

SEPTEMBER 2017

THE LEADING MAGAZINE FOR ● ENDOCRINOLOGISTS

Endocrine news

MYTH BUSTERS: Adrenal Fatigue

Patients may be convinced they have it, but adrenal fatigue does not exist, period. However, the symptoms and the suffering are real and are often caused by treatable conditions.

Endocrine News examines adrenal fatigue from its dubious roots to possible new opportunities for optimizing patients' health.

CROSSING BORDERS:

How the travel ban has affected a Syrian-born endocrinologist.

LIFE AFTER POSTDOC:

PhD achieved...now what? Luckily, options abound!

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Hormone Science to Health

Endocrine news

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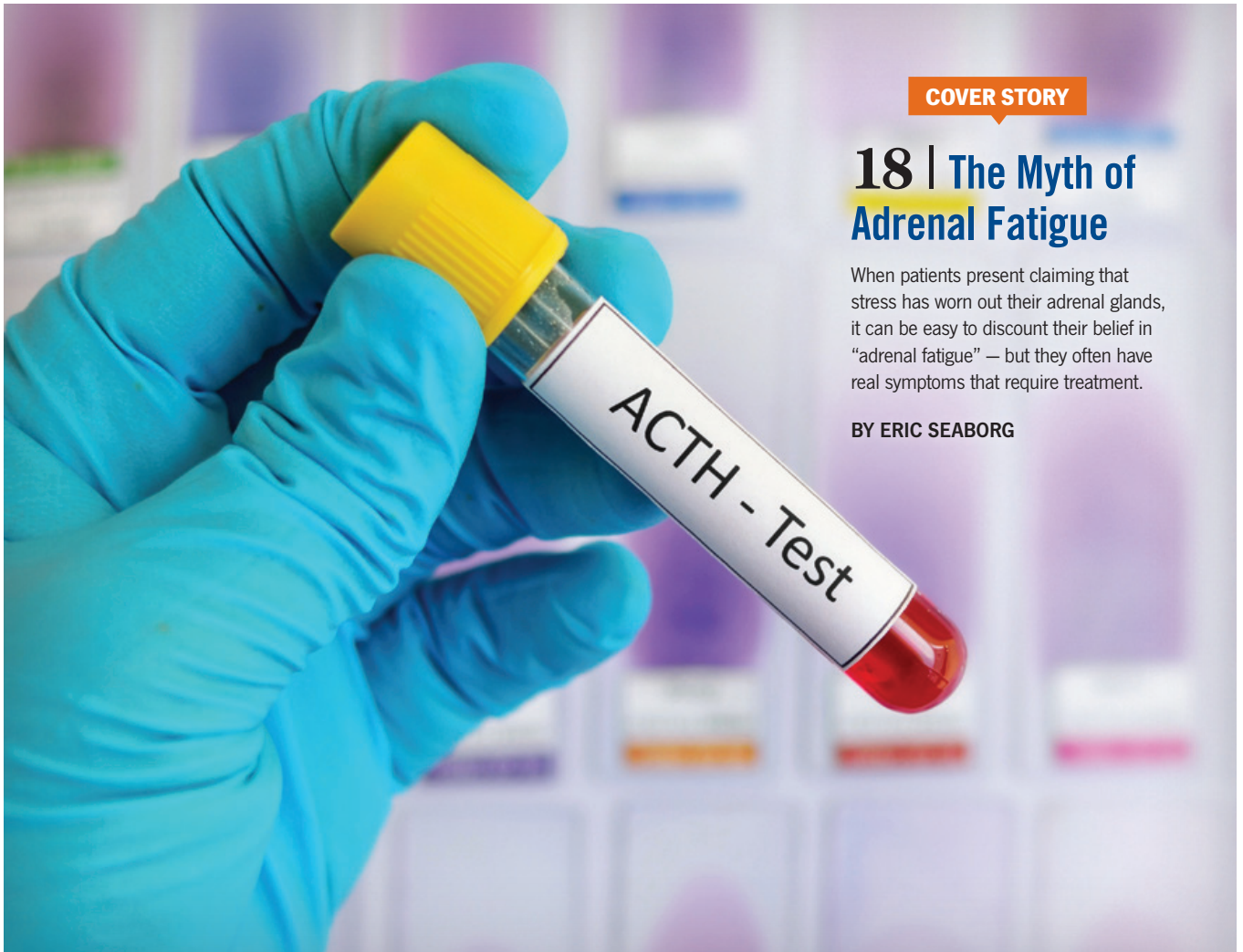
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COVER STORY

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When patients present claiming that stress has worn out their adrenal glands, it can be easy to discount their belief in “adrenal fatigue” — but they often have real symptoms that require treatment.

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While the ACA repeal effort is ongoing in Washington D.C., other new initiatives from the Trump administration are also cause for concern. *Endocrine News* spoke with Syrian-born Endocrine Society member Alaa Al Nofal, MD, on what impact the travel ban could have on him, his practice, and his patients.

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The Endocrine Society sponsored the Growth Hormone Deficiency Summit in August to facilitate progress on how to move forward with treating this condition. Stakeholders from throughout healthcare were involved in a lively eight-hour discussion that delved into the complexities of the U.S. healthcare system.

BY DEREK BAGLEY



FROM THE **EDITOR**

New Column Debuts, Old Favorite Gets Revamped

MY PHILOSOPHY ON MAGAZINES IS LIKELY NOT UNIQUE TO me but I'll share it anyway: A magazine needs to evolve continuously. All print magazines do this, and *Endocrine News* has done it a great deal over the course of the last four years. This month will mark the introduction of a new column and a facelift of sorts for an old favorite that has been in the magazine since the beginning.

On page 38 you'll see the debut of EndoGear, which will highlight a variety of products that will hopefully help you do your jobs, whether you're at the bench day and night or seeing patients in a private practice or making hospital rounds. The products featured in this column are thoroughly researched by our newest writer Courtney Carson. You are welcome to submit any products that you may have come across that you would recommend. So if you find something that has helped out your practice or your research, please feel free to share with us so we can share with the rest of your colleagues.

One of the most popular sections in *Endocrine News* is the Trends & Insights column which can often seem like a magazine within a magazine. It's packed with a variety of information from research studies from around the world, many of which have been published in the Society's own journals. Overseeing this heady endeavor is senior editor Derek Bagley who delves deep into these studies, contacts the researchers for information, and creates these articles. We've given this section a bit of a "refresh" courtesy of our art director Catherine Neill and we think you'll like these changes beginning on page 14.

As always, if you have any ideas or suggestions for topics you'd like to see covered in *Endocrine News*, feel free to let me know. We are always open to story ideas from our readers, especially those that are important enough to share with the endocrine community.

Send me those ideas at mnewman@endocrine.org. 

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

CORRECTION

In the Tri-Point article "Basic and Clinical Aspects of Menopause," which ran in the August issue, basedoxifene was misidentified as containing SERM as well as conjugated estrogens. It should have stated that it is in fact basedoxifen/conjugated estrogens which contains a SERM along with conjugated estrogens.

Endocrine News regrets the error.

SEPTEMBER 2017

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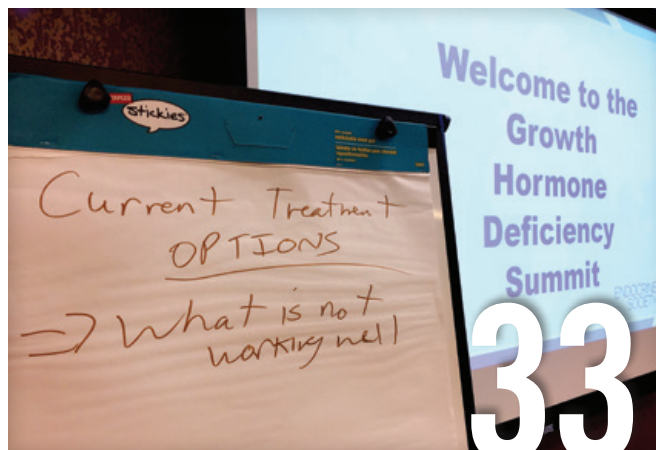
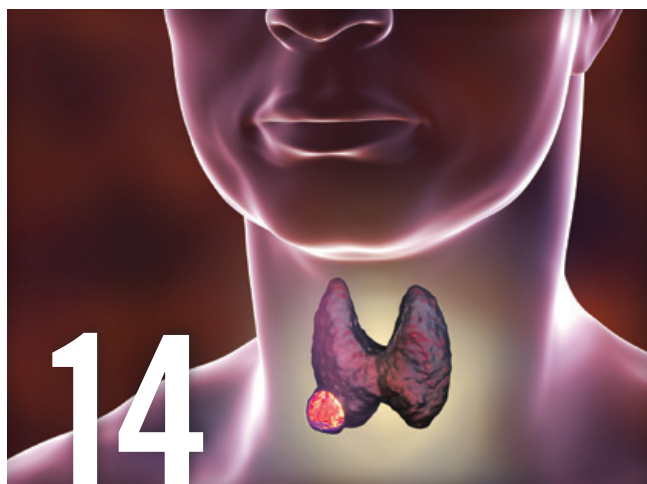
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Career opportunities

www.endocrine.org



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Hormone Science to Health



We've always been Basic *and* Clinical! Looking to the past and the future

CLINICIANS AND SCIENTISTS WERE THE founders of our Society, as noted by Lewellys Barker in his 1919 presidential address to the Association for the Study of the Internal Secretions (later renamed the Endocrine Society):

"[The Association's] journal, *Endocrinology*, is being published in the interests both of the advance of science and of better medical practice. Our objects include not only the further development of a pure science of endocrinology, but also the evolution of an applied science of endocrinology and the improvement of the medical art ... in endocrine domains. The membership of our Association includes therefore not only investigators and teachers in the pre-clinical medical sciences of anatomy, histology, embryology, physiology, physiological chemistry, pharmacology and experimental pathology, but also many representatives of the clinical sciences ... and of the closely allied sciences of pathological anatomy and pathological physiology. Only through the mutual respect, the thorough reciprocal understanding and the closest cooperation in every way of workers in all these sciences can progress ... be made. It is hoped and believed that the Association and its journal may go far toward stimulating research in clinics as well as in laboratories and toward coordinating the interests of the workers in all subdivisions of the endocrine field."

The call for mutual respect, reciprocal understanding, and close cooperation, so as to increase our knowledge and improve clinical care, still resonates nearly 100 years later. Many of our members fill multiple professional roles, including investigation, education, administration, technical services, and clinical care. Rather than defining ourselves as a tripartite organization, our second century may be the time to celebrate the multi-faceted perspectives that we each bring to our endocrine family.

This month I'd like to share with you some recent developments that will be of interest to those of us who want to "keep up" with new findings in the basic underpinnings of endocrinology.

New Editor-in-Chief of *Endocrinology*

Teresa K. Woodruff, PhD, past-president of the Society, vice chair for research in the Department of Obstetrics and Gynecology at Northwestern University Feinberg School of Medicine in Chicago, Ill., and newly appointed dean of the graduate school, will be the next editor-in-chief of *Endocrinology*.

“
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underpinnings
of endocrinology.
”

Teresa is a passionate advocate for endocrine science who believes the promise of basic science is that tomorrow's patient will be treated better than today's. The leadership and dedication that she will bring to *Endocrinology* won her a presidential award from President Barack Obama and landed her on *Time* magazine's "Most Influential Persons" list.

Endocrinology is well known as our premier basic science journal, publishing basic and translational research at molecular, biochemical, cellular, genomic, comparative, and organismal levels. Teresa's vision is for *Endocrinology* to be the gravitational center for the discipline of endocrinology and a must-read for all of us. She begins her term as editor-in-chief this January.

Science Pathways at ENDO 2018

Next spring may seem a long way away, but we're hard at work in developing the program for **ENDO 2018**, which will occur in Chicago, Ill., March 17 – 20, 2018. We have expanded the Science Pathways to provide you with the ability to take a deep dive into a specific focus area in an easy-to-follow program. This year's pathways include: nuclear receptors, hormone-dependent

cancers, obesity and metabolism, G-protein-coupled receptors, and the development origins of health and disease.


The Plenary Lectures are dramatically varied, ranging from circadian rhythms to endocrinology of the tongue. We also have two fantastic symposia that will review the past and look forward to the future. “DHT – 50 Years and Beyond” will highlight discovery, applications, and backdoor pathways to DHT analysis. “25 Years of RET Mutations in MEN2: What Have We Learned?” will review clinical presentation and genotype-phenotype correlations discovered over the past 25 years and their implication for the management of affected children.

I know many of you can't wait to get your hands on the **ENDO 2018** program. The good news is you won't have to wait much longer. In October, the **ENDO 2018** program will be available online for you to review and search for programming of interest to you.

