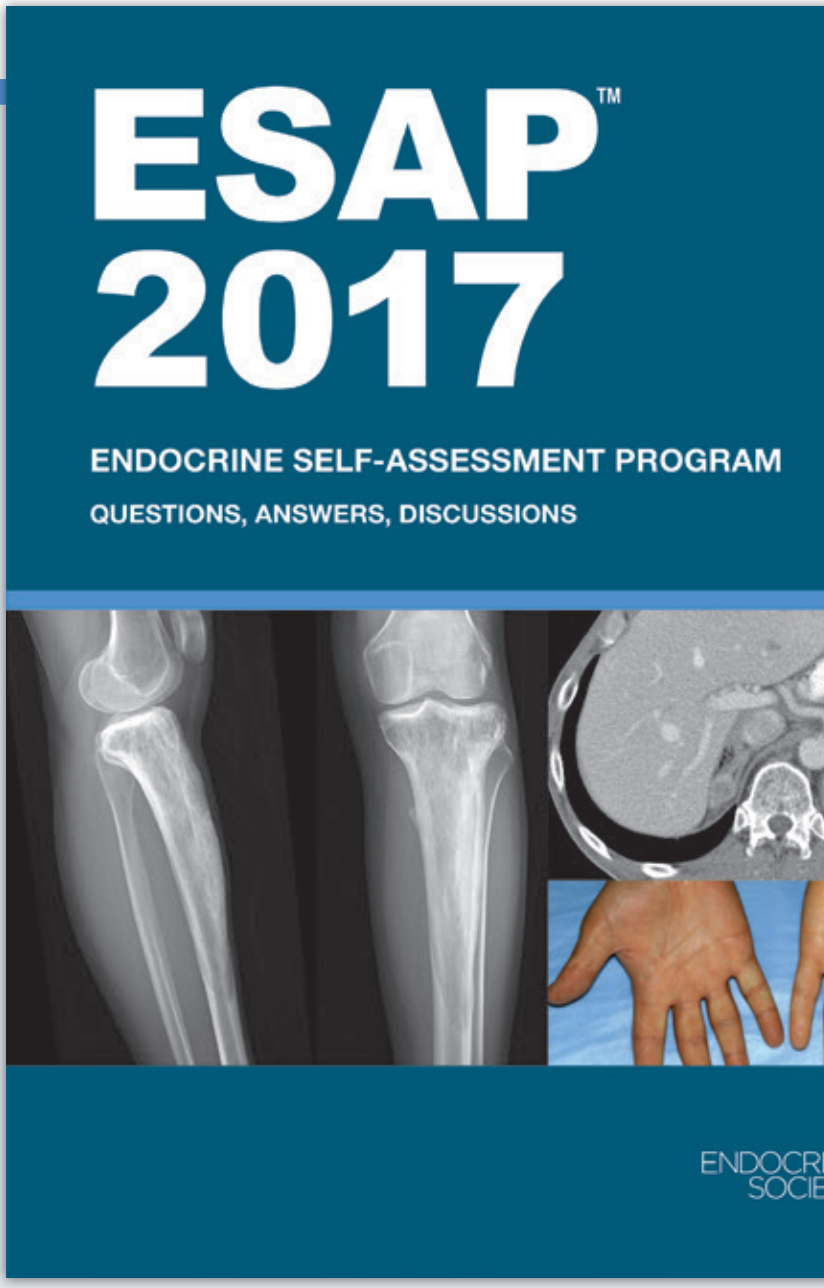

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