Advocacy Efforts

Biomedical research funding continues to be the biggest challenge for many basic and clinical scientists. The Society continues to be a vocal advocate for increasing funding for U.S.-based scientists. We have launched online grassroots campaigns (www.endocrine.org/advocacy) urging members of Congress to support at least \$35 billion for the National Institutes of Health (NIH) in fiscal year 2018.

Society staff and members have gone to Capitol Hill to meet with congressional offices and share information about the value of endocrine research. We have partnered with several other research groups to sponsor educational briefings for Congress about the importance of basic and clinical research, and we are scheduling meetings with several individual NIH institutes to discuss research priorities.

I encourage all our U.S. investigator members to channel their passion for their field into action. Please contact our Government and Public Affairs staff (govt-prof@endocrine.org) to get involved with our advocacy campaigns or to learn more about our research advocacy activities. 

— Lynnette Nieman, MD, President, Endocrine Society

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Teresa Woodruff Named Dean of Northwestern University's Graduate School



Endocrine Society past-president Teresa K. Woodruff, PhD, has been named the new dean of The Graduate School and associate provost for graduate education at Northwestern University in Chicago, Ill.

Woodruff, the Thomas J. Watkins Professor of Obstetrics and Gynecology and director of the Women's Health Research Institute at Northwestern University Feinberg School of Medicine, is an internationally recognized expert in ovarian biology and has spent 32 years as a member of the Northwestern community in various roles.

"This is an amazing opportunity, and I am deeply committed to the mentorship and training of the next generation of scholars," Woodruff says. "I have firsthand experience with the life of a graduate student at our institution and the opportunities our students have during their training and their career afterward."

"It's a real honor and pleasure to be able to lead The Graduate School," she adds. "I understand the needs of diverse training environments, ranging from the humanities and social sciences to the performing and professional arts and to the basic and medical sciences."

Woodruff is vice chair of research (OB/GYN) and chief of the Division of Reproductive Medicine in Science at Feinberg. She also is professor of molecular biosciences in the Weinberg

College of Arts and Sciences and professor of biomedical engineering in the McCormick School of Engineering. In addition, she is the director of the Center for Reproductive Science and director of the Oncofertility Consortium.

Woodruff has helped change the way research is funded in America, working to spur the National Institutes of Health (NIH) to establish a policy last year that requires the consideration of sex as a biological variable in basic science and preclinical research. This policy marks a fundamental shift in the way researchers must evaluate sex in the use of subjects and cells in their design of experiments.

Woodruff has long been an advocate for education, diversity and inclusion — not only at the professional level but also with high school students. To this end, she founded and directs the Oncofertility Saturday Academy (OSA), one of several high school outreach programs that engage girls in basic and medical science.

"We will continue to recruit the most talented and creative students who have the potential to not only engage with the world but to change it," Woodruff says.

"We want to create an environment in which their learning, discovery, understanding, and creativity can flourish. We're not here to simply train students in the knowledge that currently exists, but to prepare and inspire students to transform the world of our future and create the new tools and ideas that will enhance all of our lives."

“
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”

WHAT'S IN A NAME?

In 2006, Woodruff coined the term “oncofertility” to describe the merging of two fields: oncology and fertility.

As a reproductive endocrinologist, Woodruff has spent the better part of her research career focusing on female reproductive health and infertility. She is founder and director of the Oncofertility Consortium. With the consortium, Woodruff established a national team of oncologists, fertility specialists, social scientists, educators, and policymakers to translate her research to the clinical care of women who will lose their fertility due to cancer treatment.

As an educator and mentor, Woodruff encourages young women to pursue careers in the sciences and has developed the Women's Health Science Program for High School Girls and Beyond. The program at the Feinberg School targets primarily African-American and Latina girls from disadvantaged backgrounds in Chicago. The young women can study at four different Northwestern academies: cardiology, physical science, infectious disease, and oncofertility.

Woodruff's program for mentoring urban minority high school girls for college and careers in science and health was awarded the prestigious Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring by President Barack Obama in 2011.

Widely recognized for her work, Woodruff holds 10 U.S. patents, and was named in 2013 to *Time* magazine's “Most Influential Persons” list. Some of her recent awards and honors include the *Journal of Women's Health* Award for Outstanding Achievement in Women's Health Research (2017), election to the College of Fellows at the American Institute for Medical and Biological Engineering (2017), and the Society for Endocrinology Transatlantic Medal (2017).

She also received the Beacon Award from Frontiers in Reproduction (2013), the Vision and Impact Award Honoring Women Who Change Lives from the American Committee for the Weizmann Institute of Science (2012), an Alumni Association Merit Award from Northwestern (2012), the Distinguished Woman in Medicine and Science from Northwestern (2009), Feinberg School's Faculty Mentor of the Year (2009), and the Alumnae of Northwestern Award (2008).



Professor Paraskevi Argyropoulou-Pataka, rector of Aristotle University, presents Zvi Laron, MD, PhD, with the university's Honoris Causa Professor award. Photopress©Yannis Tsouflidis

Zvi Laron Honored by Aristotle University of Thessaloniki

Zvi Laron, MD, PhD, was honored by Aristotle University of Thessaloniki, Greece, in April with the title of Honoris Causa Professor for his outstanding contribution to medical science as well as his remarkable academic achievements.

Laron received the 2001 Laureate Award for Outstanding Clinical Research Investigator. Head of the Endocrinology & Diabetes Research Unit, Schneider Children's Medical Center, Tel Aviv University, Israel, Laron's current research focuses on preventing type 1 diabetes and the GH/IGF-I actions on the brain.

After his postgraduate studies at the Massachusetts General Hospital, Boston, and Pittsburgh Children's Hospital, he founded the first pediatric endocrinology clinic in Israel. He started the first the multidisciplinary team approach in the treatment of children with diabetes and discovered Laron syndrome and its etiology due to defects in the growth hormone receptor. Another important finding was that patients with congenital IGF-I deficiency are protected lifelong from developing cancer even if treated.

Laron is a Member of the German Academy of Sciences, Founding Member of the European Society of Pediatric Endocrinology, International Society of Pediatric and Adolescent Diabetes, and the Growth Hormone Research Society.

Endocrine Society Joins Effort to Get September Named PCOS Month



The Endocrine Society and its patient education arm, the Hormone Health Network, have joined with other associations, members of Congress, and PCOS Challenge: The National Polycystic Ovary Syndrome Association to designate September as Polycystic Ovary Syndrome Month.

The organizations have worked with over 20 leaders in the U.S. House of Representatives to introduce Resolution H.Res.495 titled, “Recognizing the seriousness of Polycystic Ovary Syndrome (PCOS),” and expressing support for the designation of the month of September 2017 as PCOS Awareness Month. This historic and bipartisan effort represents the first time there has been a central focus on PCOS in the U.S. Congress.

H.Res.495 encourages states, territories, and localities to support the goals and ideals of PCOS Awareness Month which are to:

- ▶ Increase awareness of, and education about, the disorder among the general public, women, girls, and healthcare professionals;
- ▶ Improve diagnosis and treatment of the disorder;
- ▶ Disseminate information on diagnosis and treatment options; and
- ▶ Improve quality of life and outcomes for women and girls with PCOS.

The resolution also recognizes the need for further research, improved treatment and care options, and for a cure for PCOS; acknowledges the struggles affecting all women and girls afflicted with PCOS residing within the U.S.; and urges medical researchers and healthcare professionals to advance their understanding of PCOS to research, diagnose, and provide assistance to women and girls with PCOS.

“It is time that polycystic ovary syndrome becomes a public health priority. PCOS is one of the most pervasive and underserved public health issues threatening the mental and physical health, and quality of life of girls, women and their families,” says Sasha Ottey, executive director of PCOS Challenge, the leading patient support organization for women and girls with PCOS globally. “The disorder can lead to infertility, lifelong complications, and the most common causes of death in women including type 2 diabetes, cardiovascular disease, and cancer.”

Some of the organizations that are joining the Endocrine Society and the Hormone Health Network in supporting H.Res.495 include American Electrology Association, Androgen Excess and PCOS Society, National Eating Disorders Association, RESOLVE: The National Infertility Association, Society for Women’s Health Research, Tinina Q. Cade Foundation, and The White Dress Project.

For more information about PCOS Challenge, H.Res.495, and how to get involved, visit <http://www.pcoschallenge.org/prioritize-pcos>.

Two European Universities Honor Leonard Wartofsky

In June, Endocrine Society past-president Leonard Wartofsky, MD, MACP, professor of medicine at Georgetown University and editor-in-chief of *Endocrine Reviews*, was awarded doctorate *honoris causa* from both the University of Poznan in Poland and the University of Athens in Greece.

“I think it’s a tremendous honor,” Wartofsky says. “It’s not something you really expect in life or the kind of career I’ve had. You know I’ve won several honors from the Endocrine Society and the American Thyroid Association and the American College of Physicians. And those are from your peers in recognition of what you may have done. But these are from colleagues at universities in obviously remote places, i.e., Poland and Greece. To recognize what one has achieved in your career and be given what may be one of the highest honors from their school is very, very touching.”

Wartofsky has been active in both universities’ scientific communities. When he was president of the Society, Wartofsky wanted to increase international involvement in committees since that constituency of the membership was growing rapidly. “I reached out to the scientists in Poland and put some of them on different committees,” he says. “I got them deservedly involved on the Editorial Board when I was editor-in-chief of *JCEM*, and they were very appreciative of that, and that led to my increased interaction with their community.”

That increased interaction paid off. The University of Poznan recognized Wartofsky with its highest honor, and when the University of Athens got word, they decided to recognize Wartofsky as well, since he had made similar visits to the Athens university, giving talks and meeting with faculty. The two universities collaborated with each other and they were able to coordinate two ceremonies in a week so Wartofsky and his wife could attend both in one trip.


For his laureate lecture at the University of Poznan, Wartofsky spoke about Polish Nobel Prize winners. He says that he had



given one of the Society’s Sawin history lectures about Nobel Prize winners in endocrinology and noted that a number of Nobel Prize winners were Polish. The University of Poznan had asked Wartofsky to give a lecture that would be of general interest to the audience. “It occurred to me that it would be of interest to them to hear about Polish Nobel Prize winners,” he says. “And in researching that, there were some 17 or 18, some in medicine and physiology, one or two in economics, and a couple of Peace Prizes as well. It was a very interesting mix of individuals and that was the basis for my lecture there and it seemed to go over very well.”

At the University of Athens, Wartofsky spoke about the future of graduate education. “Education would be changing in the future,” he says. “In fact, it already is changing. One of the medical schools just announced last week they were doing away with lectures. I spoke about that and how the focus would really be more on teaching problem solving and working in small groups, and how online education and access to information was changing how college students would be working. So it was more speculative, but I pointed out how based on current trends, the process of education would be different in many ways in the future.”

Wartofsky’s hosts in Poland and Greece, respectively, were Marek Ruchala and George Mastorakos, both members of the Endocrine Society.

Wartofsky served as president of the Endocrine Society from 2006 to 2007 and editor of *The Journal of Clinical Endocrinology & Metabolism (JCEM)* from 2010 to 2015. 

2017 Clinical Endocrinology Update/Endocrine Board Review

Chicago, Ill.

September 23 – 27, 2017

www.endocrine.org/ceu

www.endocrine.org/ebc

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.

10th International Meeting of Pediatric Endocrinology

Washington, D.C., September 14 – 17, 2017

The 10th International Meeting of Pediatric Endocrinology will bring together more than 4,000 pediatric endocrinologists from around the world, representing 10 of the world's pediatric endocrinology societies. Speakers from 23 countries will cover 14 areas of endocrinology, from growth disorders and sex development to endocrine oncology and clinical trials.

www.internationalmeeting2017.org

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



VOTE

2018 ELECTION FOR OFFICERS AND COUNCIL

The polls for the 2018 Election open on September 6, 2017 and we ask for your votes. Members with voting privileges have the opportunity to participate in the Election and select their future Society Officers and Council.

Submit your votes on endocrine.org/election

Questions should be directed to election@endocrine.org or call 202.971.3636

**Ballots will be accepted through
October 18, 2017**



WHY ENDOCRINOLOGY?

EVERYTHING in Medicine

BY ALAN MALABANAN, MD, FACE, CCD, Assistant Professor of Medicine, Harvard Medical School; Division of Endocrinology, Diabetes and Metabolism, Beth Israel Deaconess Medical Center, Boston, Mass.

My relationship with endocrinology actually started before I even knew what endocrinology was; in my family, I had many relatives with hormone-related problems, such as obesity, diabetes, and thyroid disorders. I can still remember asking my mother why she was taking medicine every day. She told me that it was for her thyroid since her body did not produce thyroid hormones. Thankfully, the medication my mother took when I was a child has continued to help her maintain her health to this day.

My interest in medicine and the sciences came early, growing up in New York State's Mid-Hudson River Valley, the eldest son of a private practice anesthesiologist and a pharmacist. My father always thought I would become a surgeon. I thought that option was a reasonable one at the time.

My first exposure to endocrinology occurred during my sophomore year at Johns Hopkins when I learned about glycolysis in a now ancient copy of Lehninger's *Principles of Biochemistry*. It was painstaking memorization out of books, not watching the rap videos or Khan's Academy-type videos available today. It was less learning the story of glucose utilization and more figuring out how jigsaw puzzle pieces fit together while wearing a blindfold. Needless to say, it was painful and did not endear me to endocrinology. Soon after, learning the Krebs cycle scarred me for life.

In medical school at the University of Buffalo, I learned that surgery was not a good fit for my personality. I gravitated toward those mentors within internal medicine. I met patients with diabetes mellitus, suffering horrifying complications at Erie County Medical Center and the Buffalo VA. Endocrinology, as a field, became more tangible and relevant to practice, as I decided on internal medicine. When my father was diagnosed with type 2 diabetes mellitus (as did his two brothers and sister), endocrinology became personally relevant.

I started my internal medicine training at Boston City Hospital in 1989, during the tail end of the AIDS epidemic. The very first patient I had admitted as a house officer was, in retrospect, an endocrinology case (although I would have classified hyponatremia as a nephrology problem then). I did not commit to endocrinology, however, until two years after I had graduated from the primary care track and had been doing locum tenens medicine in Sun City, Calif. Out of necessity, at the HMO practice, I had to read more and take more responsibility managing patients with endocrine problems:


Graves' disease and primary hyperparathyroidism. I gained confidence slowly. When I had to complete a work-up for an adrenal mass, using *Scientific American Medicine* and learned that the patient had hypercortisolism, I was hooked. I called my Boston City Hospital endocrine teachers to discuss my new

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Endocrinology is still a young field, and advances in our understanding of endocrine genetics, biochemistry, physiology, and pathophysiology occur daily and impact on oncology, cardiology, neurology, and nephrology. Endocrinology is EVERYTHING in medicine.
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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.

love for endocrinology and then decided to return to Boston for an endocrinology fellowship.

At Boston University, I learned that endocrinology was incredibly broad and touched EVERYTHING. I learned about diabetes mellitus from Stuart Chipkin and Neil Ruderman. I learned about the adrenal from Jim Melby. I learned about bone and vitamin D from Michael Holick, Cliff Rosen, and Bob Levin. I learned about the thyroid from Isadore Rosenberg, Susana Ebner, and Irini Veronikis, as well as the entire faculty at BU. I learned about the importance of pathways like glycolysis, insulin signal transduction, and yes, even the Krebs cycle.

Endocrinology is still a young field, and advances in our understanding of endocrine genetics, biochemistry, physiology, and pathophysiology occur daily and impact on oncology, cardiology, neurology, and nephrology. Endocrinology is EVERYTHING in medicine. I continue to learn new things — things that can be applied to my daily clinical practice. Why do I continue to choose endocrinology? I think that Leonard da Vinci said it best, “Learning never exhausts the mind,” and in endocrinology, there is ALWAYS something useful to learn. 

EDITOR'S NOTE: The opinions and views of the author do not necessarily represent those of *Endocrine News* or the Endocrine Society.



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BY DEREK BAGLEY
Senior Editor

TRENDS & INSIGHTS

Addressing Controversies in Managing Low-Risk Differentiated Thyroid Cancer



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The pendulum only recently swung toward less intensive treatment of low-risk DTC; therefore, there has not been enough time to assess how this practice change will impact long-term surveillance.

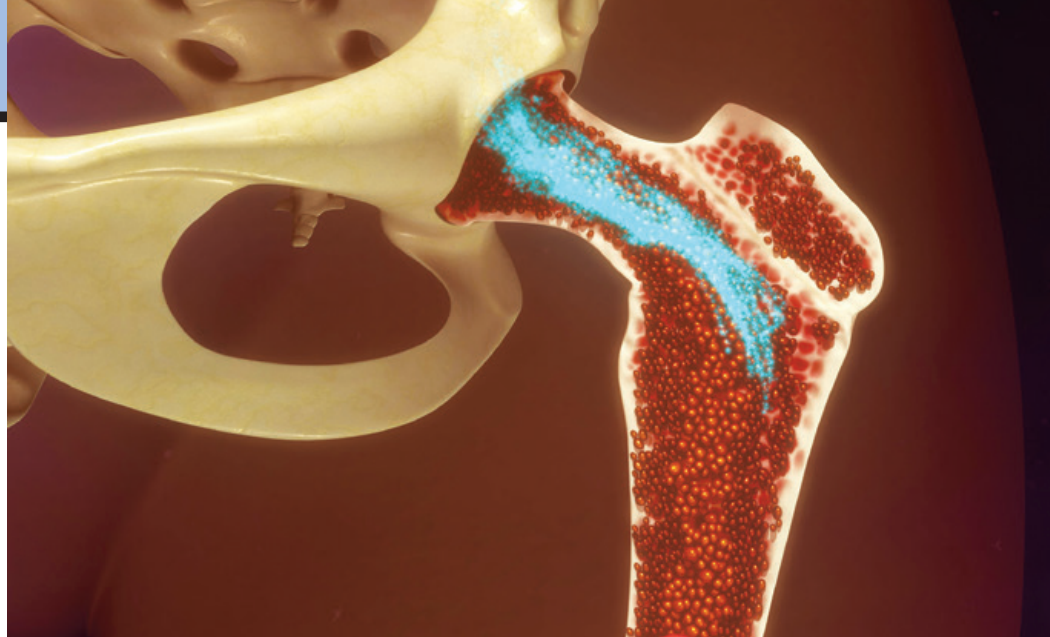
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A paper recently published in *Endocrine Reviews* is addressing the controversies that exist in managing low-risk differentiated thyroid cancer (DTC), since these controversies expose patients to the risk of being over- or undertreated.

The review, by Megan R. Haymart, MD, of the University of Michigan, et al, points out that the controversies extend across all aspects of management, from surgery to use of radioiodine to long-term surveillance. Compounding these problems are evolving clinical guidelines and inconsistencies in existing data, since many of the current studies are limited by small sample sizes and shorter-than-optimal follow-up. In addition, preferences for treatment can vary from physician to physician, and from patient to patient. Patient anxiety can also factor into treatment decision making.

Things seem to be moving in the right direction, but that means more studies are needed. The authors write that “the pendulum only recently swung toward less intensive treatment of low-risk DTC; therefore, there has not been enough time to assess how this practice change will impact long-term surveillance. Additional long-term outcomes data are needed prior to definitively defining optimal surveillance in an era of ‘less is more.’”

Findings: The authors conclude the review by calling for increasing physician consensus to reduce these controversies. They also call for improving patient care by designing “rigorous studies to address current knowledge gaps” and to disseminate this data to educate both patients and physicians when quality data exist.



Bone Marrow Fat Changes Associated with Bone Mass Loss After Gastric Bypass

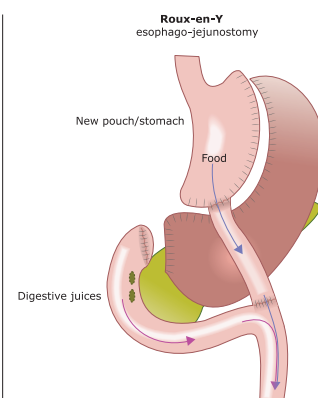
Bone marrow fat changes are associated with bone mineral density (BMD) loss in patients who have undergone gastric bypass surgery, according to a study recently published in the *Journal of Bone and Mineral Research*.

Researchers led by Tiffany Y. Kim, MD, of the University of California, San Francisco, point out that the longitudinal effects of weight loss and improved glucose homeostasis on marrow fat are unclear, and they hypothesized that marrow fat changes are associated with BMD loss after Roux-en-Y gastric bypass (RYGB) surgery. For this study, the researchers enrolled 30 obese women, and analyzed data before RYGB surgery and then six months after the surgery. “[W]e measured BMD by dual-energy X-ray absorptiometry (DXA) and quantitative computed tomography (QCT) and vertebral marrow fat content by magnetic resonance spectroscopy,” the authors write. “At baseline, those with higher marrow fat had lower BMD. Postoperatively, total body fat declined dramatically in all participants.”

Interestingly, the effects of the surgery on marrow fat differed based on the women’s diabetes status. Nondiabetic women’s marrow fat showed no

significant changes, while diabetic women on average lost 6.5% of their marrow fat. Women who saw greater improvements in their hemoglobin A1C levels saw marrow fat loss, and increases in IGF-1 correlated with marrow fat loss. “Spinal volumetric BMD decreased by $6.4\% \pm 5.9\%$ ($p < 0.01$), and femoral neck areal BMD decreased by $4.3\% \pm 4.1\%$ ($p < 0.01$). Marrow fat and BMD changes were negatively associated, such that those with marrow fat increases had more BMD loss at both spine ($r = -0.58$, $p < 0.01$) and femoral neck ($r = -0.49$, $p = 0.01$), independent of age and menopause,” the authors write.

Findings: The researchers conclude that based on these results, marrow fat changes are linked to BMD loss. This is a novel finding in humans, they write, such as showing that increases in marrow fat had greater decreases in BMD. Glucose metabolism and fat compartments also appear to be associated with marrow fat change. “Ultimately,” the authors write, “understanding the role of marrow fat in bone metabolism could lead to the development of strategies targeted to the prevention and treatment of osteoporosis, skeletal complications of bariatric surgery, and diabetic bone fragility.”



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Gene Mutation Common Cause of Pediatric Cushing Disease



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The researchers analyzed DNA samples from 42 pediatric patients with CD, and compared the data between patients with and without somatic *USP8* mutations.

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Researchers have shown that somatic *USP8* gene mutations are a common cause of pediatric Cushing disease (CD), according to a study recently published in *The Journal of Clinical Endocrinology & Metabolism*.

The team, led by Constantine A. Stratakis, MD, of the National Institutes of Health in Bethesda, Md., point out that this mutation has been identified as the culprit in patients with CD, but the frequency of these mutations hasn't been studied as extensively in the pediatric population. The researchers analyzed DNA samples from 42 pediatric patients with CD, and compared the data between patients with and without somatic *USP8* mutations.

Five different mutations were identified in one-third of these patients, which is in line with the reported frequency in the adult population. The

researchers also found that this mutation is linked to higher rates of recurrence of the tumor.

The authors write that they acknowledge the small sample size as a limitation to this study, but pediatric CD is a rare disease, and this cohort is the largest of its kind so far. They also point out that the patients in the cohort may have had more aggressive tumors to begin with, since they had to select patients with both blood and tissue samples, “and the detection of the *USP8* defect in them may be a coincidence rather than causative.” They write that this study is part of a larger one aimed at defining genetic cause of CD in children and adults, and that “additional studies are needed to define the effect of a *USP8* defect in the biologic behavior of an ACTH-producing tumor in both children and adults.”

Differential Diagnoses Should Be Considered in Patients with Features of Acromegaly without Excess GH Secretion

A paper published recently in the *Journal of the Endocrine Society* details a case of a woman with acromegaly-like features, but she did not have excess growth hormone (GH) secretion. The authors use the case to show that differential diagnoses should be considered in these patients with “pseudoacromegaly” or “acromegaloidism.”

The paper, by Per Dahlqvist, MD, of Umeå University in Sweden, et al, describes a 49-year-old woman who was referred to the authors' endocrine clinic in 2012. “This was her fourth referral and investigation for suspected GH excess since the age of 10 years,” the authors write. Over the next 40 years, she was seen by various physicians for various things, and acromegaly was suspected several times, due to her large hands and feet, large jaw and tongue, and deep voice, as well as her learning disabilities, infertility, and fatigue. Endocrine evaluations (GH, oral glucose tolerance test, insulin-arginine-thyrotrophin-releasing hormone-luteinizing hormone-releasing hormone test, other pituitary hormones, and radiography of the sella turcica) were normal. “At 49 years of age, she was referred for the fourth time for suspicion of acromegaly with fatigue, increasing swelling of hands and feet, and increasing size of the tongue,” the authors write. “She also had numbness; weight gain; pain in the knees, hands, fingers, and lumbar back; headaches; and depression. She was increasingly troubled with sweating and snoring. At the time of this referral, the magnitude of her health problems had led to sick leave.”

Dahlqvist and team performed routine lab tests which were all unremarkable, MRI scans were negative, and endocrine evaluation was normal. So the team ordered genetic testing, and they found a

heterozygous mutation was identified in the *NSD1* gene (c.6605G>C; p.Cys2202Ser), a mutation that had not been previously described. However, the authors write, “but mutations affecting the same cysteine residue (C2202R and C2202Y) have also been reported in the Human Gene Mutation Database in association with Sotos syndrome and gigantism.”

Sotos syndrome — first reported in 1964 — mimics acromegaly and is caused by a genetic mutation. This patient began her pediatric evaluation in 1974. “Although pituitary gigantism and acromegaly were suspected and excluded repeatedly in this patient, the correct diagnosis, Sotos syndrome, was delayed for several decades,” the authors write. “In current pediatric practice, tall stature with advanced bone age and some level of learning difficulties would lead to suspicion of Sotos syndrome.” However, they do point out that because of the wide variability of Sotos syndrome's phenotype, diagnosis can still be very difficult.

Other conditions to consider include Beckwith-Wiedemann (IGF2), Weaver (EZH2), Malan (NFI), and Tatton-Brown-Rahman (DNMT3) syndromes, or diseases that feature tall stature, such as Berardinelli-Seip lipodystrophy (AGPAT2) or abnormalities of natriuretic peptide C pathway (NPR2, CNP). “In adults with acromegaloid features, pachydermoperiostosis should also be considered,” the authors write.

This case has a happy ending for the patient, as the authors write: “Our patient was grateful and relieved to finally receive a diagnosis because it explained her symptoms and signs and allowed her to be treated symptomatically.” ^{EN}



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Although pituitary gigantism and acromegaly were suspected and excluded repeatedly in this patient, the correct diagnosis, Sotos syndrome, was delayed for several decades.

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The Myth of ADRENAL FATIGUE

BY ERIC SEABORG

When patients present claiming that stress has worn out their adrenal glands, it can be easy to discount their belief in “adrenal fatigue” — but they often have real symptoms that require treatment.

If more proof is needed that the Internet provides a wealth of information and misinformation, endocrinologists need to look no further than the increasing number of patients who claim a diagnosis of “adrenal fatigue.”

Although current medical science recognizes no such condition, physicians need to take the complaints and symptoms of these patients seriously, according to Endocrine Society President Lynnette Nieman, MD, who is a senior investigator at the National Institute of Diabetes and Digestive and Kidney Diseases: “Our role is to be good active listeners to determine if there is a true medical disorder lurking among the complaints. It is very important to take the person seriously, not to brush them off and say there is no [such thing as] adrenal fatigue. These people are suffering from something, so we need to take the suffering seriously.”

The patient may have already been to see a naturopath who promotes the condition, so may be taking supplements of unknown formulations to treat it.





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— LYNNETTE NIEMAN, MD, PRESIDENT, ENDOCRINE SOCIETY;
SENIOR INVESTIGATOR, NATIONAL INSTITUTE OF DIABETES
AND DIGESTIVE AND KIDNEY DISEASES, BETHESDA, MD.

WHAT IS ADRENAL FATIGUE?

The idea underlying the condition is that constant stress puts an undue burden on the adrenal glands to produce hormones — especially cortisol — and the glands burn out. The lack of adrenal hormones leads to a host of generalized symptoms including tiredness, trouble falling asleep or waking up, and a need for stimulants like caffeine to get through the day. With the fast-paced demands of modern life making many people feel consistently stressed out and sleep-deprived, it's easy to understand the appeal of a diagnosis that promises an explanation — and treatment to counteract their feelings of fatigue.

The fallacy of this logic is that there is no evidence that the stress of day-to-day life could have any such effect on the adrenals. “Endocrinologists believe — correctly — that under stress your adrenals work harder and make more cortisol, not less,” says Theodore C. Friedman, MD, PhD, chief of the Division of Endocrinology, Metabolism, and Molecular Medicine at Charles R. Drew University of Medicine and Science in Los Angeles. Friedman says that the patients may be given the diagnosis by naturopaths, chiropractors, functional medicine doctors, and anti-aging doctors.

ORIGINS OF THE MYTH

The website of chiropractor and naturopath James L. Wilson, DC, ND, PhD, says that he coined the term adrenal fatigue in 1998 “to identify below optimal adrenal function resulting from stress and distinguish it from

Addison's disease." As many other naturopaths have taken up the diagnosis, it has spread widely across the Internet. Wilson's website notes that "conventional medicine does not yet recognize it as a distinct syndrome."

That rather understates the attitude of conventional medicine. A literature review published last year in *BMC Endocrine Disorders* found "no substantiation that 'adrenal fatigue' is an actual medical condition. Therefore, adrenal fatigue is still a myth."

Adrenal fatigue is not recognized by the Endocrine Society or any other endocrinology society, but adrenal insufficiency is. One glaring problem for the adrenal fatigue concept is that the reported symptoms don't match those from adrenal insufficiency, although there is some overlap. The adrenal fatigue symptoms in an individual are "mostly nonspecific" including being tired or fatigued to the point of having trouble getting out of bed; experiencing poor sleep; feeling anxious, nervous, or rundown; craving salty and sweet snacks; and having "gut problems," says Nieman. For the most part, these do not match symptoms of chronic adrenal insufficiency, which is characterized by weight loss, joint pain, anorexia, nausea, vomiting, diarrhea, dry skin, low blood pressure, and fatigue.

TREATABLE SYMPTOMS

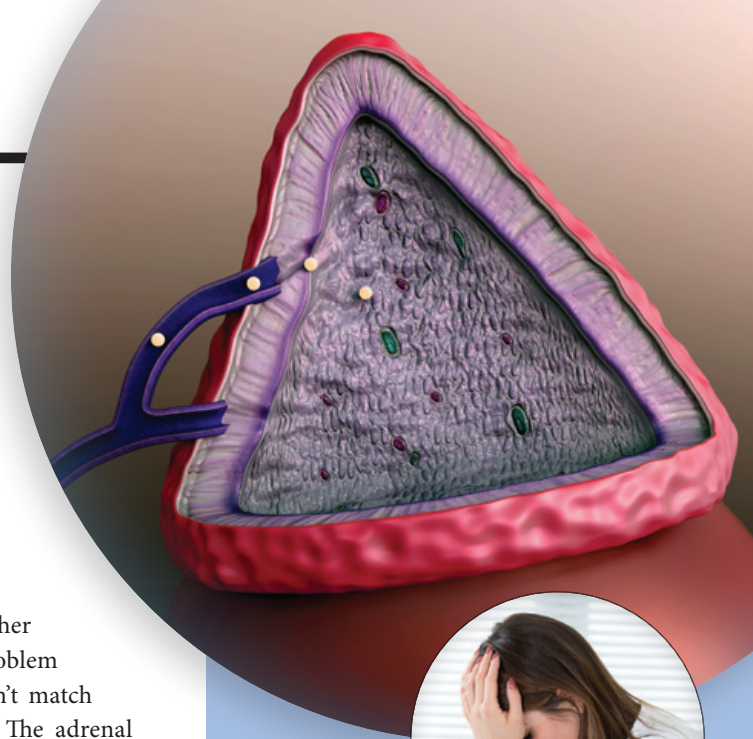
Just the same, the symptoms should be taken seriously, Friedman and Nieman agree. Both explain to patients that they are open to complementary medicine, but the adrenal fatigue explanation does not fit their understanding of how the adrenal glands work.

Nieman recommends taking a careful history and investigating the causes of each symptom or group of symptoms: "I suggest that we work with the patient's primary-care person to exclude potential disorders such as anemia, obstructive sleep apnea, irritable bowel syndrome, depression or anxiety, diabetes, other systemic illness, poor diet, stress at work or home, or overtraining."

Testing can be an important part of the process. The patients have often been given saliva tests for cortisol, so Nieman tells her patients that saliva tests are not considered reliable. She explains that the standard test is the corticotropin (ACTH) stimulation test — and that if the adrenal glands can respond to the stimulation by releasing cortisol, it disproves the theory that the glands are burned out.

Friedman says that often the naturopaths have focused so narrowly on cortisol and the adrenal fatigue hypothesis that they overlook real problems — these patients can suffer from conditions including mild anemia, thyroid problems, growth hormone deficiency, and menopausal issues.

For example, some symptoms highlighted on adrenal fatigue websites — dizziness on standing, light-headedness, brain fog, and salt craving — may be related to low



AT A GLANCE

- ▶ "Adrenal fatigue" is a diagnosis that patients are finding on the Internet or being given by alternative medicine practitioners, even though medical science recognizes no such condition.
- ▶ Endocrinologists might be tempted to dismiss a patient's claim of adrenal fatigue but should take seriously the patient's symptoms and complaints, which are often caused by treatable conditions.
- ▶ Physicians may need to steer patients away from taking unregulated supplements and other formulations recommended by alternative practitioners.



aldosterone. So Friedman often checks their aldosterone and renin, and the results might lead him to have the patients take in more salt or to consider the need for further treatment.

COUCH POTATO SYNDROME

But Nieman says that many of these patients with generalized symptoms have “what I call ‘couch potato syndrome,’ meaning that people get deconditioned if they don’t exercise. [Others have] a disorder of modern life that could be called the ‘life is hard syndrome.’” Many people are in fact stressed to the point of not taking care of themselves. For these patients, the recommendations of naturopaths have value when they emphasize adopting a better lifestyle, such as eating a healthier diet, taking vitamins, getting enough rest, exercising, and eliminating some negative things from their lives.

QUESTIONABLE SUPPLEMENTS

But often the naturopaths have recommended supplements or worse. Wilson’s website sells “Dr. Wilson’s Original Formulations” adrenal supplements. The “Adrenal Fatigue Quartet” costs about \$200 for a 30-day supply at the minimum recommended doses. The website notes in large print that the products are “formulated by Dr. James L. Wilson for people experiencing stress-related adrenal fatigue.” But the website is dotted with asterisks that lead the determined reader to a small-print notice: “This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.”

Nieman says that because these supplements are not regulated or approved by the Food and Drug Administration, there is no way to know what is in them, so she recommends that patients stop taking them. Sometimes patients are taking ground up bovine adrenal glands, and Friedman has even seen patients who have been given hydrocortisone.

Friedman says that he sees these encounters as an opportunity to “optimize the patient’s health.” Some of the problems result from bad diets, not exercising, and poor sleep habits. “You can help with some of these complaints with lifestyle changes,” he says.

Nieman adds that even when patients come in “hell bent on having this diagnosis, when I listen to everything they have to say and validate the symptoms, but tell them, ‘I really don’t think your adrenal is actually failing, but I think some of your problems are reversible,’ I find that they accept [my point of view], and can give up on this adrenal fatigue diagnosis.” ^{EN}

RESOURCES

- ▶ Dr. Lynnette Nieman will speak at the Endocrine Society’s Clinical Endocrinology Update 2017 on “Adrenal Fatigue Is Not Adrenal Insufficiency” on September 25 in Chicago. Information is available at: www.endocrine.org/ceu
- ▶ The Hormone Health Network has published a fact sheet on adrenal fatigue written on a level appropriate for patients. It can be found at: www.hormone.org/diseases-and-conditions/adrenal/adrenal-fatigue
- ▶ To see some of the “alternative facts” your patients may be reading, visit James L. Wilson’s website: www.AdrenalFatigue.org

SEABORG IS A FREELANCE WRITER BASED IN CHARLOTTESVILLE, VA. HE WROTE ABOUT THE ENDOCRINE SOCIETY’S NEW CLINICAL PRACTICE GUIDELINE ON PEDIATRIC OBESITY IN THE JULY ISSUE.

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A new study has revealed a potential new methodology to treat polycystic ovarian syndrome, but many experts have expressed serious reservations. Do the potential benefits outweigh the possible side effects of this controversial regimen?



PCOS in *Adolescence:* A MECHANISM REVEALED

BY KELLY HORVATH

Despite being the most common endocrinopathy in women of reproductive age, polycystic ovarian syndrome (PCOS) remains a confounding condition for patients, clinicians, and researchers alike.

A primarily hormonal disturbance, PCOS confers wide-ranging metabolic and reproductive health effects with accompanying psychological features, as continuing research has shown. Although it has a heritability component, PCOS is thought to primarily result from the body's incapacity to effectively store fat, leading to increased hepatic and visceral adiposity and, in turn, insulin resistance and androgen excess.

Problems with PCOS

As reported in the January 2017 issue of *Endocrine News*, even as the definition evolves, women with PCOS wait a frustratingly long time to get the diagnosis and make visits to multiple healthcare professionals before beginning treatment or receiving counseling or other support. Yet, in a November 2015 Scientific Statement developed by an Endocrine Society task force, Richard S. Legro, MD, of Penn State College of Medicine, Hershey, and chair of the task force, emphasized that earlier diagnosis is key to ameliorating the long-term effects of PCOS.



A particular therapy for PCOS has yet to be officially approved. However, it is commonly treated with oral contraceptives, which raises the question of whether this further reduces fertility by affecting future ovulation rates.

“PCOS does not start in adolescence; the risk for developing PCOS may already be present shortly after birth. **Thus, it is very important to avoid obesity and in the case of a low birthweight, to avoid a fast and excessive catch-up in weight.**”

— LOURDES IBÁÑEZ, MD, PHD, INSTITUT DE RECERCA
PEDIÀTRICA HOSPITAL SANT JOAN DE DÉU,
BARCELONA, SPAIN

To complicate the picture, as far as beginning treatment goes, a particular therapy has yet to be officially approved. However, it is commonly treated with oral contraceptives, which raises the question of whether this further reduces fertility by affecting future ovulation rates.

For reasons not well understood, but evidently relating to hepatic and visceral adiposity independently of body mass index (BMI), oligo-ovulatory PCOS is on the rise among adolescent girls, for whom future subfertility becomes quite a large concern. In a new study presented at **ENDO 2017** in April, and soon to be published in the *Journal of Adolescent Health*, researchers investigated whether a treatment other than oral contraceptives might mitigate this problem, especially because many adolescent girls are not yet sexually active and do not need contraception.

In “Normalizing Ovulation Rate by Preferential Reduction of Hepato-Visceral Fat in Adolescent Girls With Polycystic Ovary Syndrome,” lead author Lourdes Ibáñez, MD, PhD, from the Institut de Recerca Pediàtrica Hospital Sant Joan de Déu, in Barcelona, Spain, and team compared the ovulation rates of adolescent girls after treatment with oral contraceptives versus a combination of an anti-androgen and two insulin-sensitizers, 50 mg spironolactone, plus 7.5 mg pioglitazone, plus 850 mg metformin (SPIOMET). It was observed that oral contraceptives improve the signs of hyperandrogenemia (e.g., hirsutism, acne,

and oligomenorrhea) and decrease androgen levels but do not target a reduction of ectopic fat and, thus, do not decrease the risk of long-term comorbidities. Ibáñez and team, who included Francis de Zegher, MD, from the University of Leuven (Belgium); Abel López-Bermejo from the University of Girona (Spain); and Marta Díaz, PhD, from the University of Barcelona, sought a treatment that would “go to the core of the problem.” Their primary outcome measure was posttreatment ovulation rate; secondary outcome measures were body composition, abdominal fat, insulinemia, and androgenemia.

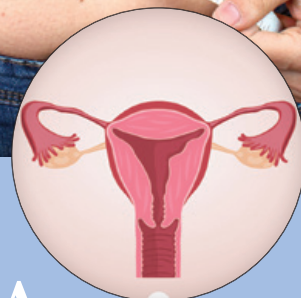
Three Times a Charm

“About 13 years ago, we started studying the combinations of insulin sensitizers and anti-androgens in non-obese girls with PCOS and without pregnancy risk, aiming at reducing visceral [hepatic] fat,” Ibáñez explains. “We combined different medications at the lowest possible doses, looking for synergistic effects and trying to avoid side effects. We started combining two medications and then went for three medications in an attempt to obtain more benefits.”

In their latest “proof-of-concept” study (see box on page 39), 34 Catalan girls average age 16 years with hirsutism and irregular periods, who had been menstruating for at least two years but who were not yet sexually active, were recruited in Ibáñez’s Adolescent Endocrinology Unit between January 2013 and May 2014 and randomized into two groups, one taking the oral contraceptive pill Loette®, a combination of 20 mcg ethinylestradiol and 100 mg levonorgestrel daily for 12 months; the other taking SPIOMET daily for 12 months. Of note is that participants were not obese, with an average BMI of 23.5 kg/m², but did exhibit abdominal fat partitioning. (Participants were non-obese because overweight/obese adolescent girls would have been referred to the hospital’s Obesity Unit rather than to the Adolescent Endocrinology Unit.)

Catch-22 of Playing Catch-Up

In the PCOS phenotype, low birthweight is a common factor. “When there is a mismatch between birthweight Z-score and BMI Z-score in adolescence (even in the absence of obesity), there is high risk for ectopic (visceral) deposition of the excess of calories. This may happen, for example, in an adolescent who had a birthweight Z-score of –1.5 SD and has gone up to a BMI of +1.5 at age 14 years. In this subject, there has been a change of +3 SD in a relatively short period of time, and the amount of subcutaneous adipose tissue is not enough to store the excess of calories (lipids). In those cases, subcutaneous adipocytes enlarge, and when their capacity limit is reached, lipids start to spill over and go to viscerae (including the liver),” Ibáñez says. Thus, participants were also asked to engage in regular exercise and were placed on the Mediterranean diet, consisting of plenty of fruits and vegetables, more fish and poultry than meat, and water as the preferential beverage. The diet also eschews pre-cooked foods or artificial and sweetened beverages.



AT A GLANCE

- ▶ Treatment with the trio of drugs SPIOMET resulted in a 2.5-fold higher ovulation rate in adolescent girls than those treated with oral contraceptives, relating to loss of hepatic fat.
- ▶ Treatment with SPIOMET reduced visceral fat and normalized insulinemia, whereas androgenemia normalized more effectively with oral contraceptive treatment but demonstrated greater rebound of circulating free testosterone post treatment.
- ▶ Decreasing hepatic adiposity in adolescence may decrease the risk for subfertility in young adulthood.

PCOS: WHAT'S IN A NAME?

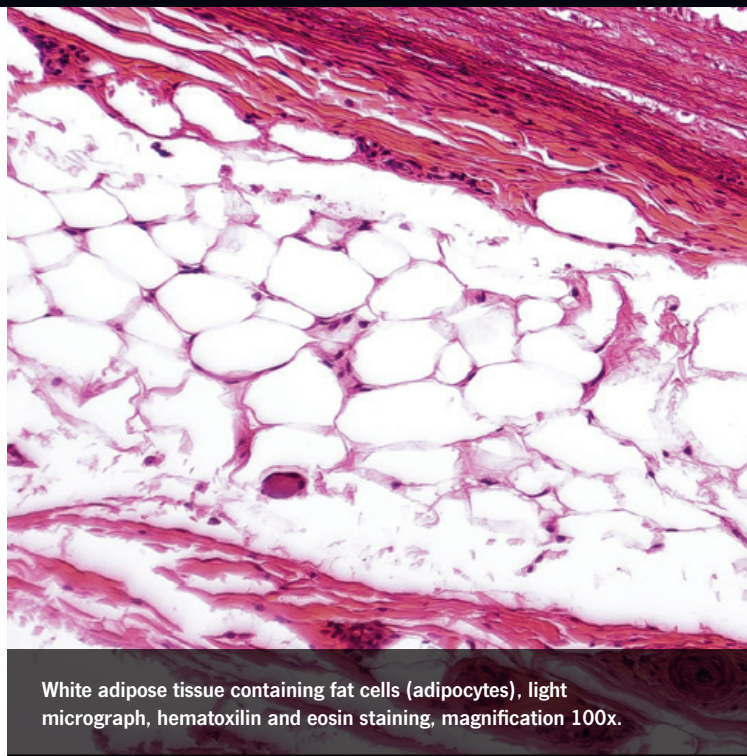
Since the condition was first described in 1935 by U.S. OB-GYNs Irving F. Stein, Sr., and Michael L. Leventhal, PCOS has been called many things, including polycystic ovary disease, functional ovarian hyperandrogenism, ovarian hyperthecosis, and sclerocystic ovary syndrome, and was originally labeled as Stein-Leventhal syndrome.

However, some experts are advocating for a new name.

According to a 2012 final report from the National Institutes of Health's (NIH) "Evidence-based Methodology Workshop on Polycystic Ovary Syndrome," the name PCOS is a distraction and an impediment to progress.

"It causes confusion and is a barrier to effective education of clinicians and communication with the public and research funders. The name focuses on a criterion — polycystic ovarian morphology — which is neither necessary nor sufficient to diagnose the syndrome," the report says. "It is time to expeditiously assign a name that reflects the complex metabolic, hypothalamic, pituitary, ovarian, and adrenal interactions that characterize the syndrome and their reproductive implications. The right name will enhance recognition of this major public health issue for women, educational outreach, 'branding,' and public relations and will assist in expanding research support."

Although a new name has not been decided upon, "Metabolic Reproductive Syndrome" has been discussed as an alternative. There are many steps needed before changing a medical condition's name, and, as of yet, that has not happened. Stay tuned.



White adipose tissue containing fat cells (adipocytes), light micrograph, hematoxylin and eosin staining, magnification 100x.

The groups were then monitored for an additional 12 months with menstrual diaries and weekly measurements of salivary progesterone, which researchers used to tally ovulations in the second trimester after treatment and again in the fourth. After 24 months, they found "marked differences" between ovulation rates among the two groups, with the SPIOMET-treated group demonstrating rates 2.5 times higher than those of the oral contraceptive-treated group.

A Debatable Regimen

This treatment, however, may be considered somewhat controversial. In "Diagnosis and Treatment of Polycystic Ovary Syndrome: An Endocrine Society Clinical Practice Guideline," Legro and task force recommend hormonal contraceptives as first-line treatment (in combination with lifestyle therapy in the setting of obesity) in adolescents, reserving the use of metformin for treating confirmed metabolic syndrome or glucose intolerance. "I don't think the marginal benefit justifies the substantial risk," he says. "Only one of those drugs, metformin, has ever been systematically studied in an adolescent population. Pioglitazone is associated with increased weight gain, and the U.S. FDA has added a warning about an increased risk for bladder cancer in 2016. Spironolactone can cause electrolyte imbalances and is potentially (as an anti-

DEFINING PROOF OF CONCEPT

As mentioned in the article, the original research presented at **ENDO 2017** was part of a proof-of-concept study. But what does that really mean?


A proof of concept is an effort to demonstrate a method or idea's feasibility and is typically a smaller study and may actually be somewhat incomplete.

"Proof of concept usually refers to studies designed to test a hypothesis and to provide initial support," says Andrea Gore, PhD, professor and Vacek Chair of Pharmacology, University of Texas at Austin, and editor-in-chief of *Endocrinology*. "It's really just jargon; in the basic sciences, such studies are usually first passes at the hypothesis, and intended to be the basis of further and more thorough work. In the clinical world, studies can be more comprehensive and serve as the basis for further trials."

Proof-of-concept studies are not only used in medical research, but also in engineering, business, software, and, of course, pharmaceutical development.

androgen) teratogenic to a male fetus (and these girls are now at increased risk for pregnancy with improved ovulation). I have heard the benefits, but what about the side effects and interactions of such a cocktail? They are actually more important than the benefits in determining the use of this drug in a vulnerable population."

However, the concept demonstrated by Ibáñez and team seems to suggest that hepatovisceral adiposity (and consequent hyperinsulinemia) is more prevalent than formerly understood and is a critical factor in the development of PCOS, stemming from increased gonadotropin secretion and ovarian androgen release. "The bottom line is this," says Ibáñez: "First, PCOS does not start in adolescence; the risk for developing PCOS may already be present shortly after birth. Thus, it is very important to avoid obesity and in the case of a low birthweight, to avoid a fast and excessive catch-up in weight. Second, that the first-line therapy is lifestyle intervention; additional therapies must address the decrease in hepatic fat, and this has been shown not to be the case with oral contraceptives." Of course, the potential risk for pregnancy has also to be taken into account where appropriate, she adds.

The researchers are already investigating further. "Because genetic and epigenetic factors may also negatively influence (and enhance) this outcome," Ibáñez says, "we are performing another study with the same drug combination, looking at the changes in microbioma and epigenetics." 

OnPoint from the



The Endocrine Society published a Clinical Practice Guideline on PCOS in 2013 available online at: www.endocrine.org/PCOSCPG. A Scientific Statement on PCOS that specifically deals with the diagnosis and treatment of this disorder was published in 2015 and is available at: www.endocrine.org/PCOSstatement. The Endocrine Society has also joined an effort to designate September as PCOS Awareness Month. For more details, see the article in InTouch on page 8.

HORVATH IS A FREELANCE WRITER BASED IN BALTIMORE, MD. SHE WROTE ABOUT THE LINK BETWEEN SECOND-HAND SMOKE AND DIABETES AND OBESITY IN THE AUGUST ISSUE.

Crossing Borders

While the ACA repeal effort is ongoing in Washington, D.C., other new initiatives from the Trump administration are also cause for concern. *Endocrine News* spoke with Syrian-born Endocrine Society member Alaa Al Nofal, MD, on what impact the travel ban could have on him, his practice, and his patients.

BY DEREK BAGLEY



Alaa Al Nofal, MD, is a pediatric endocrinologist who works at Sanford Children's Hospital in Sioux Falls, S.D. He is one of five full-time pediatric endocrinologists in all of South and North Dakota.

Al Nofal immigrated here from Syria, where he was born and raised and attended medical school in Damascus. He completed his residency at the University of Texas in Houston and his fellowship at the Mayo Clinic in Rochester, Minn., where he met his wife. He's here on the Conrad 30 visa waiver program, which allows J-1 doctors to apply for a waiver for the two-year residence requirement upon completion of the J-1 exchange visitor program, and then practice medicine for at least three years in an underserved area.

On busy days, Al Nofal sees up to 10 children a day, treating everything from type 1 diabetes to growth disorders. He's one of three pediatric endocrinologists at Sanford Children's Hospital, where he's involved in treating more than 400 children.

But now, with the Trump administration's executive order — which denies entry into the U.S. from seven countries, including Syria — there is uncertainty about what the future holds for Al Nofal and his family, the hospital that employs him, and the many patients who drive for miles to see him.

The U.S. Supreme Court will hear the travel ban in October. For now, the Court has allowed for a limited version of the order. *Endocrine News* caught up with Al Nofal to talk about the travel ban, his practice, and his passion for medicine and endocrinology.

EN: What made you want to become a doctor, and more specifically, an endocrinologist?

AN: [Laughs] I've been asked this question many times. Why I wanted to be a doctor, it was a dream of mine since I was a kid. It was my family's dream too, for me to be a doctor. I'm fulfilling my dream of helping people and fulfilling my family's dream of being the first doctor in the family. So that was what started it. I then decided I wanted to do pediatrics. During medical school, I started reading more and more on endocrine diseases and endocrine pathways, and I got really fascinated by it, and I decided I wanted to do pediatric endocrinology.

Tell us a little bit about your training in Damascus and in Texas.

AN: The University of Damascus is one of the oldest medical schools in Syria and the surrounding region. It was a privilege to be able to attend medical school there. During my years of medical school, I had a target. I had a plan. This plan was to become one of the first U.S. board-certified pediatric endocrinologists in Syria. And having my own division of pediatric endocrinology that is based on evidence-based medicine and that applies the highest level of care to Syrian children. I received a great level of support when I came to Houston for residency. I met great endocrinologists there, and one of my mentors also has Syrian origins — Dr. Michael Yafi. My fellowship was at the Mayo Clinic. I thought I'd try a new place, and I went from the heat and the humidity of Texas to the cold and snow of Rochester, Minn.

During my training, I met my wife, who is from Nebraska and was raised in Minnesota. Her family lives close by to us here in Sioux Falls, so we decided to move to Sioux Falls.

And speaking of Sioux Falls, I read that you treat more than 400 patients across a very large, underserved area. And this is coming at a time when the endocrinology workforce seems to be shrinking in general.

AN: To clarify, I'm involved in treating about 400 children. There are three endocrinologists here in our program, two full-time endocrinologists and one part-time. And we have a nurse practitioner. So in our clinic we have more than 400 children. There are five full-time pediatric endocrinologists in the states of North Dakota and South Dakota. And as you said, the number of endocrinologists in general is shrinking, and the need for pediatric endocrinologists is there. On busy days, we have about 10 patients a day. I'm also on call every other week, so we have an inpatient consult service in addition to our clinic.

That sounds challenging.

AN: Sometimes it is. We have a good employer here, and they're understanding about setting time for our clinic and our consulting for the sake of getting the best care for our patients.

What attracted you to the Endocrine Society?

AN: It's hard to be an endocrinologist in the United States and even around the world without being interested in joining the Endocrine Society. It's where all our guidelines come from. A lot of smart people are involved and leading the ship of endocrinology. So being a member of the Endocrine Society is an honor for any endocrinologist, pediatric or adult.

Have you been able to travel to ENDO?

AN: Yes, within the United States. I have not been able to travel outside the United States for conferences.

Were you in Orlando [for ENDO 2017]?

AN: I was. My wife and I were in Orlando. We debated going for a while. When the travel ban came, we started thinking "Should we? Should we not?" But we decided we should just go.

About the travel ban, you had to debate just to be able to travel to the ENDO conference. The Endocrine Society put out a statement when the first version of the travel ban was signed. Now that it is where it is — the U.S. Supreme Court will hear it in October — and now there's a limited version of it. What would you like to say to people who might read this and have some sort of say in what happens?

AN: While I do believe the president has every intention to keep Americans safe, I disagree with this approach. A travel ban based on the country of origin makes me worry. Many good people will be negatively affected by this "limited version" of the travel ban.



For example, there are many medical students from these countries who want to come to the U.S. and apply for residency. Based on the new travel ban, they will not be able to do that. Doctors and scientists from these countries cannot attend medical conferences in the U.S. There are many other examples.

You talked about one day returning to Syria with the knowledge you gained here, to be the first U.S. board-certified pediatric endocrinologist. Best case scenario, what do you hope to happen moving forward?

AN: This is a tough question. After the war, Syria became much different than how I left it a decade ago. Also, I have a wife and a child here in the U.S. now. I believe that Syrian doctors in the U.S. will have a great impact on the future healthcare in Syria after the war is over. This can be achieved through multiple channels, including the current available technologies, such as telemedicine. With the current technologies, the physicians can remotely make a difference and help rebuild the country.

The Supreme Court will decide whether some form of the Trump administration's executive order will become law of the land next month, and it could have an enormous impact not just on Al Nofal and his family, but thousands of other doctors in the United States on visa waivers, many of them from the seven countries named in the travel ban.

When the immigration order was first announced, the Endocrine Society released a statement reading in part: "The Society strongly opposes efforts that create barriers to the exchange of scientific information. We will continue to welcome and support scientists and clinicians from around the globe because science, like disease, has no borders." Stories like Al Nofal's truly drive that point home. **EN**

BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. HE WROTE ABOUT THE HIGHLIGHTS OF ENDO 2017 IN THE MAY ISSUE.

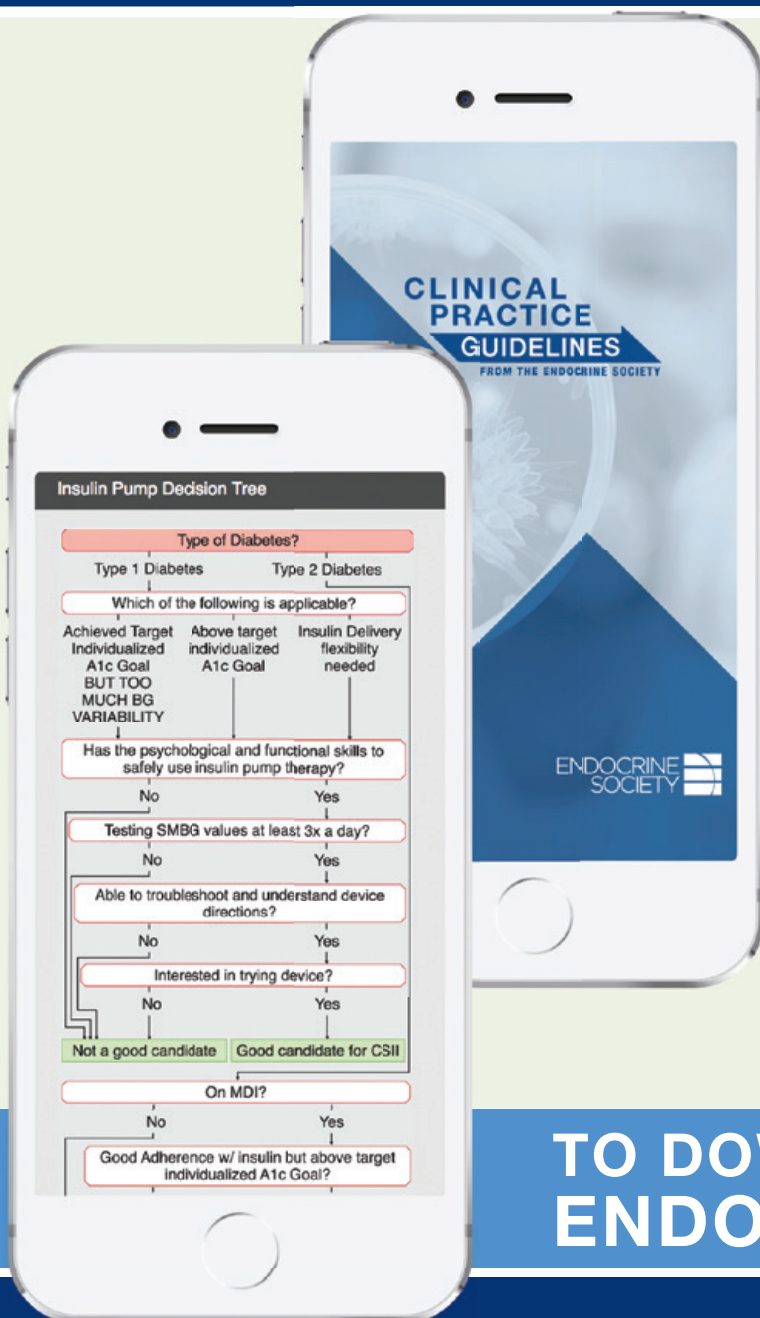
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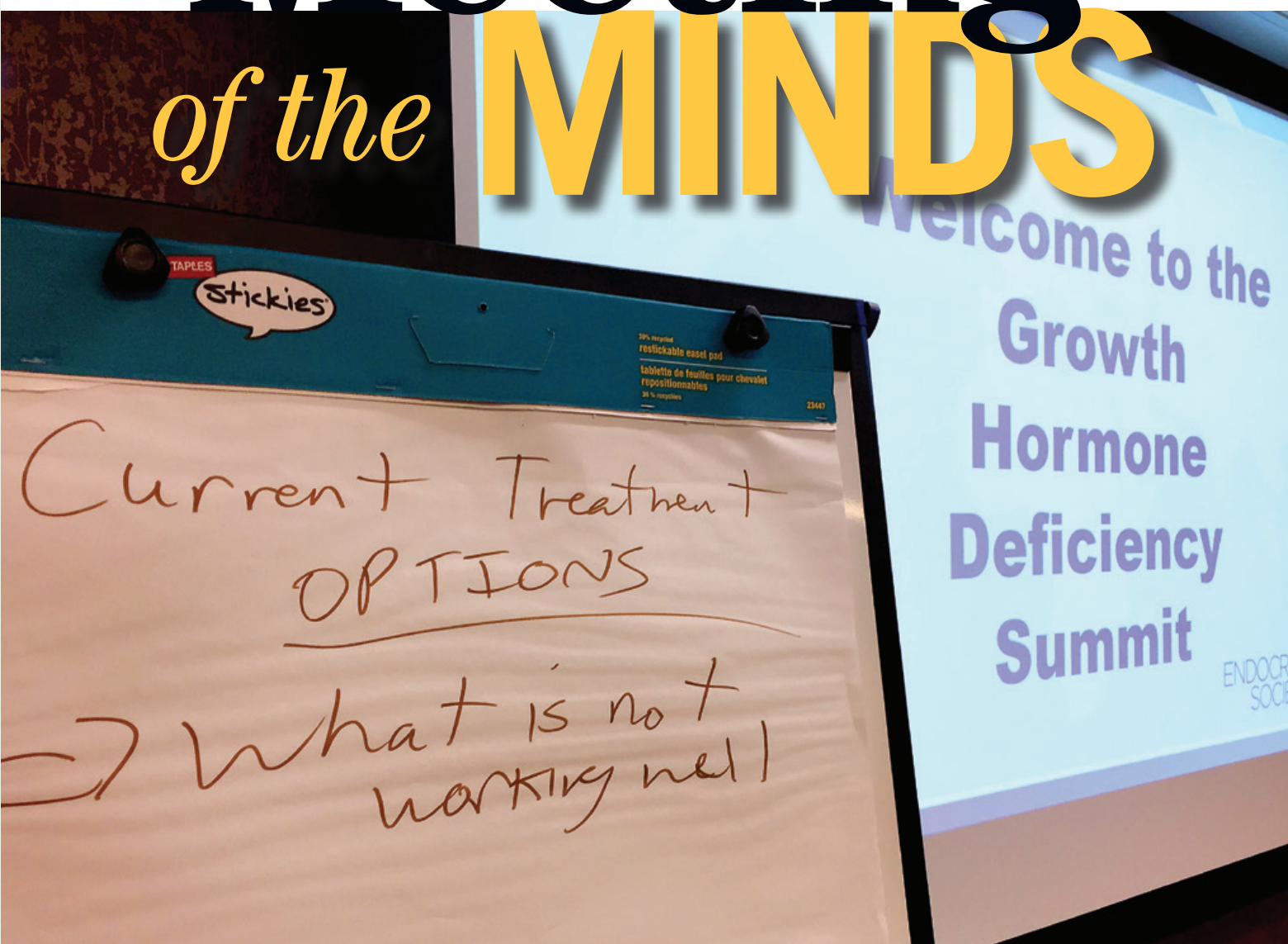
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Meeting *of the* MINDS

BY DEREK BAGLEY



The Endocrine Society sponsored the Growth Hormone Deficiency Summit in August to facilitate progress on how to move forward with treating this condition. Stakeholders from throughout healthcare were involved in a lively eight-hour discussion that delved into the complexities of the U.S. healthcare system.

Ron Rosenfeld's neighbors have a child who has growth hormone deficiency (GHD) and therefore needs treatment in order to reach optimal height.

These treatments consist of one shot under the skin each day, over a period of years, all of which cost somebody somewhere. Ron Rosenfeld's neighbors moved from Switzerland, where GH treatment is free for patients (as it is funded by the government). Here in the U.S., their deductible for the same treatments is \$5,000 a year.

Rosenfeld, MD, a pediatric endocrinologist and chair of Oregon Health Science University in Portland shared this anecdote to kick off the Endocrine Society's Growth Hormone Deficiency Summit — a meeting of 45 people representing the groups related to healthcare: physicians who prescribe these treatments, manufacturers of the drugs, payers, and patient advocacy groups. And while this summit focused on growth hormone deficiency, for eight hours on August 1, the presentations and lively discussions provided a clear glimpse into complexities of the U.S. healthcare system as a whole.

"The Endocrine Summit on GH treatment was an invaluable meeting of the minds," Rosenfeld says. "Optimal treatment of GHD requires teamwork between families, clinicians, the pharmaceutical industry, and payers."

A DELICATE DANCE

Indeed, the goal of the GHD summit was to facilitate these four groups talking frankly together in the Endocrine Society's Washington, D.C., offices about what works well, what doesn't, and where to go from here. It's a delicate dance. For example, Rosenfeld acknowledges that even though there is some disagreement about what constitutes actual GHD, physicians may be overdiagnosing and overtreating GHD patients, and that can cause a problem for insurers who have to pay for these drugs. "It's good medical practice to treat the child," he says, "even if the child may not be truly growth hormone deficient."

Even patient advocacy groups don't always see eye to eye when it comes to treating GHD. One group argues that GH treatment has been marketed as purely cosmetic, when physicians should be more worried about treating the medical conditions that overlap with GHD. Another group says that the cosmetic

aspect is relevant to treatment, since these patients may have psychosocial issues related to their short stature; these kids tend to be bullied more often. Or it could be something as simple as not being tall enough to ride certain attractions at theme parks. And this is just with pediatric patients.

NOT JUST FOR KIDS

Beverly B. K. Biller, MD, an endocrinologist at Massachusetts General Hospital and professor of medicine at Harvard Medical School in Boston, treats adults with GHD. She told the group about one of her patients, a 23-year-old man who had been treated as a child and reached a height of 5' 11", at which point his pediatric endocrinologist indicated he could stop the treatment. He was relieved because he disliked the daily shots. However, his family noticed that he subsequently lost motivation and became a "couch potato." Biller advised restarting treatments after confirming the diagnosis of GHD, since adults with persistent GHD like this patient can have more visceral fat, weaker bones, increased risk of cardiovascular events, and an overall lower quality of life. Yet, replacement of the missing GH can improve these conditions.

Adults with persistent GHD must remain on treatment for the rest of their lives. Treatment reduces visceral fat and increases bone density, and means missing fewer days of work.

But there are many barriers to optimally treating these patients, according to Biller. Some physicians are not aware of the syndrome of adult GHD, the demonstrated benefits with replacement, and the fact that it has been an approved hormone replacement in the U.S. for more than 20 years. Even when it is considered, making the diagnosis can be challenging, as it requires a stimulation test in many patients. In addition, many patients are reluctant to take daily injections and may have difficulty adhering to the schedule of shots. Other issues with GH replacement in adults are that dosing and monitoring are not standardized, there's an unusual prescribing system (it's not available at local pharmacies), and there can be issues with cost and insurance.

“The Endocrine Summit on GH treatment was an invaluable meeting of the minds,” Rosenfeld says. **“Optimal treatment of GHD requires teamwork between families, clinicians, the pharmaceutical industry, and payers.”**



Insurance companies and plans can vary widely on what's covered or what's required to receive coverage, and they can decide to change which drugs they have on their formularies from year to year, which can create problems for patients familiar with how to use one injection pen and then need to learn another.

IN SEARCH OF ADVOCATES

During the Summit, several physicians voiced their frustrations that insurance companies may deny prior authorizations without an explanation. And one doctor pointed out that sometimes it feels as though the payers are dictating what physicians can prescribe, implying that insurance companies are essentially practicing medicine. But this summit was about finding solutions to these problems, and all agreed that they would like to see payers move from a more adversarial relationship with physicians, to being their partners in providing the best care for patients.

Part of the summit involved two breakout sessions, during which the attendees divided into three groups (pediatric, adult, and mixed) to discuss possible solutions to the payer/physician dynamic and compliance/adherence.

Here are some suggestions from the payer/physician breakout session:


- ▶ The authorization process is necessary because it curbs abuse, but the process needs to be streamlined, particularly for annual renewals in the subset of patients who will never recover their GH production (such as due to tumors, surgery, or radiation in the pituitary area);
- ▶ Insurance liaison boards could be developed, similar to industry liaison boards;
- ▶ Involve advocacy patient groups; and

- ▶ It would be ideal to harmonize forms across all payers; individual insurance companies could have a customized section for any specific needs not on the standard form.

But even if this dynamic is solved tomorrow, compliance still looms as the biggest barrier to treatment. Here are a few suggestions from that breakout session:

- ▶ Long-acting GH treatments (shots needed just once a week or every other week), which are in several phases of development across the industry;
- ▶ Physicians need to determine who will benefit most from long-acting GH when/if these compounds are approved by the FDA: Newly diagnosed? Patients who have problems with their daily injections?; and
- ▶ There should be a registry to study long-term results of treatment with long-acting GH. This registry could be similar to the child cancer survivors' registry, in which pediatric oncologists obtain patients' consent to enter their data as anonymous medical records in the registry (siblings could be used as controls for the pediatric patients).

At the beginning of the summit, Rosenfeld remarked that he attended a similar summit 20 years ago, although this one was far more robust and comprehensive. Still, the healthcare system faces the same issues it did two decades ago when it comes to GHD, which, Rosenfeld says is the easiest to treat and the hardest to diagnose.

But the critical issue remains: Who is going to pay for GH therapy? Endocrinologists don't want to miss an opportunity to get their patients to grow to normal heights. By the end of the day, he said he anticipates there will still be payer issues once long-acting GH is brought to market. But, he says, "insurance companies are not the enemy. We all want what's best for our patients." 

BAGLEY IS THE SENIOR EDITOR OF *ENDOCRINE NEWS*. HE WROTE ABOUT THE DOCTABLET ONLINE EDUCATION PORTAL IN THE AUGUST ISSUE.

What's Up, Postdoc?

After receiving their PhDs, some scientists go into industry and others pursue grant-dependent research. But how do you decide whether to pursue a postdoctoral position and — more importantly — is it worth it?

BY GLENDA FAUNTLEROY



For many biomedicine scientists, pursuing a postdoctoral position after earning a PhD is the next step on the career ladder. A recent study in *Nature Biotechnology*, however, looked at how postdoctoral positions impact scientists' careers. It raises the question of whether the pursuit is really worth it?

A postdoctoral (or postdoc) is a period of time (about three to four years or longer) used to describe many types of positions, including traineeships, fellowships, and research scientists, and many agree the “postdoc” term can be confusing. A postdoc is the only stage in the education, training, and career development of a scientist or engineer that is referred to only by the period of time, and not the position itself, according to a 2014 report by the National Academy of Sciences. Often, there is no agreed-upon specific title, so there is no agreed-upon set of goals or outcomes for the position.

Is it a continuation and enhancement of the PhD and graduate school (traineeship)? Or is it an entry-level career position with the corresponding benefits and job training expected from any entry-level position (researcher)?

The *Nature Biotechnology* study included survey responses of 10,402 biomedical PhDs who received their degrees between 1980 and 2010. Study data was from the 1981–2013 National Science Foundation (NSF) Survey of Doctorate Recipients.

It showed that despite a boom in biomedical PhDs in the U.S., the

available number of permanent academic positions is low, coupled by a significant drop in National Institutes of Health funding rates.

The Shrinking Job Pool

The number of biomedical PhDs awarded between 1981 and 2010 grew by 132% in the U.S. — largely due to increased numbers of foreign nationals and women, according to the study. After earning a PhD, many seek additional training in postdocs with the chief purpose to obtain tenured/tenured-track (TT) research positions. However, while the number of these jobs did grow by 150% (about 8,700 jobs) from 1981 to 2013, the number of new PhDs jumped by a whopping 278% (102,000 people).

These numbers show the shrinking possibility of getting a much-desired tenured/TT position. Only 27% of working postdocs held such positions, according to the study. So where are the other three-fourths working? More were in industry jobs (35%). And, 14.7% of ex-postdocs landed in non-TT research academia, mostly soft-money jobs dependent on grants.

A Return on Investment?

Compared with their peers who started working outside academia immediately after earning their degrees, scientists were paid much less during postdocs than they would have been if they had entered the workforce directly. Those who started in postdocs earned an annual average of \$44,724 during their first four years



“ Outside of tenured/TT academia, employers did not financially value the training or skills from postdoc training. Most PhDs would be financially better off if they skipped postdoc.”



after the PhD when they were still in postdocs. Those who entered the workforce directly earned an annual average of \$73,662.

The wage gap still exists years later — the 10-year post-PhD annual salaries of those who started in a postdoc was about \$12,000 less than those who skipped postdocs.

“Outside of tenured/TT academia, employers did not financially value the training or skills from postdoc training,” wrote the study authors. “Most PhDs would be financially better off if they skipped postdoc.”

Co-author Shulamit Kahn, PhD, of the Questrom School of Business at Boston University, says the findings surprised her as she originally thought postdoc training would add value in any research job. She answered the bottom line.

“The postdoc is only worth pursuing if you really want an academic tenure-track job and believe that you are exceptional and have a much better probability of getting such a job,” Kahn says. “But you need to be very honest with yourself in evaluating how likely you are to get the tenure-track academic job.”

“Also, talk to your advisor and other professors and ask them if they think you are exceptional enough and have the skills to be a successful academic.”

Kahn also considers the quest worthwhile if there is something that you didn’t learn in grad school that you need to learn in order to do the job/research you want to and can accomplish that within a couple of years.

She adds that if you fall into either category, be certain that your postdoc mentor will let you work on topics of your choice, where you will be first author, and that can be completed in a reasonable amount of time.

“Be sure that your mentor will actively help you get a good job,” Kahn advises. “For this, you need to talk to current and previous postdocs about his/her experiences with the mentor you’re considering. And, it’s always better to have your own funding, such as NIH postdoc grants, in order to determine your own research agenda.” ^{EN}

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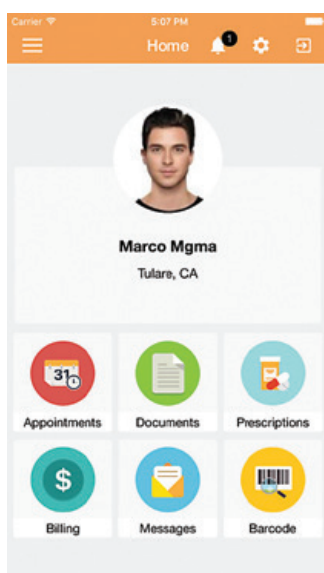


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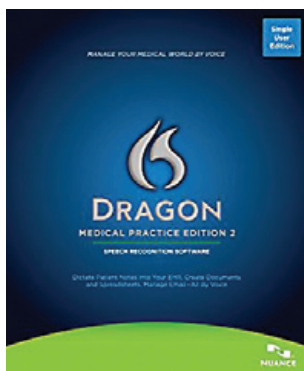
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Join Your Colleagues and Advocate for Your Research!



As the federal government approaches the new fiscal year (FY), beginning October 1, ongoing congressional battles over the budget are causing a great deal of uncertainty regarding the funding outlook for the National Institutes of Health (NIH) and other federal agencies and programs in FY 2018.

In August, Congress left for their summer recess without passing an appropriations bill to fund the NIH. As legislators return to Washington, D.C., they have only 12 working days to come to an agreement on appropriations bills, a deal to raise the debt limit, and a deal to increase the budget caps. This convergence of factors raises the likelihood of at least a short-term continuing resolution (CR) that would keep the government running while legislators finalized spending bills for the next fiscal year.

While a CR would “keep the lights on,” the NIH budget would essentially be flat, and the NIH and other agencies would be prevented from starting important new research projects. Moreover, there is also the possibility that the CR would extend for a longer period of time, or perhaps even the entire year. A long-term CR would fail to provide necessary increases in the NIH budget and result in further erosion of overall grant success rates for researchers. This outcome is unacceptable to the Endocrine Society, and we are implementing high-impact advocacy initiatives that will increase pressure on Congress. Our goal is to ensure that they complete the necessary work and provide adequate research funding that will result in more funded investigator-initiated research projects.

On September 14, members of the Endocrine Society will join over 300 organizations in Washington, D.C., to visit members of Congress and advocate for increased funding for biomedical research as part of the Rally for Medical Research. Four members of the Society from key districts will participate in the rally and discuss the importance of endocrine research. We extend our sincere appreciation to Heather Patisaul, PhD; Benson Tokunbo Akingbemi, PhD, DVM; T. Rajendra Kumar, PhD, MSC; and Lindsey Trevino, PhD, for traveling to D.C., and ensuring that their representatives understand the importance of endocrine research and the need to provide steady, sustainable increases in funding for the NIH.

However, we need all our members to add their voices so that Congress appreciates that inaction would hurt biomedical research and prevent our members from conducting lifesaving research. To join your colleagues and make a difference, we have implemented a special advocacy campaign on the Society’s new advocacy webpage at www.endocrine.org/advocacy. Please spend a minute (yes, that is all it takes) to complete the online form and send a letter to your representatives. Our program provides the letter for you and will direct it to the correct congressional offices.

Only a robust response from the research community will ensure that legislators provide the NIH with the funds that the biomedical research enterprise desperately needs.

FDA Hosts Public Workshop on Hypoglycemia in Older Adults; Society to Present Hypoglycemia Work

The Food and Drug Administration's (FDA) Center for Drug Evaluation and Research, Professional Affairs and Stakeholder Engagement Staff (PASES) is hosting a one-day public workshop September 12 to discuss the importance of individualized glycemic control targets for older patients with diabetes to reduce the risk of serious hypoglycemia; identify and discuss medication safety efforts; discuss future areas of research that 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. Those interested in attending the workshop entitled "Reducing the Risk of Preventable Adverse Drug Events Associated with Hypoglycemia in the Older Population" in person or via webcast can register at: <https://www.eventbrite.com/e/fda-public-workshop-reducing-the-risk-of-preventable-adverse-drug-events-associated-with-tickets-33887437237>

Robert Lash, MD, chair of the Society's Clinical Affairs Core Committee and Hypoglycemia Quality Improvement Project (HQuIP), will share our work to reduce the incidence of hypoglycemia through the Hypoglycemia Quality Collaborative, HQuIP, and partnership with numerous federal agencies to raise awareness of hypoglycemia.



The panel of participants at diaTribe's "Glycemic Outcomes Beyond A1c: Standardization and Implementation" on July 21 are (left to right): **Dr. Aaron Kowalski** (JDRF), **Dr. Will Cefalu** (ADA), **Prof. Thomas Danne** (ATTD), **Prof. Stephanie Amiel** (IHSG), **Dr. Zach Bloomgarden** (AAACE), and **Dr. Anthony McCall** (Endocrine Society).

Endocrine Society Shares Diabetes Priorities in diaTribe Meeting

The Society participated in the conference "Glycemic Outcomes Beyond A1c: Standardization and Implementation" on July 21 hosted by diaTribe, the patient-focused arm of Close Concerns.

The meeting continued the conversation of outcomes beyond A1c that should be considered in clinical trials for diabetes medications. The conference brought together experts from the U.S. and Europe to reach a consensus on which glycemic outcomes beyond A1c are important and how to report them in a standardized way. Glycemic outcomes that were discussed included measures such as hypoglycemia, time spent in-range, and hyperglycemia.

Tony McCall, MD, PhD, vice president for clinical science at the Society, shared the Society's support for these outcomes and highlighted our work to advance the goals of the diabetes community on outcomes beyond A1c and our quality improvement initiative, the Hypoglycemia Quality Improvement Project (HQuIP), aimed at identifying interventions that will reduce the incidence of hypoglycemia. ^{EN}

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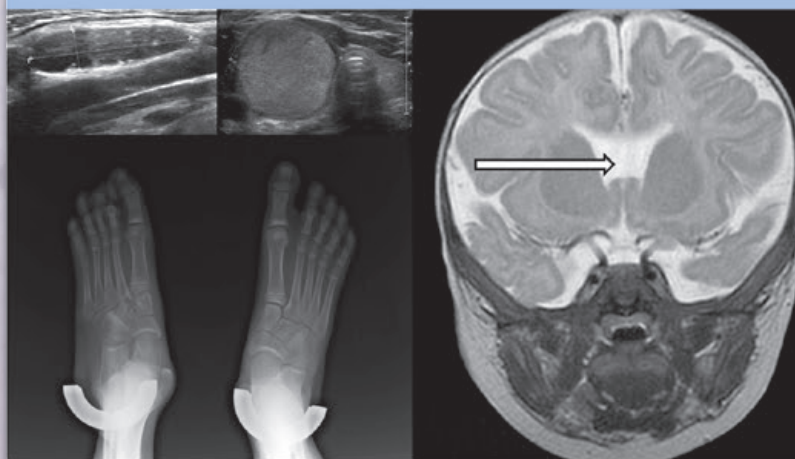
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POLYCYSTIC OVARY SYNDROME

WHAT YOU NEED TO KNOW

The endocrine system is a network of glands and organs that produce, store, and secrete hormones. Normally, women make small amounts of “male” hormones (called androgens), but women with Polycystic Ovary Syndrome (PCOS) produce slightly higher amounts of androgens. This hormone imbalance causes an assortment of health problems, many of which are related to the reproductive system.

WHAT IS PCOS?

A hormonal disorder that may be characterized by a constellation of symptoms that may include:

- Irregular or absent menstrual periods
- Infertility
- Weight gain (especially at the waist)
- Acne
- Excess hair on the face and body
- Thinning scalp hair
- Skin tags
- Darkening skin
- Depression or anxiety
- Poor sleep

When the body cannot use insulin properly, it secretes more insulin to make glucose available for cells. Often linked to **obesity**, many women with PCOS tend to make too much insulin. The resulting excess in insulin is thought to also boost male hormone or **androgen production** by the ovaries.

POTENTIAL PCOS CAUSES

Although we don't know for sure what causes PCOS and none of these is a direct cause, each one is highly related to the condition.



Insulin Resistance — some women are less sensitive to insulin than normal, which makes their ovaries produce too many male hormones.



Genetics — PCOS appears to run in families, so having a mother or sister with the condition makes you more likely to have it.



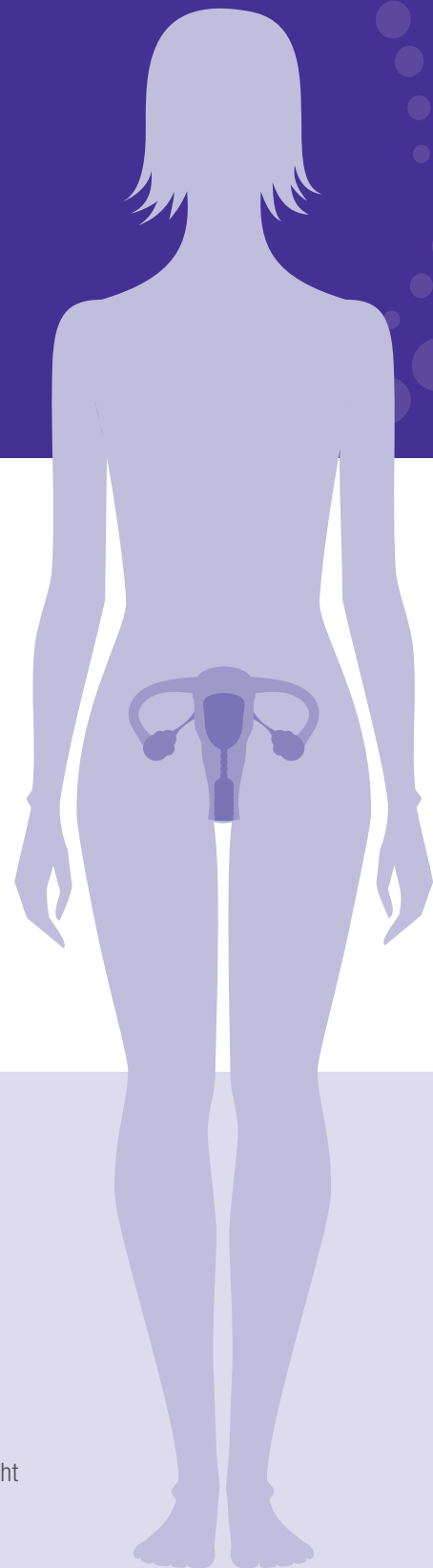
Obesity — because women and girls with PCOS are more likely to gain excess weight and women and girls who are obese are more likely to have the condition, there is a tight, but not absolute, link between the two.

Visit hormone.org for more information.

Additional Editing by Genevieve Neal-Perry, MD, PhD,
University of Washington



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PCOS CAN AFFECT A WOMAN'S:

- Menstrual cycle
- Ability to have children
- Hormones
- Heart
- Blood vessels
- Appearance
- Mental health
- Risk for cancer
- Metabolic syndrome

On ultrasound, the ovaries appear to have a multiple number of small follicles (also called cysts) that are often arranged in a ring around the ovary. Science indicates these are related to arrested egg development and failed ovulation.

DID YOU KNOW?

Women with PCOS often have type 2 diabetes, low levels of good cholesterol (HDL), and high levels of bad cholesterol (LDL) and other blood fats, including triglycerides. These may increase the risk of heart attack or stroke.

PCOS affects 7-10% of women of childbearing age and is one of the most common causes of infertility.

In the United States, an estimated 5-6 million women have PCOS.

Sleep apnea may occur in up to 50% of women with PCOS.

Pregnant women with PCOS appear to have higher rates of:

- Miscarriage
- Diabetes during pregnancy
- Pregnancy-induced high blood pressure (preeclampsia)
- Premature delivery
- Endometrial cancer

Source: U.S. Department of Health and Human Services and National Institutes of Health

TREATMENT

In addition to medications to help manage your symptoms, a healthy diet and brisk physical activity are nearly always part of a treatment plan for PCOS. Attention to blood sugar levels is also very important. Be sure to follow your treatment plan exactly as your doctor prescribes so you can control your PCOS symptoms and reduce risk factors that can change the quality of your life.

5 STEPS TO LIVING BETTER WITH PCOS

- Limit processed foods
- Add more whole grains
- Eat more fruits, vegetables, and lean meats
- Maintain a healthy weight
- Get moving



Patients have questions. We have answers.

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



Hormone Health
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FROM THE ENDOCRINE SOCIETY

Change lives. Start with your own.

Aspirus is a nationally recognized, physician-driven health system based in Wausau which is located in the center of Wisconsin. The care we give to others is the reason Aspirus is thriving and unifying in spite of national health care changes.

There's a simple reason you chose a career in Endocrine Medicine. We invite you to practice it here:

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- Collaborate with a dedicated and experienced support team, including Certified Diabetic Educators
- Flexible scheduling
- Large referral area that includes 20 counties, willingness to do outreach is preferred
- Potential teaching opportunities available through the Aspirus Wausau Family Medicine Residency program and the Medical College of Wisconsin both onsite
- Above average compensation package that includes income guarantee and production bonuses
- Other incentives: potential for residency stipend, loan repayment of up to \$200,000 and sign-on bonus options
- J1 and H1-B visa possibilities
- We pride ourselves on excellence: Aspirus Wausau Hospital recently received recognition as one of the 100 Best Hospitals in America for 2016
- EPIC EMR used throughout the system



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- Excellent opportunity working with an established practice and Beebe's Diabetes Management Dept.
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- Competitive salary with generous benefits package
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About Beebe Healthcare:

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- 375+ providers on staff; 48,000+ Emergency visits
- Margaret H. Rollins School of Nursing

About the area:

- Nationally ranked family-oriented beaches and boardwalks by *Parents Magazine*, *National Geographic*, *Travel and Leisure*, and *American Profiles*
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